A1 SHEET

PROPOSED HARDSTAND AREA FOR WILLFAB SUPER FUND 38-40 ENTERPRISE CRESCENT MUSWELLBROOK, NSW 2333

MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of
Council's Notice of Determination

DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

LOCALITY PLAN
REFERENCE: SIXMAPS

PROPOSED HARDSTAND
TO SUBJECT LOT 20
DP: 1119843

DRAWING SCHEDULE:

DWG No	DRAWING TITLE	REV	DATE	
19-027-C00	COVER SHEET, LOCALITY PLAN & INDEX SCHEDULE	D	05/08/20	D
19-027-C01	GENERAL NOTES SHEET 1 OF 1	A	10/01/20	
19-027-C02	EXISTING SITE FEATURES	B	05/08/20	B
19-027-C03	SEDIMENTATION AND EROSION PLAN - STAGE 1.0 & 2.0 WORKS	C	05/08/20	C
19-027-C03.1	SEDIMENTATION AND EROSION PLAN - STAGE 3.0 - 4.0 WORKS	A	05/08/20	A
19-027-C03.2	SEDIMENTATION AND EROSION PLAN - STAGE 5.0 WORKS	A	05/08/20	A
19-027-C04	SEDIMENTATION AND EROSION CONTROL	A	10/01/20	
19-027-C05	PROPOSED EARTHWORKS PLAN	C	05/08/20	C
19-027-C06	PROPOSED GRAVEL PLAN AND LEVELS	D	05/08/20	D
19-027-C06.1	HARDSTAND CROSS SECTIONS SHEET 1 OF 1	A	05/08/20	A
19-027-C06.2	HARDSTAND CROSS SECTIONS SHEET 1 OF 2	A	05/08/20	A
19-027-C07	PROPOSED HARDSTAND PLAN	D	05/08/20	D
19-027-C08	TYPICAL SECTIONS - SHEET 1	D	05/08/20	D
19-027-C08.1	TYPICAL SECTIONS - SHEET 2	A	05/08/20	A
19-027-C09	DRIVEWAY PLAN AND LONGSECTION	D	05/08/20	D
19-027-C10	TURNING TEMPLATE	B	04/02/20	
19-027-C11	BASIN PLAN AND LONGSECTION	D	05/08/20	D
19-027-C12	BASIN CROSS SECTIONS SHEET 1 OF 1	C	05/08/20	C
19-027-C13	PIPE PLAN AND LONGSECTIONS	C	05/08/20	C
19-027-C14	PIPE DETAILS AND SECTIONS	D	05/08/20	D
19-027-C15	LANDSCAPE PLAN	B	05/08/20	B

REV	DESCRIPTION	DATE	BY
D	GENERAL AMENDMENTS	05/08/20	CH
C	GENERAL AMENDMENTS	16/06/20	CH
B	INCREASE HARDSTAND AREA	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	CH

WILLFAB SUPERFUND
c/o GRAEME RAY
PO BOX 136
LAMBTON, NSW, 2099

PROPOSED HARDSTAND
38-40 ENTERPRISE CRESCENT
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COVER SHEET, LOCALITY PLAN AND INDEX

Scale
Horizontal:

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027-C00	D

A1 SHEET

GENERAL

G1 IF IN DOUBT ASK.

G2 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS TO INCLUDE SURVEY & GEOTECHNICAL REPORTS AND SPECIFICATIONS AND SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.

G3 MATERIAL & WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT S.A.A. CODES AND RELEVANT AUTHORITIES.

G4 ALL DIMENSIONS AND REDUCED LEVELS MUST BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF WORK.

G5 SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER.

G6 UNLESS NOTED OTHERWISE ALL LEVELS SHOWN ARE TO THE AUSTRALIAN HEIGHT DATUM. GRID LINES TO MGA. NOTE CORRECT FACTOR APPLY.

G7 SERVICE INFORMATION SHOWN IS BASED ON PLANS SUPPILED BY AUTHORITIES AND IS APPROXIMATE ONLY. PRIOR TO THE COMMENCEMENT OF ANY WORKS, THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND SERVICES AND COMPLY WITH ALL REQUIREMENTS OF THOSE AUTHORITIES.

G8 EXISTING SURFACE CONTOURS, WHERE SHOWN, ARE INTERPOLATED AND MAY NOT BE ACCURATE.

G9 PRIOR TO THE PLACEMENT OF ANY FILL, PAVEMENT OR BUILDING, THE EXPOSED SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 100% STANDARD COMPACTION IN ACCORDANCE WITH TEST 'E1.1' OF A.S. 1289 FOR THE TOP 300MM. ANY SOFT SPOTS SHALL BE REMOVED AND REPLACED WITH GRANULAR FILL TO THE ENGINEERS APPROVAL AND COMPACTED IN ACCORDANCE WITH THE COMPACTION REQUIREMENTS SET OUT BELOW.

G10 GRADE EVENLY BETWEEN FINISHED SURFACE SPOT LEVELS. FINISHED SURFACE CONTOURS ARE SHOWN FOR CLARITY. WHERE FINISHED SURFACE LEVELS ARE NOT SHOWN, THE SURFACE SHALL BE GRADED SMOOTHLY SO THAT IT WILL DRAIN AND MATCH ADJACENT SURFACES OR STRUCTURES.

G11 UNLESS NOTED OTHERWISE, ALL DOWNPIPES SHALL BE CONNECTED TO PITS OR MAIN STORMWATER DRAINS WITH UPVC PIPES OF THE FOLLOWING SIZES LAID AT A MINIMUM GRADE OF 1 IN 100:
A. 100 DIA. FOR DOMESTIC CONSTRUCTION.
B. 150 DIA. FOR COMMERCIAL / INDUSTRIAL CONSTRUCTION.
C. CONNECTION TO BE PRESSURISED.

G12 UNLESS NOTED OTHERWISE ALL MAIN STORMWATER DRAINS SHALL BE CONSTRUCTED USING ONE OF THE FOLLOWING TYPES OF PIPES WITH RUBBER RING JOINTS:
A. CLASS 2 RCP IN ACCORDANCE WITH A.S. 1342
B. UPVC IN ACCORDANCE WITH A.S. 1260
ANY OTHER TYPES OF PIPE MUST BE REFERRED TO COUNCIL FOR APPROVAL PRIOR TO USE. IF UPVC, OR OTHER PIPES ARE TO BE USED, APPROVAL MUST BE GIVEN BY THE ENGINEER FOR CLASS, BEDDING AND BACKFILL REQUIREMENTS.

G13 GENERALLY FOR TRENCHING WORKS THE CONTRACTOR MUST:
A. COMPLY WITH THE GENERAL PROVISIONS OF THE 'OCCUPATIONAL HEALTH SAFETY ACT 2000.
B. COMPLY WITH THE 'OCCUPATIONAL HEALTH & SAFETY CODE OF PRACTISE FOR SAFETY PRECAUTIONS IN TRENCHING OPERATIONS'.
C. FULFILL ALL WORK COVER REQUIREMENTS.

G14 ANY STRUCTURES, PAVEMENTS OR SURFACES DAMAGED, DIRTIED OR MADE UNSERVICABLE DUE TO CONSTRUCTION WORK SHALL BE REINSTATED TO THE SATISFACTION OF THE ENGINEER.

G15 AUSPEC SPECIFICATION TO APPLY

G16 MINIMUM BEARING PRESSURE TO SUBGRADE 100kPa

FILL TYPES

FT1 GENERAL FILL : WELL GRADED MATERIAL MAX PARTICLE SIZE 75MM
: PLASTIC INDEX LESS THAN OR EQUAL TO 55%
SELECT FILL : MAX PARTICLE SIZE 75MM
: PROPORTION PASSING 0.075 SIEVE 25% MAX
2% LESS THAN OR EQUAL TO PLASTIC INDEX
LESS THAN OR EQUAL TO 15%

FT2 TRENCHES OVER 1.5M DEEP SHALL ALWAYS BE CBR >30% SHORED. TRENCHES LESS THAN 1.5M DEEP SHALL BE SHORED IF UNSTABLE OR IF DEEMED NECESSARY BY RELEVANT AUTHORITY.

FT3 IF FILL PLACED ON SURFACE WHICH SLOPES MORE THAN 1.4 THEN THE NGL SHALL BE BENCHED

FT4 TOLERANCES: THE FINISHED SURFACE LEVELS SHALL HAVE THE FOLLOWING TOLERANCES:
- UNDER SLABS AND LOADBEARING ELEMENTS +0, -25MM
- OTHER GROUND SURFACES +10MM,-30MM PROVIDED THE AREA REMAINS FREE DRAINING AND MATCHES ADJACENT CONSTRUCTIONS

FT5 FILL SHALL BE PLACED IN LAYERS TO THICKNESS NOMINATED BY THE ENGINEER. EACH LAYER SHALL OBTAIN SPECIFIED COMPACTION BEFORE THE NEXT IS PLACED. DURING PLACEMENT OF FILL, THE SURFACE SHALL ALWAYS REMAIN FREE DRAINING

FT6 FILL AGAINST STRUCTURES SHALL BE PLACED AND COMPACTED SIMULTANEOULSY ON BOTH SIDES TO AVOID DIFFERENTIAL LOADING.

FT7 FILL SHALL NOT BE PLACED AGAINST CONCRETE FOR FOURTEEN DAYS AFTER CONCRETE PLACEMENT

FT8 FILL MOISTURE CONTENT SHALL BE BETWEEN 85-110% OF OPTIMUM MOISTURE

1. ALL EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE WORK.
2. ALL EROSION CONTROL MEASURES MUST BE INSPECTED AFTER EACH RAINFALL EVENT. SILT SHALL BE REMOVED TO AN APPROVED LOCATION.
3. SEDIMENT FENCES, TRAPS & FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLANS PREPARED BY THE CONTRACTOR.
4. SEDIMENT FENCES, TRAPS & FILTERS SHALL BE MAINTAINED IN THE LOCATION SHOWN ON THE DRAWING UNTIL SUCH TIME THAT ALL WORK IS COMPLETED AND A SUITABLE GRASS COVER IS ESTABLISHED.

REINFORCED CONCRETE

RC1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

RC2 READYMIX CONCRETE SUPPLY SHALL COMPLY WITH AS 1379.

RC3 CONCRETE QUALITY - MINIMUM - REFER TO RELEVANT DRAWINGS.
ALL THE REQUIREMENTS OF THE ACSE CONCRETE SPECIFICATION DOCUMENT 1 (LATEST EDITION)SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	STRENGTH Grade(MPa)	SLUMP	MAX. AGG SIZE	CEMENT TYPE
FOUNDATION	32	80	20	Portland
PIERS	25	80	20	Portland

COMPRESSIVE STRENGTH
SAMPLE, TEST, AND ASSES TO AS 1379. ALL TESTING TO BE CONDUCTED BY A NATA REGISTERED LABORATORY.
THE MINIMUM FREQUENCY OF SAMPLING OF THE CONCRETE AT EACH STAGE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
NO. OF BATCHES SUPPLIED

TO THE PROJECT PER DAY	NO. OF SAMPLES TAKEN
1	1
2 to 5	2
6 to 10	3
11 to 20	4
For each additional 10 samples	1

A SAMPLE SHALL CONSIST OF FOUR CYLINDERS, TWO OF WHICH SHALL BE TESTED AT 28 DAYS ,ONE AT 7 DAYS AND ONE AT 4 DAYS. IF THE CONTRACTOR REQUIRES EARLY STREGTH RESULTS, ADDITIONAL CYLINDERS SHALL BE TAKEN IN THE SAMPLE AS REQUIRED AND AT THE COST OF THE CONTRACTOR.

OTHER QUALITY PARAMETERS
SAMPLE, TEST AND ASSES TO AS 1379 SECTION 5.
SLUMP: TEST NOT LESS THAN ONE SAMPLE FOR EACH BATCH BEFORE PLACING CONCRETE FROM THAT BATCH IN THE WORK. TAKE THE SAMPLES AT THE POINT OF DISCHARGE ON SITE.
DRYING SHRINKAGE: THE MAXIMUM TOTAL DRYING SHRINKAGE LIMIT FOR THE CONCRETE SHALL BE AN AVERAGE OF 0.070% AT 56 DAYS AND NO SINGLE RESULT SHALL EXCEED 0.075%. MEASUREMENT SHALL BE IN ACCORDANCE WITH AS1012 PART 13 AND BE CONDUCTED BY A NATA REGISTERED LABORATORY. REFER TO RELEVANT FLOOR DRAWINGS FOR SPECIFIC SHRINKAGE REQUIREMENT
REJECTION: REMOVE THE CONCRETE FROM THE SITE.

RC4 NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.

RC5 DEPTH OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESSES. SLABS AND BEAMS SHALL BE CAST TOGETHER UNLESS NOTED OTHERWISE.

RC6 CONCRETE SIZES DO NOT INCLUDE THICKNESSES OF APPLIED FINISHES.

RC7 NO HOLES, CHASES OR EMBEDMENTS OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE IN CONCRETE ELEMENTS WITHOUT THE PROJECT ENGINEERS APPROVAL.

RC8 CONCRETE SHALL BE KEPT FREE OF SUPPORTING MASONRY WITH A PRE-GREASED GALVANISED STEEL SLIP JOINT, VERTICAL FACES SHALL BE SEPARATED BY 10MM JOINTEX (OR EQUAL).

RC9 CONSTRUCTION JOINTS SHALL BE LOCATED TO THE SATISFACTION OF THE PROJECT ENGINEER. THE BUILDER SHALL ALLOW FOR ALL NECESSARY CONSTRUCTION JOINTS.

RC10 SLABS WHERE NOTED ON PLANS. MAINTAIN SLAB AND BEAM DEPTHS AS SHOWN.
PROVIDE 0MM PRECAMBER TO POST TENSIONED SLABS U.N.O. ON PLANS.
50MM COVER TO CONDUIT MINIMUM.

RC11 PROVIDE UPWARD CAMBER TO FORMWORK OF REINFORCED CONCRETE CANTILEVERS OF L/200 WHERE L IS THE PROJECTION BEYOND COLUMN OR WALL FACE, AND TO FORMWORK OF CONDUITS AND PIPES WHEN CAST IN SLABS OR WALLS ARE TO BE PLACED BETWEEN THE REINFORCEMENT LAYERS. WHERE THERE IS ONLY ONE LAYER OF REINFORCEMENT, PROVIDE

RC12 THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.

RC13 SLABS AND BEAMS SHALL BE CONSTRUCTED TO BEAR ONLY ON THE BEAMS, COLUMNS, WALLS ETC. SHOWN ON THE DRAWINGS. ALL OTHER BUILDING ELEMENTS SHALL BE KEPT 12MM MINIMUM CLEAR FROM SOFFITS OF STRUCTURE.

RC14 CURING OF ALL CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 3 DAYS, AND PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 7 DAYS FOLLOWED BY A GRADUAL DRYING OUT. APPROVED SPRAYED ON CURING COMPOUNDS THAT COMPLY WITH AS 3799 MAY BE USED WHERE FLOOR FINISHES WILL NOT BE AFFECTED. (REFER MANUFACTURERS SPECIFICATION). POLYTHENE SHEETING OR WET HESSIAN MAY BE USED TO RETAIN MOISTURE WHERE PROTECTED FROM WIND AND TRAFFIC.

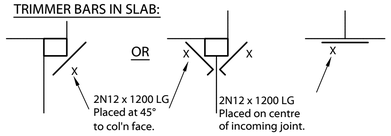
RC15 CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING. NO BRICKWORK OR PARTITION WALLS ARE TO BE CONSTRUCTED ON SUSPENDED LEVELS UNTIL ALL PROPPING IS REMOVED AND THE SLAB HAS ABSORBED ITS DEAD LOAD DEFLECTION.

1. NO EARTHWORKS SHALL BE CARRIED OUT DURING HIGH WINDS OR AS DIRECTED BY MID-COAST COUNCIL/ PROJECT MANAGER
2. DURING EARTHWORKS THE CONTRACTOR SHALL HAVE A WATER CART OR SIMILAR APPROVED ON SITE AND MUST PROGRESSIVELY WATER DOWN EXCAVATION AND FILL AREAS TO MINIMISE DUST.
3. ALL VEHICLE TRAVEL PATHS AND ROADS SHALL BE REGULARLY WATERED TO MINIMISE DUST AND DIRT ON ROAD SURFACES.

SLABS ON GRADE

SOG1 ALL RE-ENTRANT CORNERS AT PENETRATIONS FOR SUMPS, PITS, COLUMN BLOCKOUTS AND THE LIKE, TO HAVE N12 TRIMMER BARS PLACED AT 45 DEGREES TO CORNER OR IN EACH DIRECTION AT CORNERS UNLESS NOTED IN A DIFFERENT ARRANGEMENT ON PLAN.

TRIMMER BARS IN SLAB:



TRIMMER BARS TO BE TIED TO U/S OF SLAB MESH.

PROVIDE SUB-FLOOR DRAINAGE TO HYDRAULIC ENGINEERS DETAILS.

PRIOR TO PLACEMENT OF SLAB, SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 98% STANDARD COMPACTION IN ACCORDANCE WITH TEST 'E1.1' OF AS 1289 FOR THE TOP 300MM. ANY SOFT SPOTS SHALL BE REMOVED AND REPLACED WITH SITE WON MATERIAL TO THE ENGINEERS APPROVAL.

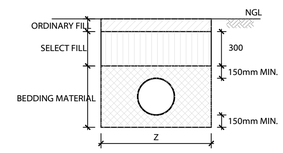
SOG2 ENSURE SLABS ARE CURED AS PER NOTE RC14.

SOG3 SAWJOINTS TO BE INSTALLED AS SHOWN WITHIN 12 HOURS OF POURING.

EARTHWORK NOTES

1. IF IN DOUBT, THEN ASK.
2. ALL WORKS IN ACCORDANCE TO AS 3798-2007 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL & RESIDENTIAL DEVELOPMENTS'.
3. MIN COMPACTION TO ALL FILLED AREAS TO BE 98% STD UNLESS NOTED OTHERWISE COMPACTION UNDER BUILDING PLATFORM TO BE 100% STD.
4. ALL CUT MATERIAL TO BE LAID IN ROW ON THE SITE FOR DRYING. THIS MATERIAL SHOULD BE INSPECTED AND ASSESSED BY THE GEOTECHNICAL ENGINEER TO DETERMINE IF THE MATERIAL IS SUITABLE FOR FILLING RE-LAID IN ACCORDANCE WITH AS 3798'
5. THE CONTRACTOR MUST ENSURE ADEQUATE TEMPORARY DRAINAGE DURING THE WORKS TO MINIMISE THE IMPACT OF WET WEATHER. SUCH METHODS AS THE INSTALLATION OF SUMP PITS, CROSS FALLS AND SEALING (COMPACTION) OF EXPOSED SURFACE FALLS PART OF THE EARTHWORKS CONTRACTOR RESPONSIBILITIES.
6. SEDIMENTATION AND EROSION CONTROL MUST BE PUT IN PLACE PRIOR TO CONSTRUCTION AND MAINTAINED THROUGHOUT THE WORKS.
7. ADOPTED BOXOUT DEPTHS ARE TABULATED BELOW.
8. FREQUENCY OF COMPACTION TESTING IN ACCORDANCE WITH AS 3798 TABLE & ASSOCIATED SPECIFICATION.
9. FINISHED SUB-GRADE SHOULD BE INSPECTED AND PROOF ROLLED IN THE PRESENCE OF A GEOTECHNICAL ENGINEER WITH ALL SIGNIFICANT DEFLECTION TO BE OVER EXCAVATED AND REPLACED WITH SUITABLE FILL TO A MINIMUM DEPTH OF 300MM. REPLACE WITH CLEAN FILL GREATER THAN CBR-25% AND COMPACT TO 98% STD.
10. FINAL BATTER TO BE NO STEEPER THAN 4 IN 1 (HORIZONTAL TO VERTICAL)

SUPPORT FOR PLASTIC & PVC PIPES

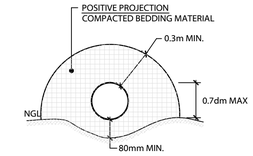


Z = dm + 0.2m OR 2dm WHICHEVER IS SMALLER
d = PIPE DIAMETER

- CONSTRUCTION TO BE IN ACCORDANCE WITH AS 2566.

DENSITY OF FILL MATERIAL	kg/m
SATURATED CLAY	2100
NORMAL CLAY	1900
SANDY CLAY	1800
CLAYEY SAND	1600
LOOSE GRANULAR MATERIAL	1500

- COMPACTION SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 150mm. FOR PIPES WITH DIAMETER < 250mm LAYER THICKNESS SHALL NOT EXCEED 80mm.



MINIMUM COVER

SITUATION	MIN DEPTH (METRES)
NOT SUBJECT TO VEHICLE LOADS	0.3
SUBJECT TO VEHICLE LOADS	
- NOT IN ROADWAYS	0.45
- IN SEALED ROADS	0.65
- UNDER UNSEALED ROADS	0.75
PIPES IN EMBANKMENT CONDITIONS OR SUBJECT TO CONSTRUCTION LOADS	0.75

SPECIFY BEDDING MATERIAL REFER TO CONCRETE PIPE NOTES.

COMPACTION

COHESIONLESS	60% *
COHESIVE	90% **

* DENSITY INDEX DETERMINED IN ACCORDANCE WITH AS 1289 E6.1
** DRY DENSITY RATIO DETERMINED IN ACCORDANCE WITH AS 1289 E4.1

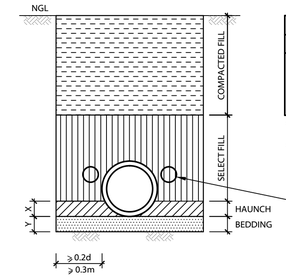
GRADING SPECIFICATION OF PIPE BACKFILL

BED & HAUNCH		SELECT	
SIEVE	WT PASSING %	SIEVE	WT PASSING %
19	100	19	100
2.36	100-50	9.50	100-50
0.60	90-20	2.36	100-30
0.30	60-10	0.60	50-15
0.15	25-0	0.075	25-0
0.075	10-0		

SUPPORT FOR CONCRETE PIPES

GRADING SPECIFICATION OF PIPE BACKFILL

BED & HAUNCH		SELECT	
SIEVE	WT PASSING %	SIEVE	WT PASSING %
19	100	19	100
2.36	100-50	9.50	100-50
0.60	90-20	2.36	100-30
0.30	60-10	0.60	50-15
0.15	25-0	0.075	25-0
0.075	10-0		



ZONE	COMPACTION
BED & HAUNCH	60% *
SIDE	COHESIONLESS 60% *
	COHESIVE 90% **

* DENSITY INDEX DETERMINED IN ACCORDANCE WITH AS 1289 E6.1
** DRY DENSITY RATIO DETERMINED IN ACCORDANCE WITH AS 1289 E4.1

X = 100 IF d <,1500 OR 150 IF > 1500.
Y = 0.3d

MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of Council's Notice of Determination

DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

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c/o GRAEME RAY
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ABN 82 153 018 800

GENERAL NOTES SHEET
1 OF 1

Scale
Horizontal:

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	10/01/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	DEC 19	19-027-C01	A

A1 SHEET

MAINTAIN EXISTING 2x3m GATE AT CURRENT LOCATION UNTIL DRIVEWAY IS COMPLETED

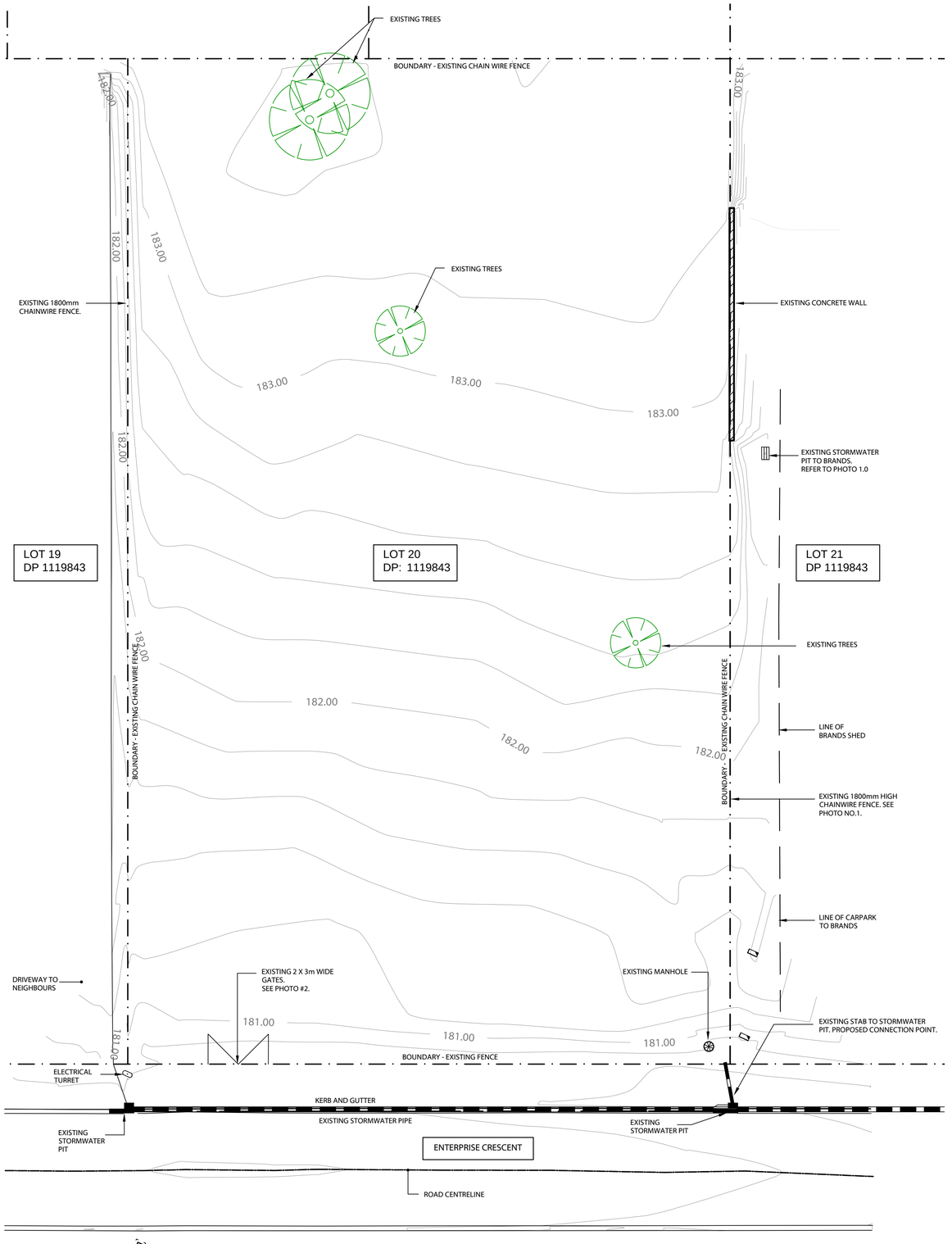

PHOTO 1.0 - Boundary Fence East and Stormwater Drainage to Brands

PHOTO 2.0 - Boundary Fence West and Front Gate

EXISTING SITE FEATURES

SCALE 1:250 (A1)
NOTE: NO VEHICULAR CROSSOVER TO LOT

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B	GENERAL AMENDMENTS	05/08/20	CH
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ABN 82 153 018 800

EXISTING SITE FEATURES

Scale
Horizontal:
0 2.5 5 7.5 10 12.5
SCALE 1:250 (A1)

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027-C02	B

A1 SHEET

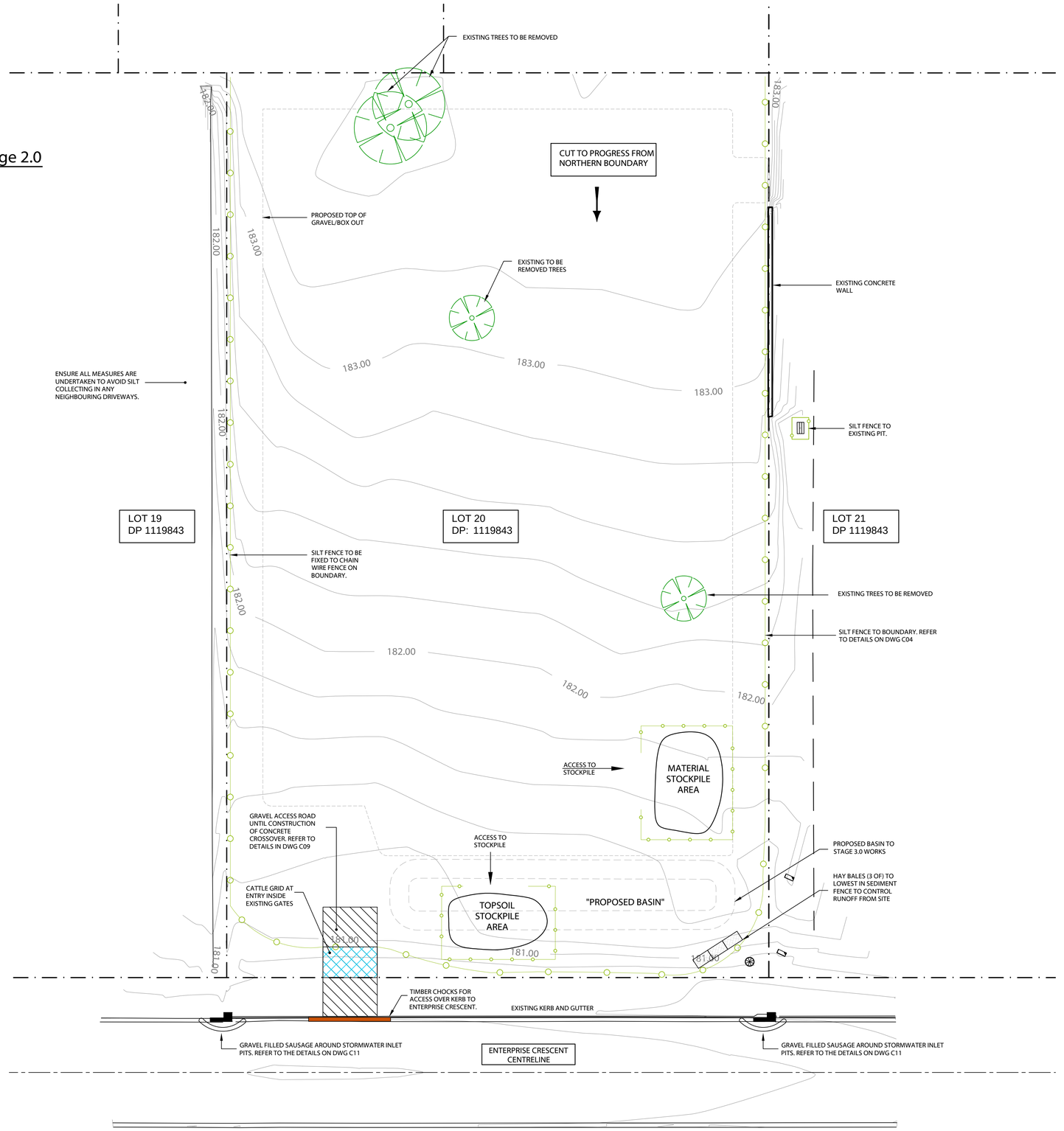
CONSTRUCTION PHASE - Stage 1.0 to Stage 2.0

SUGGESTED CONSTRUCTION PHASE TO INCLUDE

STAGE 1.0
a. CONSTRUCT TEMPORARY CROSSOVER WITH TIMBER BOARDS, KERB AT EXISTING ENTRY.
b. INSTALL TEMPORARY GRAVEL DRIVEWAY.
c. INSTALL CATTLE GRID AT ENTRY.
d. INSTALL SEDIMENTATION AND EROSION CONTROLS AS PER DRAWING.

STAGE 2.0
a. REMOVE TREES
b. CUT TOPSOIL TO STOCKPILE AS SHOWN ON C03.
c. CUT SITE TO FILL COMPACT IN 150mm LAYERS TO DETAILS. CUT TO COMMENCE AT NORTHERN END OF THE LOT.

MAINTAIN EXISTING 2x3m GATE AT CURRENT LOCATION UNTIL DRIVEWAY IS COMPLETED



LEGEND:

- DENOTES SILT FENCE. REFER TO DETAILS.
- DENOTES GRAVEL FILLED SOCKETS TO STORMWATER INLET PITS WITHIN ENTERPRISE CRESCENT.
- DENOTES TREES TO BE REMOVED

MUSWELLBROOK SHIRE COUNCIL
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DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

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ABN 82 153 018 800

SEDIMENTATION AND EROSION PLAN
STAGE 1.0 - 2.0 WORKS

Scale
Horizontal:
0 2.5 5 7.5 10 12.5
SCALE 1:250 (A1)

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	JP	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027-C03	C

A1 SHEET

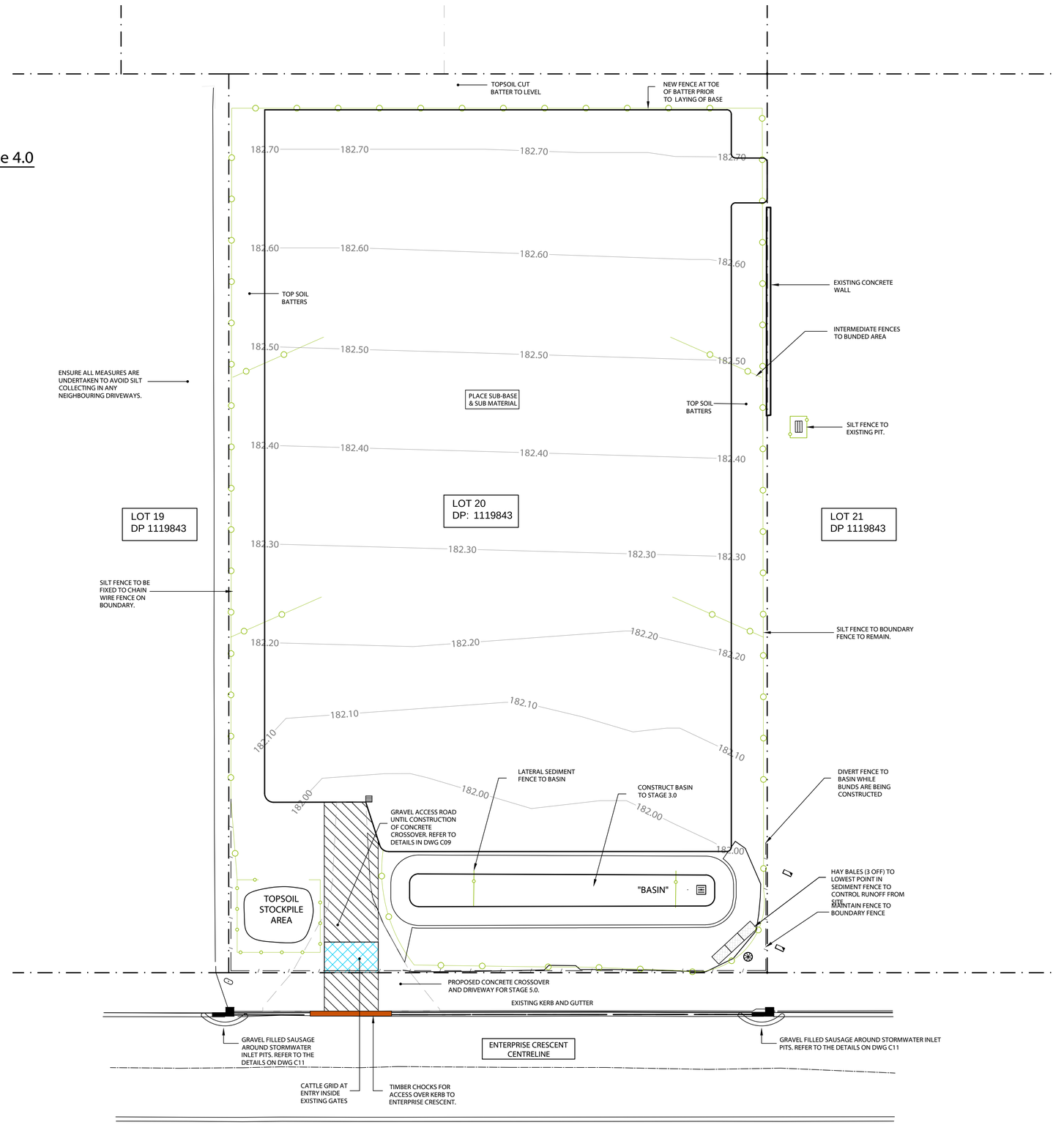
CONSTRUCTION PHASE - Stage 3.0 to Stage 4.0

SUGGESTED CONSTRUCTION PHASE TO INCLUDE

STAGE 3.0
a. REMOVE TOP SOIL FROM STOCKPILE AND PLACE ON BATTERS
b. RELOCATE TOP SOIL STOCKPILE AS SHOWN
c. LAY Ø225 OUTLET PIPE AND PIT AT BASIN
d. LAY Ø150 OUT PIPE, PIT AND TRENCH GRATE ACCESS DRIVEWAY.
e. CONSTRUCT DETENTION BASIN WITH SURPLUS CUT

STAGE 4.0
a. PLACE AND LAY SUB BASE AND BASE MATERIAL
b. INSTALL DRAINAGE PITS
c. CREATE BUNDS TO PERIMETER
d. REINSTATE SEDIMENTATION FENCES TO BASIN AS SHOWN

MAINTAIN EXISTING 2x3m GATE AT CURRENT LOCATION UNTIL DRIVEWAY IS COMPLETED



LEGEND:

: DENOTES SILT FENCE. REFER TO DETAILS.

: DENOTES GRAVEL FILLED SOCKETS TO STORMWATER INLET PITS WITHIN ENTERPRISE CRESCENT.

: CATTLE GRID

: TEMPORARY GRAVEL ACCESS FRIVEWAY

MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of Council's Notice of Determination

DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR APPROVAL.	05/08/20	CH

WILLFAB SUPERFUND
c/o GRAEME RAY
PO BOX 136
LAMBTON, NSW, 2099

PROPOSED HARDSTAND
38-40 ENTERPRISE CRESCENT
MUSWELLBROOK, NSW 2333

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SEDIMENTATION AND EROSION PLAN
STAGE 3.0 - 4.0 WORKS

Scale
Horizontal:
0 2.5 5 7.5 10 12.5
SCALE 1:250 (A1)

CIVIL DRAWING

Designed	BH
Drawn	CH
Datum	NIL
Date	JULY 20

Approved on behalf of RHM Consulting Engineers
05/08/20
Project Engineer/Director Date

Drawing No: 19-027-C03.1 Rev A

A1 SHEET

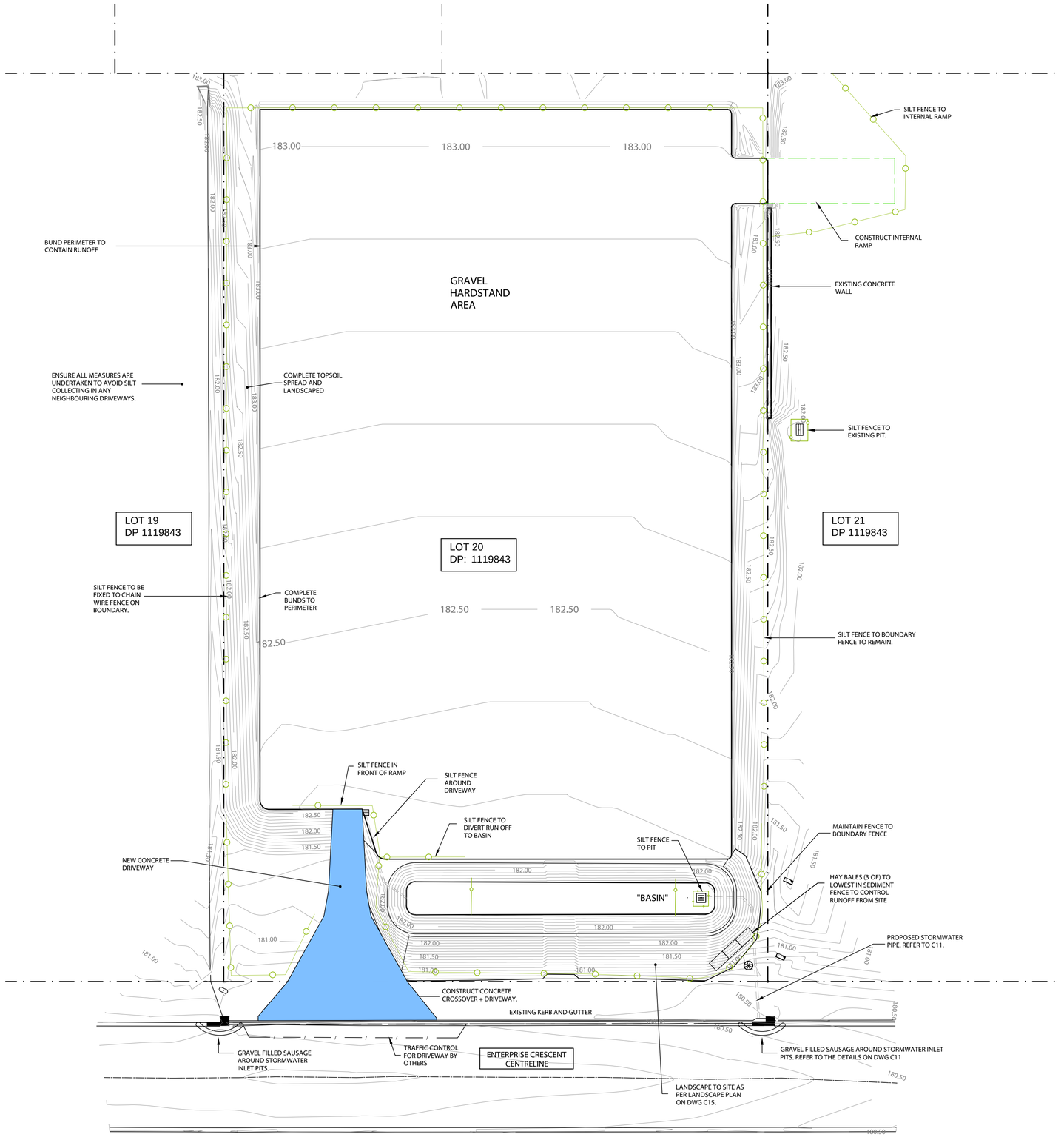
CONSTRUCTION PHASE - Stage 5.0

SUGGESTED CONSTRUCTION PHASE TO INCLUDE

STAGE 5.0
a. CONSTRUCT CONCRETE DRIVEWAY
b. CONSTRUCT CONCRETE CROSSOVER
c. SPREAD TOP SOIL TO DETENTION BATTERS
d. UNDERTAKE LANDSCAPING
e. CONSTRUCT INTERNAL RAMP

NOTE:

1. SEDIMENT FENCE TO REMAIN UNTIL LANDSCAPE IS ESTABLISHED



LEGEND:

: DENOTES SILT FENCE. REFER TO DETAILS.

: DENOTES GRAVEL FILLED SOCKETS TO STORMWATER INLET PITS WITHIN ENTERPRISE CRESCENT.

: DENOTES NEW DRIVEWAY SLAB

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR APPROVAL.	05/08/20	CH

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SEDIMENTATION AND EROSION PLAN
STAGE 5.0 WORKS

Scale
Horizontal:
0 2.5 5 7.5 10 12.5
SCALE 1:250 (A1)

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	
Drawn	CH		05/08/20
Datum	NIL	Project Engineer/Director	Date
Date	JULY 20	Drawing No: 19-027-C03.2	Rev A

A1 SHEET

GENERAL INSTRUCTIONS

1. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED AND RELATING TO DEVELOPMENT AT THE SUBJECT SITE.

2. THE SITE SUPERINTENDENT WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION.

3. ALL BUILDERS AND SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

CONSTRUCTION SEQUENCE

4. THE SOIL EROSION POTENTIAL ON THIS SITE IS TO BE MINIMISED.
HENCE WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE :-
(A) INSTALL SEDIMENT FENCES
(B) CONSTRUCT OPEN SWALES AND CHANNELS AS NECESSARY AND DIRECTED BY THE SITE SUPERINTENDENT.
(C) CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT.
(D) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
(E) UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS.
PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL

5. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

6. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

SEDIMENT CONTROL

7. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.

8. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.

9. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.

10. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

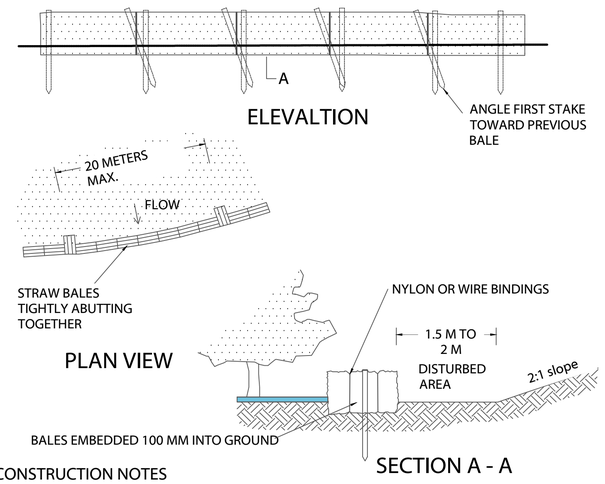
OTHER MATTERS

11. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.

12. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
(A) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE.
(B) ENSURING THAT NOTHING IS NAILED TO THEM.
(C) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS.
(I) ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICH EVER IS THE GREATER.
(II) A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH.
(III) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY AND NOT TO COMPACT THE SOIL AROUND THEM.

SITE INSPECTION & MAINTENANCE

13. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.



CONSTRUCTION NOTES

CONSTRUCT THE BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE.

1. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAP BETWEEN BALES. STREWS ARE TO BE PLACED PARALLEL TO GROUND.

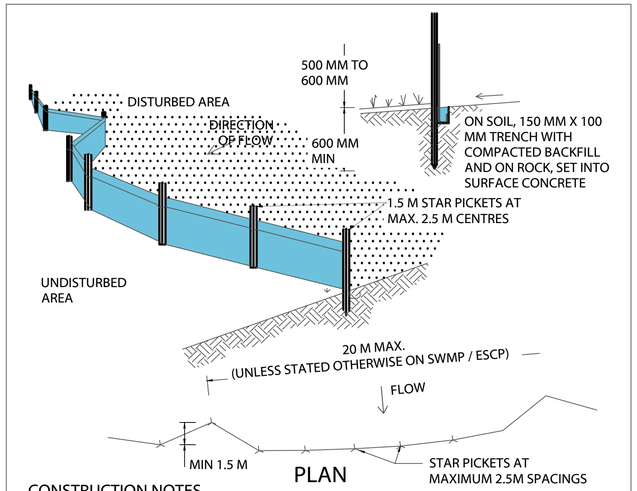
2. ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.

3. EMDED EACH BALE IN THE GROUND 75MM TO 100MM AND ANCHOR WITH TWO 1.2 METER STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE. DRIVE THEM 600MM INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.

4. WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE THE BALES ARE PLACED 1 TO 2 METERS DOWNSLOPE FROM THE TOE.

5. ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

STRAW BALE FILTER (TYPICAL)



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.

2. CUT A 150-MM DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE FABRIC TO BE ENTRENCHED.

3. DRIVE 1.5 METER LONG STAR PICKETS INTO GROUND AT 2.5 METER INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.

4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE TO THE WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.

5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150-MM OVERLAP.

6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE (TYPICAL)

SEDIMENTATION AND EROSION CONTROL

SE1. LAND DISTURBANCE SHALL BE LIMITED TO THAT NECESSARY FOR IMPLEMENTATION OF THE PLANS OF WORK AND LANDS NOT TO BE DISTURBED SHALL BE CLEARLY MARKED WITH BARRIER FENCES. SEDIMENT FENCING AND STRAW BALE FILTER SHALL BE PLACED AT REGULAR INTERVALS IMMEDIATELY DOWN SLOPE OF ALL UNPROTECTED DISTURBED LANDS

SE2. INSTALL SEDIMENT FENCING AND STRAW BALE FILTER IN ACCORDANCE WITH DETAILS ABOVE AND LOCAL COUNCIL REQUIREMENTS.

SE3. THE LOCATION OF "SILT" FENCES, SEDIMENT FENCES STRAW BALE FILTER AND OTHER DEVICES SHALL BE DETERMINED ON SITE IN CONJUNCTION WITH THE SUPERINTENDENT. VARIATIONS ARE PERMITTED TO BEST SUIT THE CIRCUMSTANCES

SE4. INSTALL TEMPORARY CONSTRUCTION VEHICLE EXIT IN ACCORDANCE WITH TYPICAL DETAILS

SE5. STRIP VEGETATION FROM ALL CUT AREAS AND DISPOSE OFF SITE

SE6. STRIP TOPSOIL FROM ALL CUT AREAS AND STOCKPILE ON SITE

SE7. EXCAVATE ALL CUT AREAS AND PLACE COMPACTED FILL WHERE REQUIRED.

SE8. ALL ADJACENT LANDSCAPE AREAS ARE TO BE STABILISED AND VEGETATED WITHIN 20 DAYS OF COMPLETION.

SE9. EXCAVATE, LAY AND BACKFILL DRAINAGE LINES. OPEN TRENCH LENGTHS ARE NOT TO EXCEED 25 METRES. WHERE TRENCHES ARE OPEN OVER NIGHT, PLACE TEMPORARY TURF LINED SWALE ALONG HIGHER SIDE OF TRENCH AND DIVERT POTENTIAL SURFACE WATER TO A SAFE LOCATION.

SE10. CONSTRUCT DRAINAGE PITS AND INSTALL PIT PROTECTION MEASURES IN ACCORDANCE WITH DETAILS ABOVE, LOCAL COUNCIL AND ROADS AND TRAFFIC AUTHORITY STANDARDS.

NOTE: WHEREVER SEDIMENT AND EROSION CONTROL DEVICES ARE REMOVED EARLIER IN THE CONSTRUCTION SEQUENCE THAN AS SPECIFIED ABOVE, ENSURE THAT THE DISTURBED GROUND IS RE-VEGETATED TO REDUCE THE LIKELIHOOD OF EROSION AND SEDIMENT TRANSPORT FROM THE SITE. ENSURE ALSO THAT SEDIMENT LADEN WATER CAN STILL REACH SEDIMENTATION BASINS FOR TREATMENT.

SEDIMENT RUN-OFF CONTROL

RC1 THE CONTRACTOR SHALL INSTALL AND MAINTAIN SOIL EROSION AND SEDIMENT CONTROL MEASURES GENERALLY IN ACCORDANCE WITH THE GUIDELINES OF THE N.S.W. DEPT. OF CONSERVATION AND LAND MANAGEMENT AS NECESSARY TO PREVENT RUN-OFF FROM SITE OF SEDIMENT RESULTING FROM THESE WORKS. SUCH MEASURES SHALL ALSO COMPLY WITH REQUIREMENTS OF COUNCIL.

RC2. GRADE FINISHED SURFACE TO SHED WATER EVENLY WITHOUT CHANNELING (UNTIL PIPED STORMWATER SYSTEM IS ADDED IN LATER STAGE).

MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of Council's Notice of Determination

DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR APPROVAL.	10/01/20	CH

WILLFAB SUPERFUND
c/o GRAEME RAY
PO BOX 136
LAMBTON, NSW, 2099

PROPOSED HARDSTAND
38-40 ENTERPRISE CRESCENT
MUSWELLBROOK, NSW 2333

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SEDIMENTAION AND EROSION CONTROL NOTES

Scale
Horizontal:
0 1 2 3 4 5
SCALE 1:100 (A1)

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	10/01/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	DEC 19	19-027-C04	A

A1 SHEET

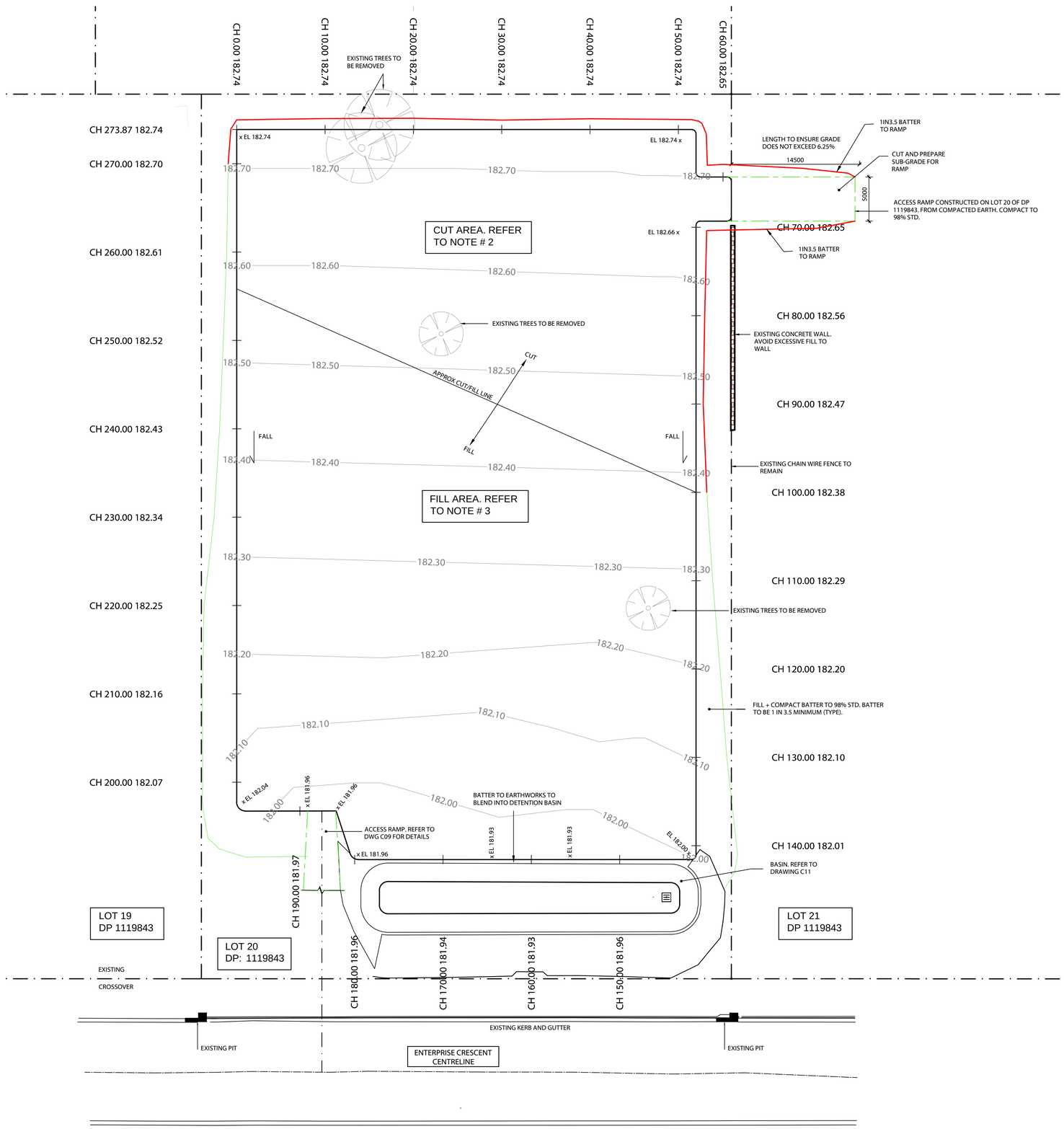
EARTHWORK NOTES:
1. LEVELS SHOW REFLECT BOXOUT LEVEL. REFER TO DRAWING C07 FOR HARDSTAND DETAILS.
2. FOR CUT AREA, SCARIFY EXISTING SUB-GRADE TO A DEPTH OF 100mm PROOF ROLL TO REMOVE SOFT SPOTS, MOISTURE CONDITIONS AND COMPACT TO 98% STD. REFER TO DRAWING C07.
3. FOR FILL AREAS, PLACE CUT IN 250mm LAYERS (LOOSE), MOISTURE CONDITION AND COMPACT TO 98% STD. REFER TO DRAWING C07. TOPSOIL TO BE REMOVED PRIOR WITH SUB-GRADE PREPARATION AS PER ITEM 2.0.
4. BATTERS TO BE 1 IN 3.5 UNLESS NOTED OTHERWISE.
5. VEGETATE BATTERS AS REQUIRED. REFER TO LANDSCAPE PLANS.

EARTHWORKS QUANTITIES

1. EXISTING SURFACE TO SUB-GRADE INCLUDES BATTER, BASIN AND ACCESS RAMP.
   CUT = 530m³
   FILL= 300m³
   (NO BULKING FACTORS)
2. SUB-GRADE TO TOP OF GRAVEL.
   IMPORTED GRAVEL MATERIAL = 1275m³
   (AREA = 4250m²)
   (NO BULKING FACTORS)

NOTE: QUANTITIES ARE ESTIMATES ONLY AND MAY VARY SLIGHTLY.

NOTE: BASED IN 1IN3.5 BATTENS



LEGEND:

- DENOTES TREES TO BE REMOVED
- 182.50 — DENOTES EARTHWORKS CONTOURS
- DENOTES PROPOSED INTERNAL ACCESS RAMP CHANGE IN GRADE 6.25%
- DENOTES APPROX EXTENT OF FILL BATTER. BATTER 1IN3.5
- DENOTES APPROX EXTENT OF CUT BATTER. BATTER 1IN3.5

MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of Council's Notice of Determination

DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

REV	DESCRIPTION	DATE	BY
C	GENERAL AMENDMENTS	31/07/20	CH
B	INCREASED HARDSTAND AREA	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	JP

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PROPOSED HARDSTAND
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PROPOSED EARTHWORKS PLAN

Scale
Horizontal:
0 2.5 5 7.5 10 12.5
SCALE 1:250 (A1)

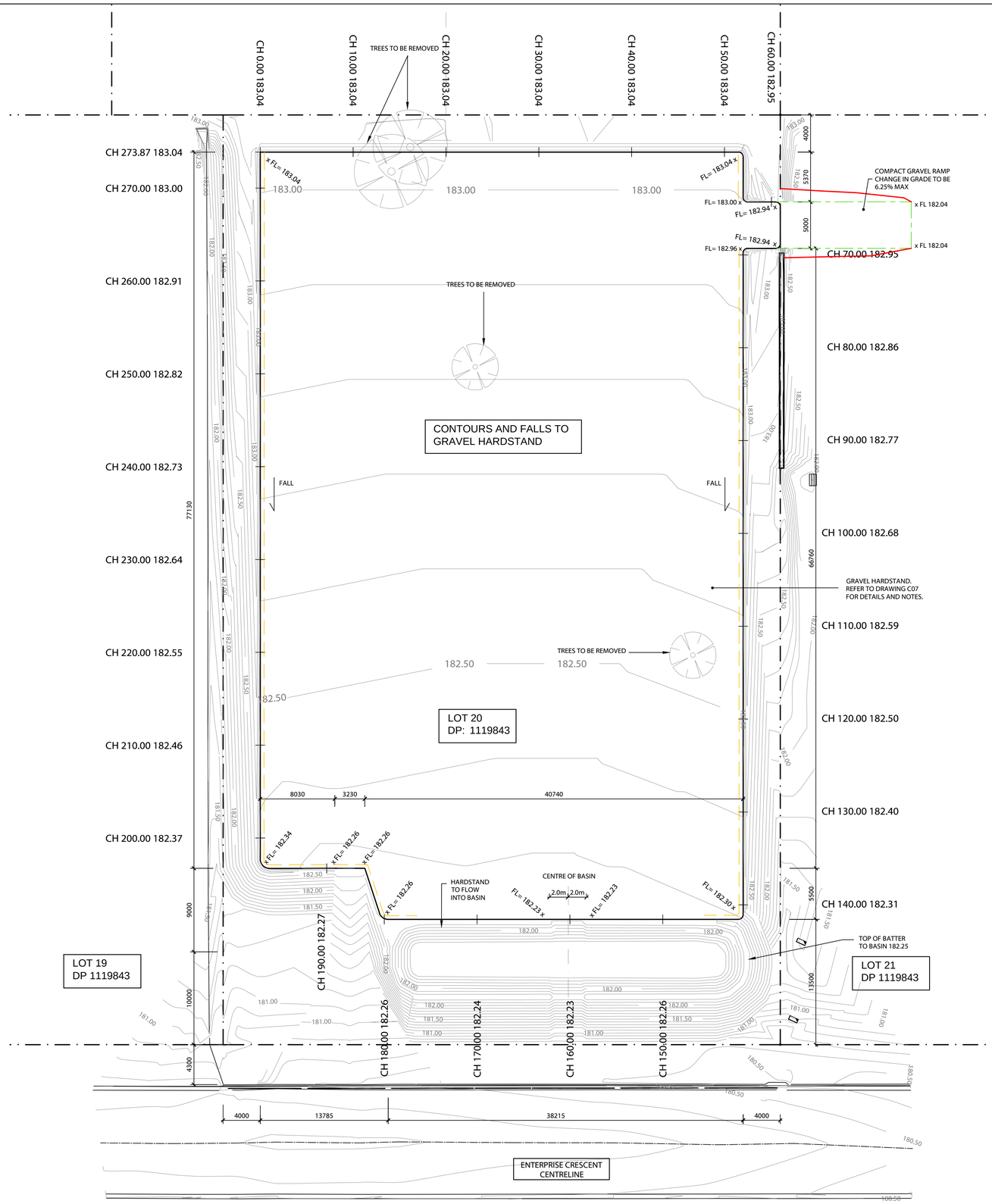
CIVIL DRAWING

Designed	BH
Drawn	CH
Datum	NIL
Date	JULY 20

Approved on behalf of RHM Consulting Engineers
31/07/20
Project Engineer/Director Date

Drawing No: 19-027-C05 Rev C

A1 SHEET



LEGEND:

DENOTES TREES TO BE REMOVED

182.50 DENOTES EARTHWORKS CONTOURS

DENOTES EXTENT OF BUND TO PERIMETER OF HARDSTAND. REFER OT C07

REFER TO BATTER SECTIONS ON C06.1 & C06.2

MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of
Council's Notice of Determination

DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

REV	DESCRIPTION	DATE	BY
D	GENERAL AMENDMENTS	05/08/20	CH
C	GENERAL AMENDMENTS	16/06/20	CH
B	INCREASED HARDSTAND AREA.	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	JP

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PROPOSED GRAVEL
PLAN AND LEVELS

Scale
Horizontal:
0 2.5 5 7.5 10 12.5
SCALE 1:250 (A1)

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	BC	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027-C06	D

A1 SHEET

NOTE: ROUND OFF
PERMANENT BUND

LEGEND

: DENOTES FINISH SURFACE LEVEL TO HARDSTAND

: DENOTES EXISTING SURFACE LEVEL

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Y=6424528.201
Z=183.04

Datum182

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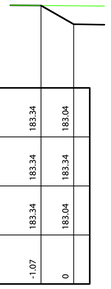

CHAINAGE 30.000

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Datum182

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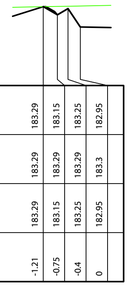

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Datum182

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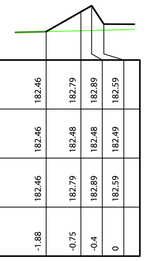

CHAINAGE 110.000

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Datum181

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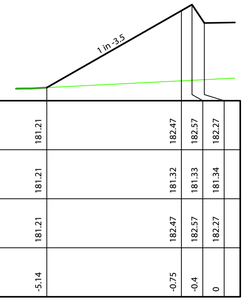

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Datum182

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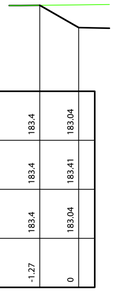
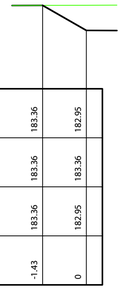


CHAINAGE 20.000

Centreline Data
X=300012.82
Y=6424533.721
Z=182.95

Datum182

DESIGN BASIN SURFACE	183.36	182.95
EXISTING SURFACE LEVEL	183.36	183.36
FINAL DESIGN SURFACES	183.36	182.95
OFFSET	-1.43	0

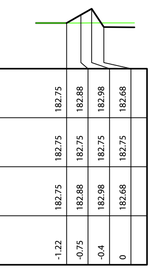


CHAINAGE 60.000

Centreline Data
X=300024.86
Y=6424499.981
Z=182.68

Datum182

DESIGN BASIN SURFACE	182.75	182.88	182.98	182.68
EXISTING SURFACE LEVEL	182.75	182.75	182.75	182.75
FINAL DESIGN SURFACES	182.75	182.88	182.98	182.68
OFFSET	-1.22	-0.75	-0.4	0

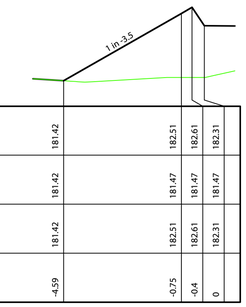


CHAINAGE 100.000

Centreline Data
X=300041.47
Y=6424463.592
Z=182.31

Datum181

DESIGN BASIN SURFACE	181.42	182.51	182.61	182.31
EXISTING SURFACE LEVEL	181.42	181.47	181.47	181.47
FINAL DESIGN SURFACES	181.42	182.51	182.61	182.31
OFFSET	-4.59	-0.75	-0.4	0

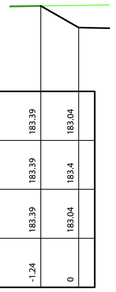


CHAINAGE 140.000

Centreline Data
X=299969.59
Y=6424519.897
Z=183.04

Datum182

DESIGN BASIN SURFACE	183.39	183.04	
EXISTING SURFACE LEVEL	183.39	183.4	
FINAL DESIGN SURFACES	183.39	183.04	
OFFSET	-1.24	0	

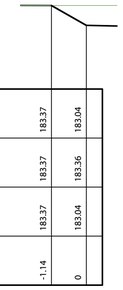


CHAINAGE 10.000

Centreline Data
X=300005.98
Y=6424536.506
Z=183.04

Datum182

DESIGN BASIN SURFACE	183.37	183.04	
EXISTING SURFACE LEVEL	183.37	183.36	
FINAL DESIGN SURFACES	183.37	183.04	
OFFSET	-1.14	0	

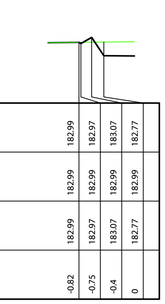


CHAINAGE 50.000

Centreline Data
X=300020.71
Y=6424509.078
Z=182.77

Datum182

DESIGN BASIN SURFACE	182.99	182.97	183.07	182.77
EXISTING SURFACE LEVEL	182.99	182.99	182.99	182.99
FINAL DESIGN SURFACES	182.99	182.97	183.07	182.77
OFFSET	-0.82	-0.75	-0.4	0

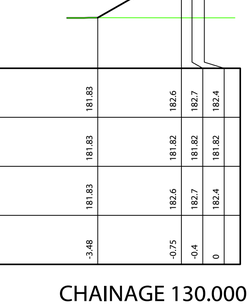


CHAINAGE 90.000

Centreline Data
X=300037.32
Y=6424472.689
Z=182.4

Datum181

DESIGN BASIN SURFACE	181.83	182.6	182.7	182.4
EXISTING SURFACE LEVEL	181.83	181.82	181.82	181.82
FINAL DESIGN SURFACES	181.83	182.6	182.7	182.4
OFFSET	-3.48	-0.75	-0.4	0

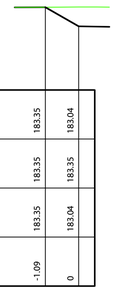


CHAINAGE 130.000

Centreline Data
X=299960.5
Y=6424515.745
Z=183.04

Datum182

DESIGN BASIN SURFACE	183.35	183.04
EXISTING SURFACE LEVEL	183.35	183.35
FINAL DESIGN SURFACES	183.35	183.04
OFFSET	-1.09	0

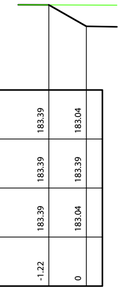


CHAINAGE 0.000

Centreline Data
X=299996.89
Y=6424532.354
Z=183.04

Datum182

DESIGN BASIN SURFACE	183.39	183.04
EXISTING SURFACE LEVEL	183.39	183.39
FINAL DESIGN SURFACES	183.39	183.04
OFFSET	-1.22	0

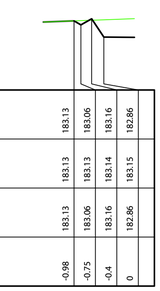


CHAINAGE 40.000

Centreline Data
X=300016.56
Y=6424518.175
Z=182.86

Datum182

DESIGN BASIN SURFACE	183.13	183.06	183.16	182.86
EXISTING SURFACE LEVEL	183.13	183.13	183.14	183.15
FINAL DESIGN SURFACES	183.13	183.06	183.16	182.86
OFFSET	-0.98	-0.75	-0.4	0

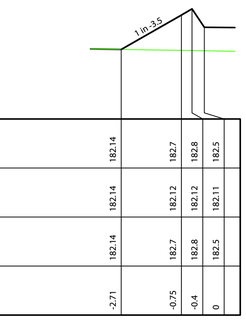


CHAINAGE 80.000

Centreline Data
X=300033.17
Y=6424481.786
Z=182.5

Datum181

DESIGN BASIN SURFACE	182.14	182.7	182.8	182.5
EXISTING SURFACE LEVEL	182.14	182.12	182.12	182.11
FINAL DESIGN SURFACES	182.14	182.7	182.8	182.5
OFFSET	-2.71	-0.75	-0.4	0



CHAINAGE 120.000

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR APPROVAL.	05/08/20	CH

WILLFAB SUPERFUND
c/o GRAEME RAY
PO BOX 136
LAMBTON, NSW, 2099

PROPOSED HARDSTAND
38-40 ENTERPRISE CRESCENT
MUSWELLBROOK, NSW 2333

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Email rhmce@rhmce.com.au
www.rhmce.com.au
ABN 82 153 018 800

HARDSTAND
CROSS SECTIONS
SHEET 1 OF 2

Scale
Horizontal: 0 1 2 3 4 5 SCALE 1:100 (A1)
Vertical: 0 0.5 1 1.5 2 2.5 SCALE 1:50 (A1)

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027-C06.1	A

A1 SHEET

NOTE: ROUND OFF
PERMANENT BUND

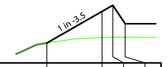
LEGEND

: DENOTES FINISH SURFACE LEVEL TO HARDSTAND

: DENOTES EXISTING SURFACE LEVEL

Centreline Data

X=299978.72
Y=6424475.831
Z=182.64



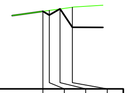
Datum182

DESIGN BASIN SURFACE	182.32		182.84	182.94	182.64
EXISTING SURFACE LEVEL	182.32		182.41	182.42	182.42
FINAL DESIGN SURFACES	182.32		182.84	182.94	182.64
OFFSET	-2.56		-0.75	-0.4	0

CHAINAGE 230.000

Centreline Data

X=299962.11
Y=6424512.22
Z=183



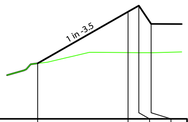
Datum182

DESIGN BASIN SURFACE	183.26		183.2	183.3	183
EXISTING SURFACE LEVEL	183.26		183.28	183.3	183.33
FINAL DESIGN SURFACES	183.26		183.2	183.3	183
OFFSET	-0.96		-0.75	-0.4	0

CHAINAGE 270.000

Centreline Data

X=299982.87
Y=6424466.734
Z=182.55



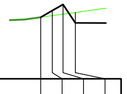
Datum181

DESIGN BASIN SURFACE	181.91		182.75	182.85	182.55
EXISTING SURFACE LEVEL	181.91		182.08	182.08	182.08
FINAL DESIGN SURFACES	181.91		182.75	182.85	182.55
OFFSET	-3.7		-0.75	-0.4	0

CHAINAGE 220.000

Centreline Data

X=299966.26
Y=6424503.123
Z=182.91



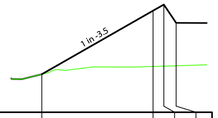
Datum182

DESIGN BASIN SURFACE	183		183.11	183.21	182.91
EXISTING SURFACE LEVEL	183		183.03	183.06	183.08
FINAL DESIGN SURFACES	183		183.11	183.21	182.91
OFFSET	-1.13		-0.75	-0.4	0

CHAINAGE 260.000

Centreline Data

X=299987.02
Y=6424457.637
Z=182.46



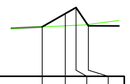
Datum181

DESIGN BASIN SURFACE	181.62		182.66	182.76	182.46
EXISTING SURFACE LEVEL	181.62		181.75	181.75	181.76
FINAL DESIGN SURFACES	181.62		182.66	182.76	182.46
OFFSET	-4.38		-0.75	-0.4	0

CHAINAGE 210.000

Centreline Data

X=299970.41
Y=6424494.025
Z=182.82



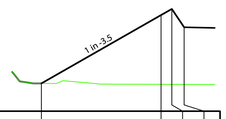
Datum182

DESIGN BASIN SURFACE	182.81		183.02	183.12	182.82
EXISTING SURFACE LEVEL	182.81		182.82	182.83	182.85
FINAL DESIGN SURFACES	182.81		183.02	183.12	182.82
OFFSET	-1.51		-0.75	-0.4	0

CHAINAGE 250.000

Centreline Data

X=299991.17
Y=6424448.539
Z=182.37



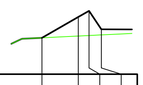
Datum181

DESIGN BASIN SURFACE	181.45		182.57	182.67	182.37
EXISTING SURFACE LEVEL	181.45		181.44	181.44	181.44
FINAL DESIGN SURFACES	181.45		182.57	182.67	182.37
OFFSET	-4.66		-0.75	-0.4	0

CHAINAGE 200.000

Centreline Data

X=299974.56
Y=6424484.928
Z=182.73



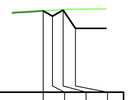
Datum182

DESIGN BASIN SURFACE	182.59		182.93	183.03	182.73
EXISTING SURFACE LEVEL	182.59		182.62	182.63	182.64
FINAL DESIGN SURFACES	182.59		182.93	183.03	182.73
OFFSET	-1.94		-0.75	-0.4	0

CHAINAGE 240.000

Centreline Data

X=299960.5
Y=6424515.744
Z=183.04



Datum182

DESIGN BASIN SURFACE	183.33		183.24	183.34	183.04
EXISTING SURFACE LEVEL	183.33		183.34	183.35	183.35
FINAL DESIGN SURFACES	183.33		183.24	183.34	183.04
OFFSET	-1.05		-0.75	-0.4	0

CHAINAGE 273.874

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR APPROVAL.	05/08/20	CH

WILLFAB SUPERFUND
c/o GRAEME RAY
PO BOX 136
LAMBTON, NSW, 2099

PROPOSED HARDSTAND
38-40 ENTERPRISE CRESCENT
MUSWELLBROOK, NSW 2333

RHM Consulting Engineers
Civil & Structural Consulting Engineers
109 Susan street, Scone NSW
Tel (02) 6545 2800
Email rhmce@rhmce.com.au www.rhmce.com.au
ABN 82 153 018 800

HARDSTAND
CROSS SECTIONS
SHEET 2 OF 2

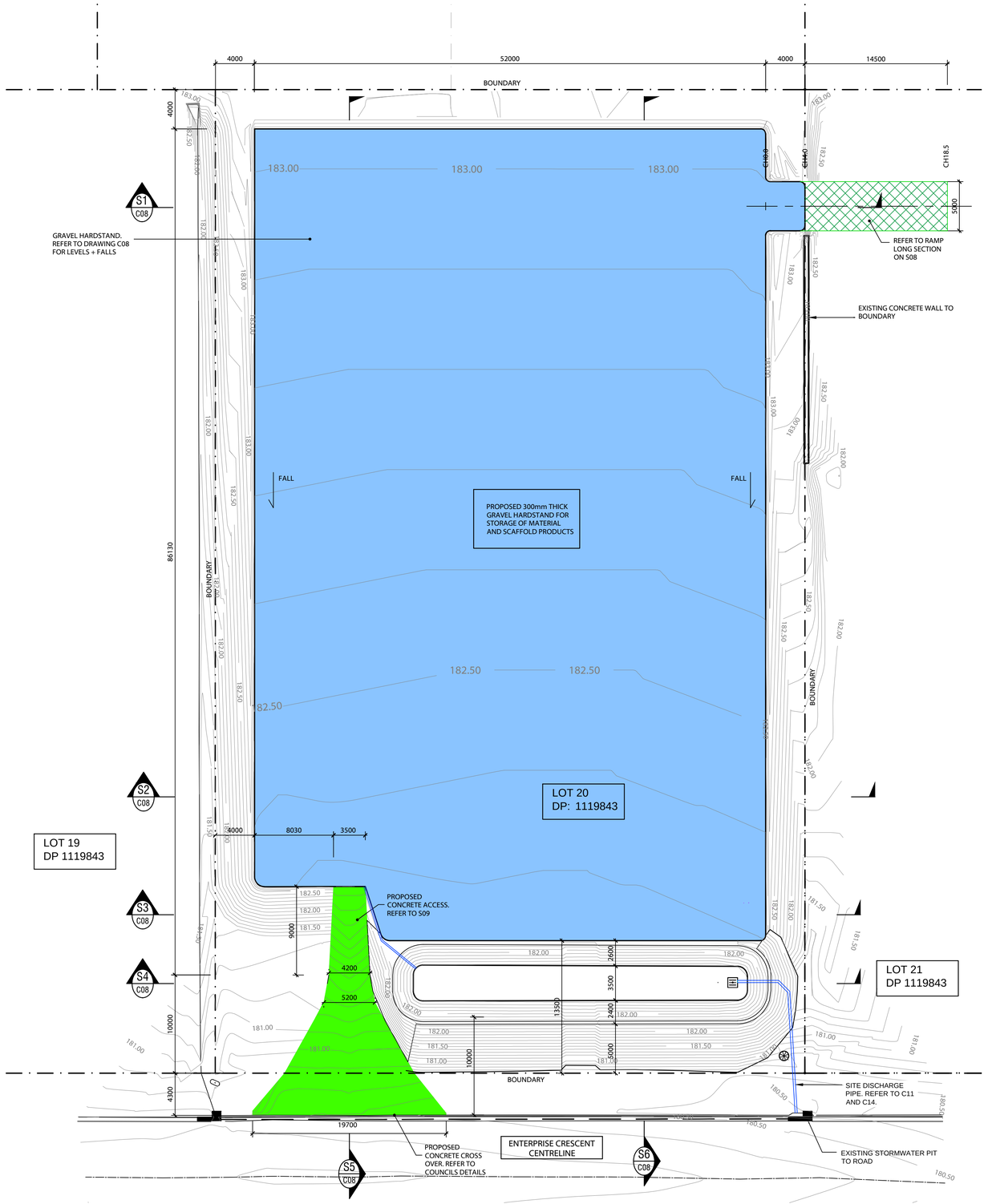
Scale
Horizontal:
0 1 2 3 4 5
SCALE 1:100 (A1)
Vertical:
0 0.5 1 1.5 2 2.5
SCALE 1:50 (A1)

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027-C06.2	A

A1 SHEET

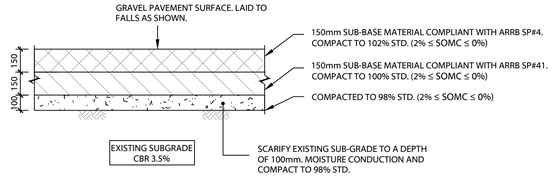
NOTES:
1. ASSUMED CBR = 3.5% (SOAKED). CBR STRENGTH TO BE DETERMINED ON SITE.
2. SUB-BASE MATERIAL AS NOTED TO HAVE AS A MINIMUM:
   - GRADING: IN ACCORDANCE WITH ARRB SPECIAL REPORT #41
   - CBR STRENGTH: GREATER THAN 40% (SOAKED)
   - STONE SIZE = 20mm
   - PI LESS THEN 12%
3. DESIGNED ESA's 1.42 x 10^4 ESA's OVER A 5 YEAR DESIGN LIFE
4. SUB - GRADE PREPARATION WORKS TO INCLUDE:
   - REMOVE TOPSOIL AND BUND TO FRONTAGE AS SHOWN
   - REMOVE ANY ORGANIC MATTER AND TREE ROOTS WHERE APPLICABLE
   - PROOF ROLL SUB - GRADE TO ENSURE NO UNSUITABLE OR SOFT MATERIAL EXISTS. IF SO, REMOVE AND REPLACE WITH CLEAN APPROVED FILL
   - SCARIFY TO A DEPTH OF 150mm, MOISTURE CONDITION AND COMPACT TO 98% STD



GENERAL HARDSTAND
SCALE 1:250 (A1)

LEGEND:

- GENERAL HARDSTAND AREA: PAVEMENT BASED ON SUB-GRADE STRENGTH OF CBR=3.5%. TOTAL PAVEMENT THICKNESS 300mm. REFER TO DETAILS BELOW
- MAIN ENTRY TO SITE: CONCRETE THICKNESS BASED ON SUB-GRADE STRENGTH OF CBR = 3.5%. TOTAL PAVEMENT THICKNESS 170mm. REFER TO DETAILS ON C09. MAXIMUM GRADIENT OF PAVEMENT TO ENTRY 6.25%.
- PROPOSED ACCESS RAMP TO LOT 20 OF DP 1119843

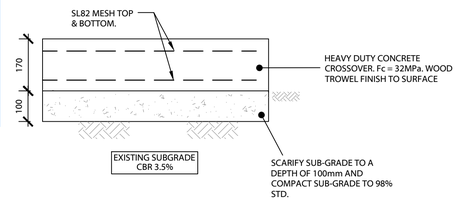


GENERAL HARDSTAND
SCALE 1:20 (A1)

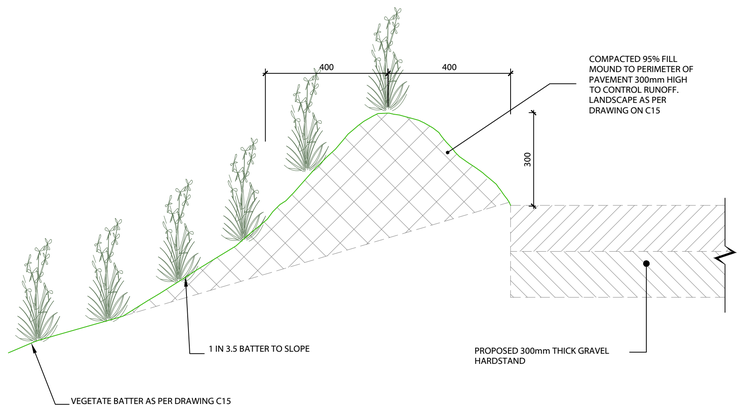
MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of Council's Notice of Determination

DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS



CONCRETE DRIVEWAY DETAILS
SCALE 1:10 (A1)
NOTE: IF THE EXISTING SUB-GRADE IS NOT SMOOTH, LEVEL WITH SAND.



BOUNDING TREATMENT TO PERIMETER
SCALE 1:10 (A1)

REV	DESCRIPTION	DATE	BY
D	GENERAL AMENDMENTS	05/08/20	CH
C	GENERAL AMENDMENTS	16/06/20	CH
B	INCREASED HARDSTAND AREA.	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	JP

WILLFAB SUPERFUND
c/o GRAEME RAY
PO BOX 136
LAMBTON, NSW, 2099

PROPOSED HARDSTAND
38-40 ENTERPRISE CRESCENT
MUSWELLBROOK, NSW 2333

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Civil & Structural Consulting Engineers
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Tel (02) 6545 2800
Email rhmce@rhmce.com.au
www.rhmce.com.au
ABN 82 153 018 800

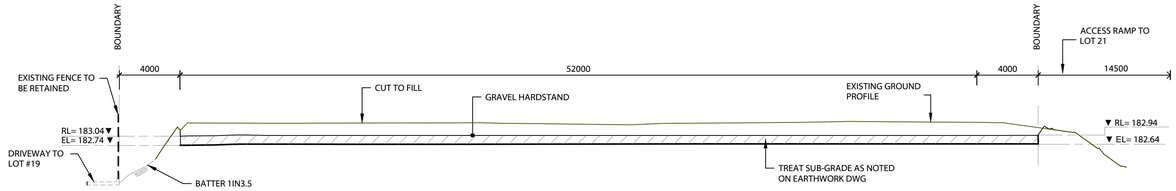
PROPOSED HARDSTAND PLAN

Scale
Horizontal:
0 2.5 5 7.5 10 12.5
SCALE 1:250 (A1)

CIVIL DRAWING

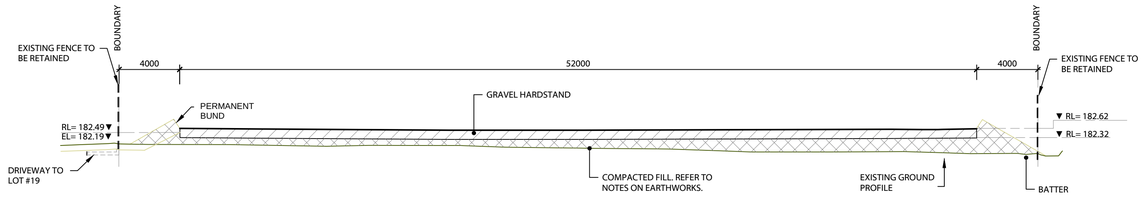
Designed	BH	Approved on behalf of RHM Consulting Engineers 05/08/20
Drawn	CH	Project Engineer/Director Date
Datum	NIL	Drawing No: 19-027-C07 Rev D
Date	JULY 20	

A1 SHEET



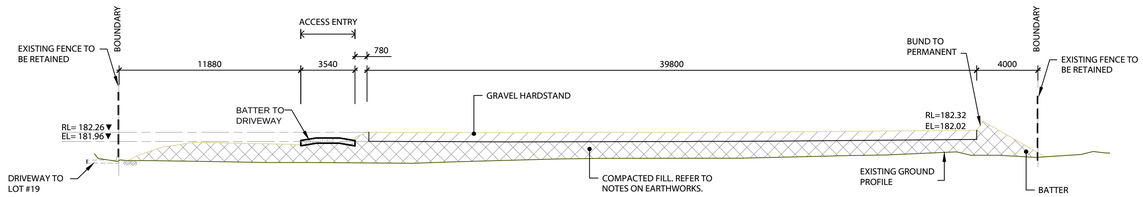
SECTION S1 - HARDSTAND AREA

SCALE:
HORIZONTAL 1:200 (A1)
VERTICAL1:100 (A1)



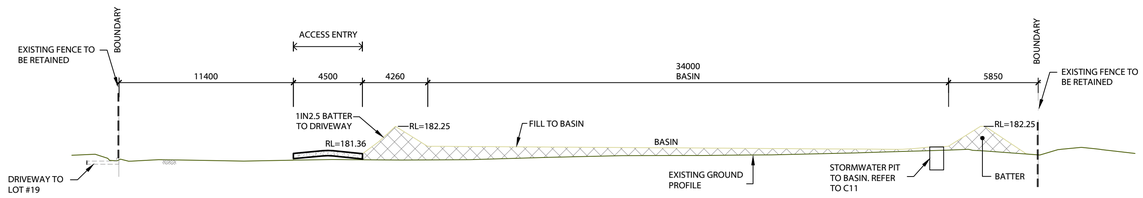
SECTION S2 - HARDSTAND AREA

SCALE:
HORIZONTAL 1:200 (A1)
VERTICAL1:100 (A1)



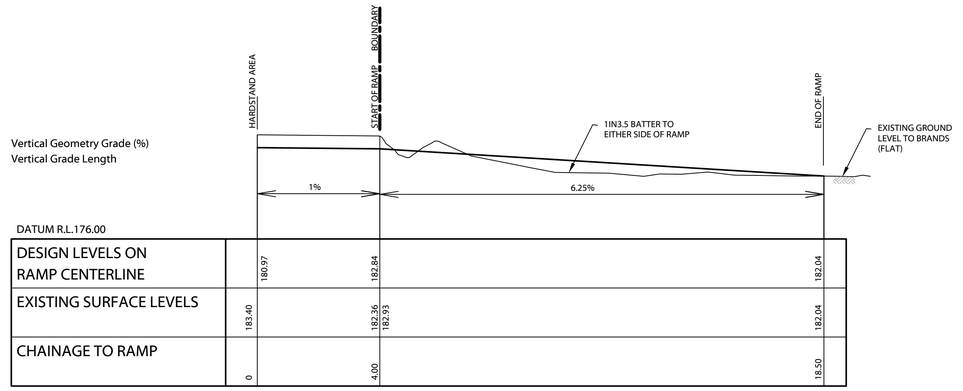
SECTION S3 - HARDSTAND AREA

SCALE:
HORIZONTAL 1:200 (A1)
VERTICAL1:100 (A1)



SECTION S4 - HARDSTAND AREA

SCALE:
HORIZONTAL 1:200 (A1)
VERTICAL1:100 (A1)



Vertical Geometry Grade (%)
Vertical Grade Length

DATUM R.L.176.00

DESIGN LEVELS ON RAMP CENTERLINE		180.97	182.84	182.04
EXISTING SURFACE LEVELS	183.40	182.36	182.93	182.04
CHAINAGE TO RAMP	0	4.00		18.50

REV	DESCRIPTION	DATE	BY
D	ISSUED FOR APPROVAL.	05/08/20	CH
C	GENERAL AMENDMENTS	16/06/20	CH
C	INCREASED HARDSTAND AREA	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	CH

WILLFAB SUPERFUND
c/o GRAEME RAY
PO BOX 136
LAMBTON, NSW, 2099

PROPOSED HARDSTAND
38-40 ENTERPRISE CRESCENT
MUSWELLBROOK, NSW 2333

RHM Consulting Engineers
Civil & Structural Consulting Engineers
109 Susan street, Scone NSW
Tel (02) 6545 2800
Email rhmce@rhmce.com.au
www.rhmce.com.au
ABN 82 153 018 800

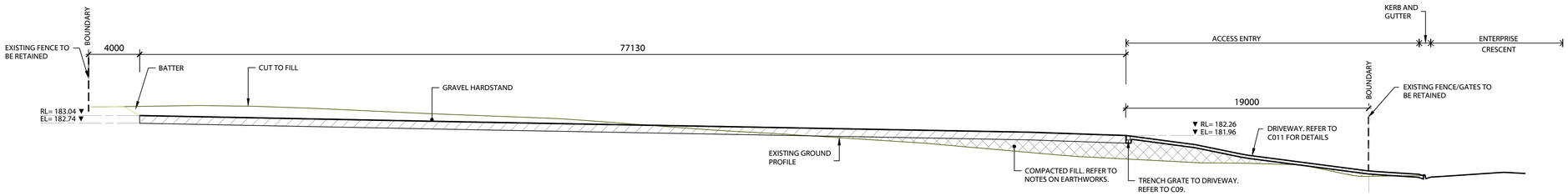
TYPICAL SECTIONS
SHEET 2

Scale
Horizontal:
0 2 4 6 8 10
SCALE 1:200 (A1)

CIVIL DRAWING

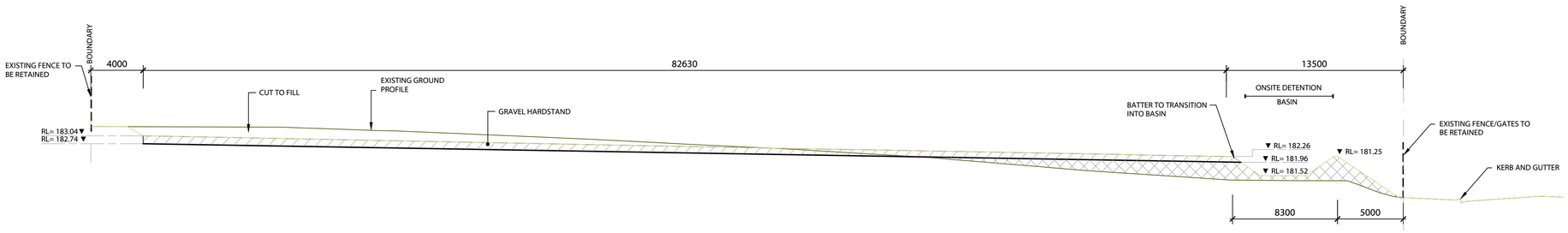
Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027- C08	A

A1 SHEET



SECTION S5 - HARDSTAND AREA

SCALE:
HORIZONTAL 1:200 (A1)
VERTICAL1:100 (A1)



SECTION S6 - HARDSTAND AREA

SCALE:
HORIZONTAL 1:200 (A1)
VERTICAL1:100 (A1)

REV	DESCRIPTION	DATE	BY	REV	DESCRIPTION	DATE	BY
A	ISSUED FOR APPROVAL.	05/08/20	CH				

WILLFAB SUPERFUND
c/o GRAEME RAY
PO BOX 136
LAMBTON, NSW, 2099

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ABN 82 153 018 800

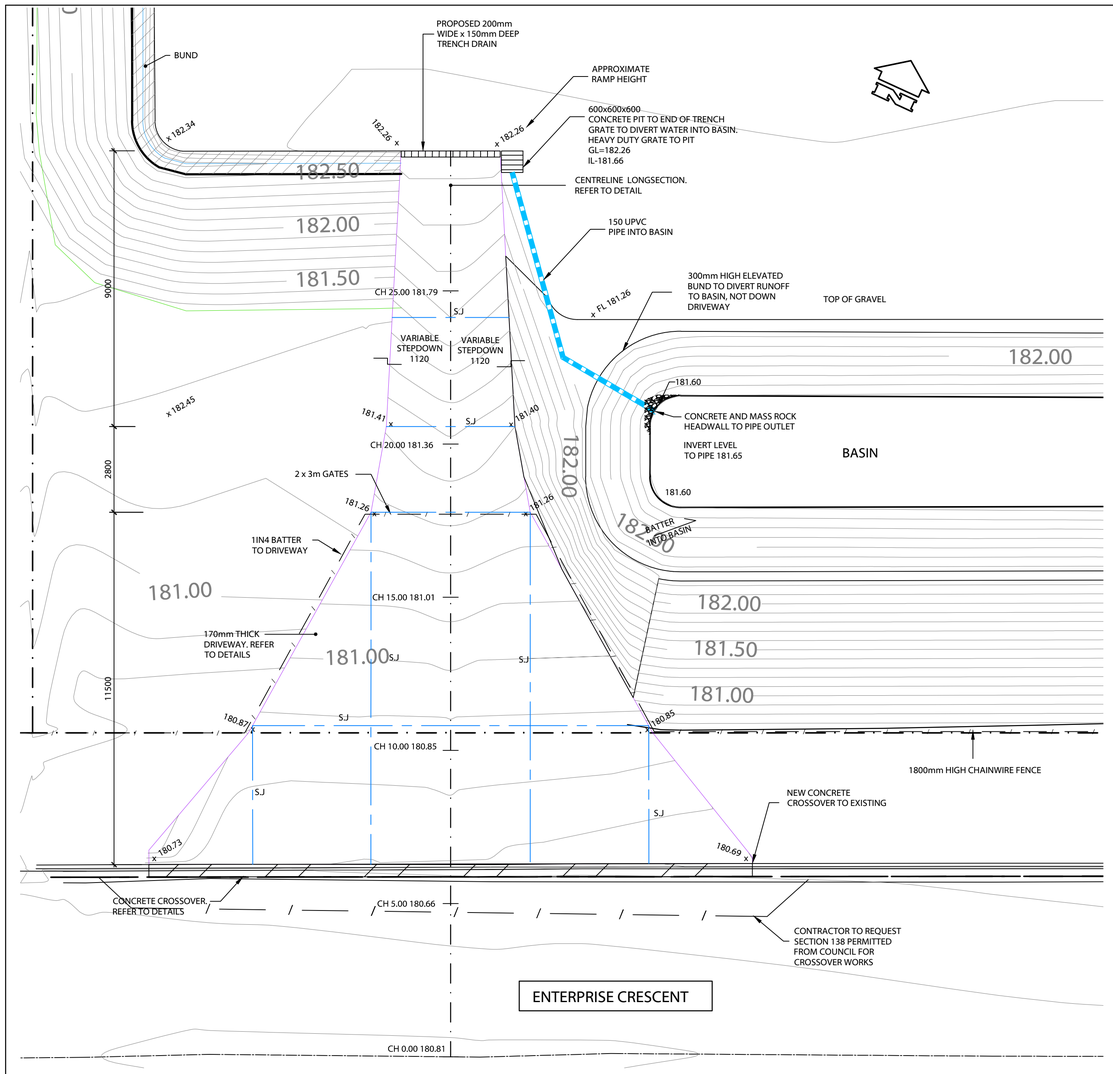
TYPICAL SECTIONS
SHEET 2

Scale
Horizontal:
0 2 4 6 8 10
SCALE 1:200 (A1)

CIVIL DRAWING

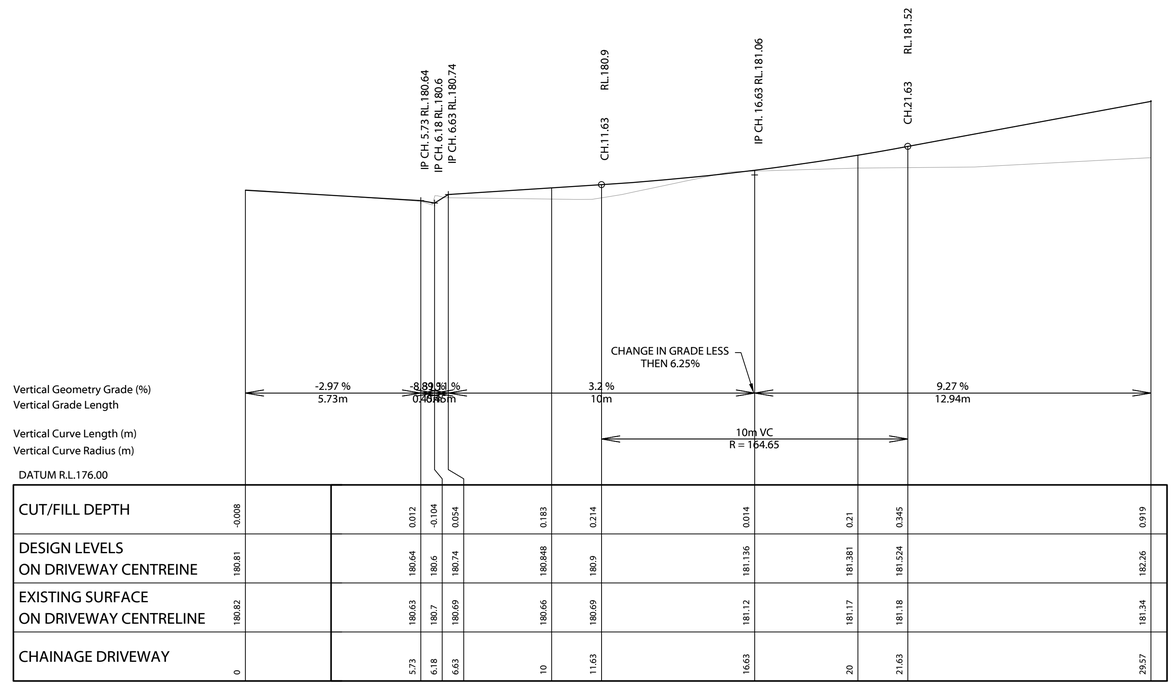
Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027- C08.1	A

A1 SHEET



ACCESS ENTRY PATH

SCALE 1:100 (A1)



CUT/FILL DEPTH	-0.008			0.012	-0.104	0.054		0.183	0.214		0.014	0.21	0.345		0.919								
DESIGN LEVELS ON DRIVEWAY CENTREINE	180.81			180.64	180.6	180.74		180.848	180.9		181.136	181.381	181.524		182.26								
EXISTING SURFACE ON DRIVEWAY CENTRELINE	180.82			180.63	180.7	180.69		180.66	180.69		181.12	181.17	181.18		181.34								
CHAINAGE DRIVEWAY	0			5.73	6.18	6.63		10	11.63		16.63	20	21.63		29.57								

LONGSECTION CENTRELINE OF DRIVEWAY

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of Council's Notice of Determination

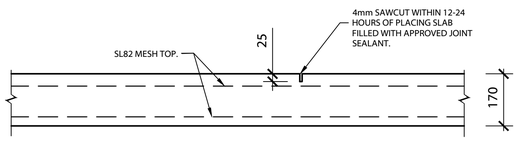
DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

LEGEND:

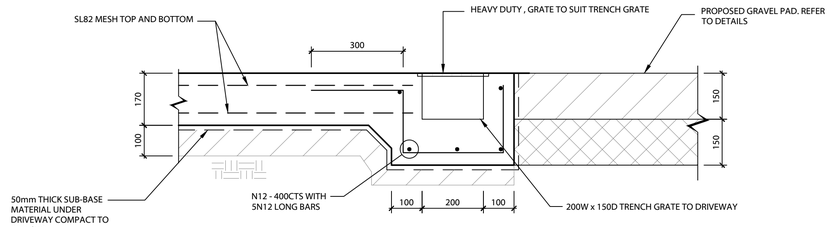
- DENOTES 300mm HIGH x 800mm WIDE GRAVEL BUND TO AREA OF GRAVEL HARDSTAND TO DIVERT RUNOFF AWAY FROM DRIVEWAY

- DENOTES SAW CUT JOINTS. REFER TO DETAILS



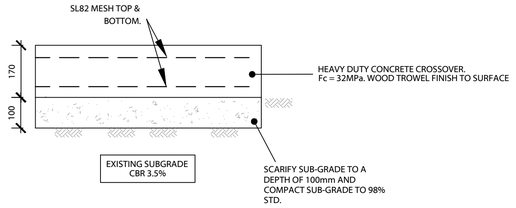
SAWCUT JOINT DETAIL

SCALE 1:10 (A1)



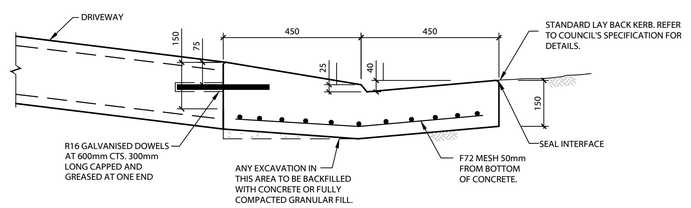
DETAIL A - TRENCH GRATE TO DRIVEWAY DETAIL

SCALE 1:10 (A1)



CONCRETE DRIVEWAY DETAILS

SCALE 1:10 (A1)
NOTE: IF THE EXISTING SUB-GRADE IS NOT SMOOTH, LEVEL WITH SAND.



TYPICAL CROSSOVER DETAIL

SCALE 1:10 (A1)

- CONCRETE STRENGTH TO BE 32MPa AT 28 DAYS.

REV	DESCRIPTION	DATE	BY
D	GENERAL AMENDMENTS	05/08/20	JP
C	GENERAL AMENDMENTS	16/06/20	CH
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A	ISSUED FOR APPROVAL.	10/01/20	CH

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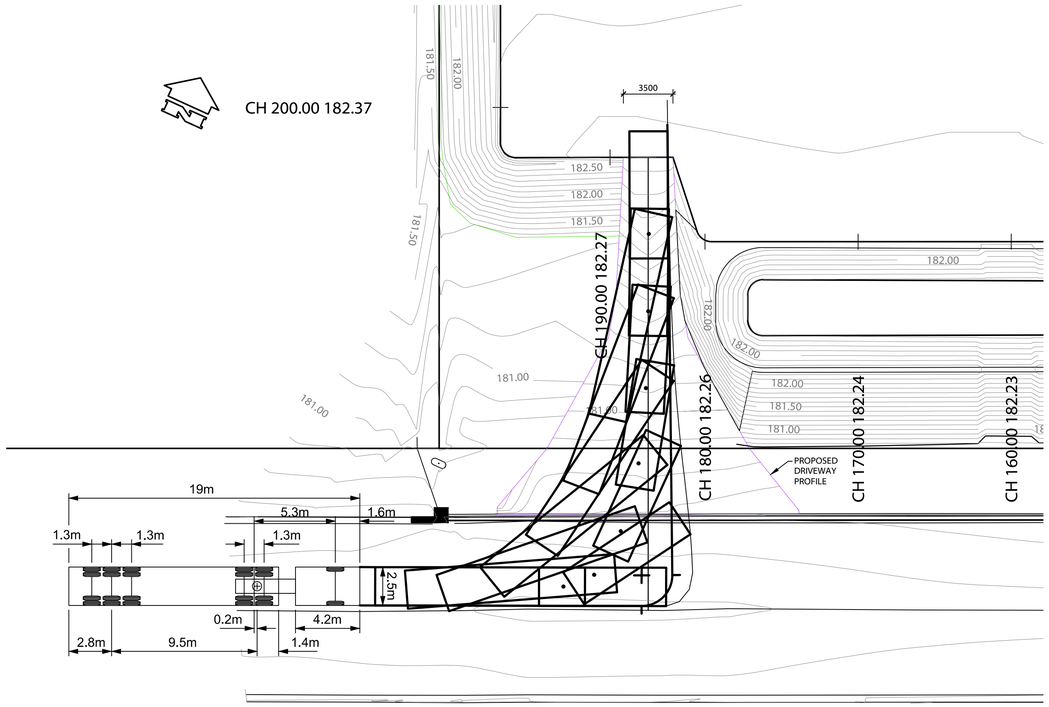
DRIVEWAY PLAN AND LONGSECTION

Scale
Horizontal:
0 1 2 3 4 5
SCALE 1:100 (A1)

CIVIL DRAWING

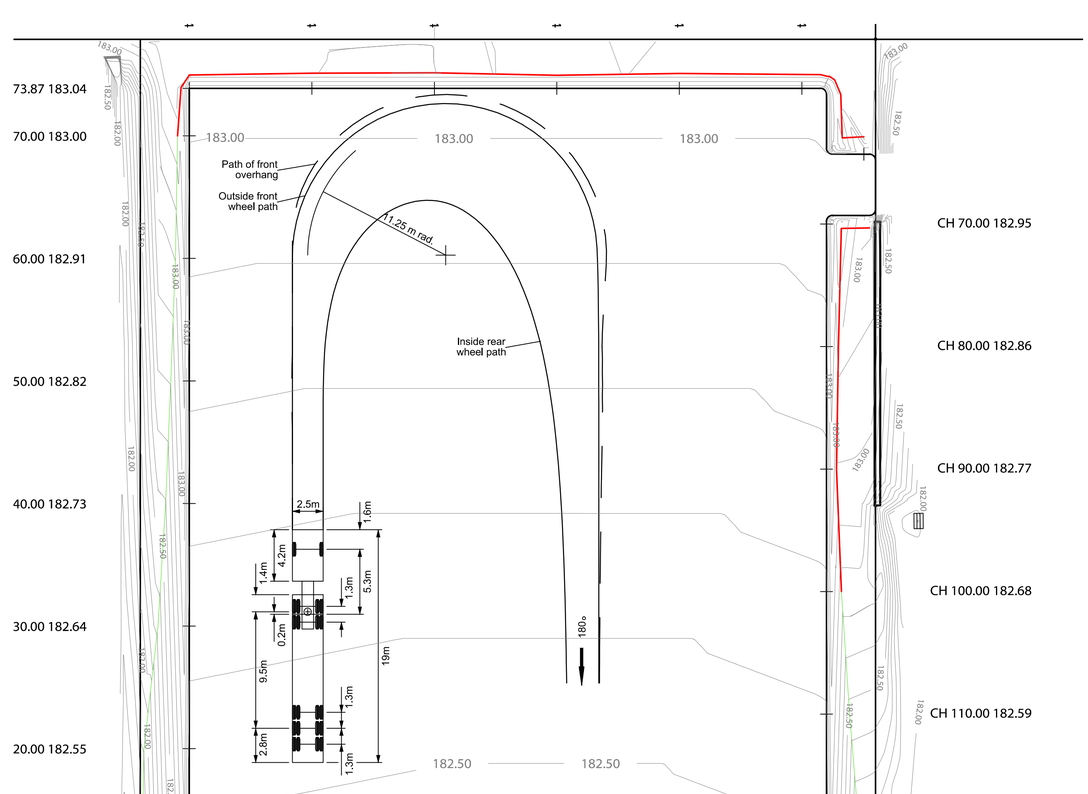
Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	JP	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JUNE 20	19-027-C09	D

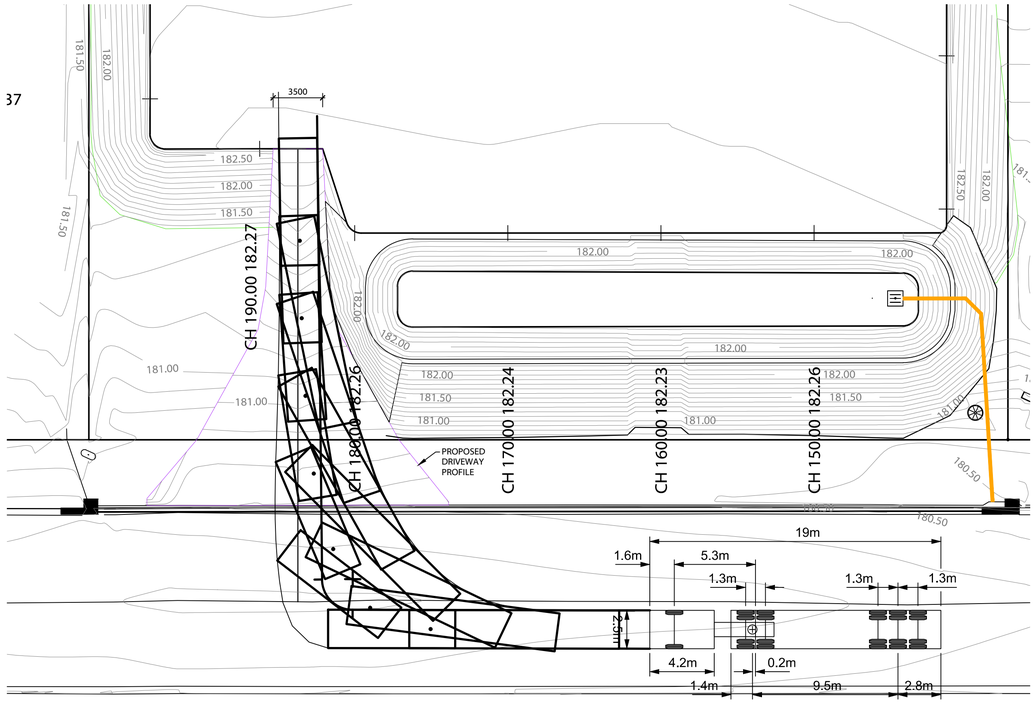
A1 SHEET



TURNING TEMPLATE - LEFT IN

SCALE: 1:200 (A1)





TURNING TEMPLATE - RIGHT IN

SCALE: 1:200 (A1)

MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of Council's Notice of Determination

DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

TURNING TEMPLATE - U-TURN

SCALE: 1:250 (A1)

REV	DESCRIPTION	DATE	BY
B	INCREASE HARDSTAND AREA	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	CH

WILLFAB SUPERFUND
c/o GRAEME RAY
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LAMBTON, NSW, 2099

PROPOSED HARDSTAND
38-40 ENTERPRISE CRESCENT
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ABN 82 153 018 800

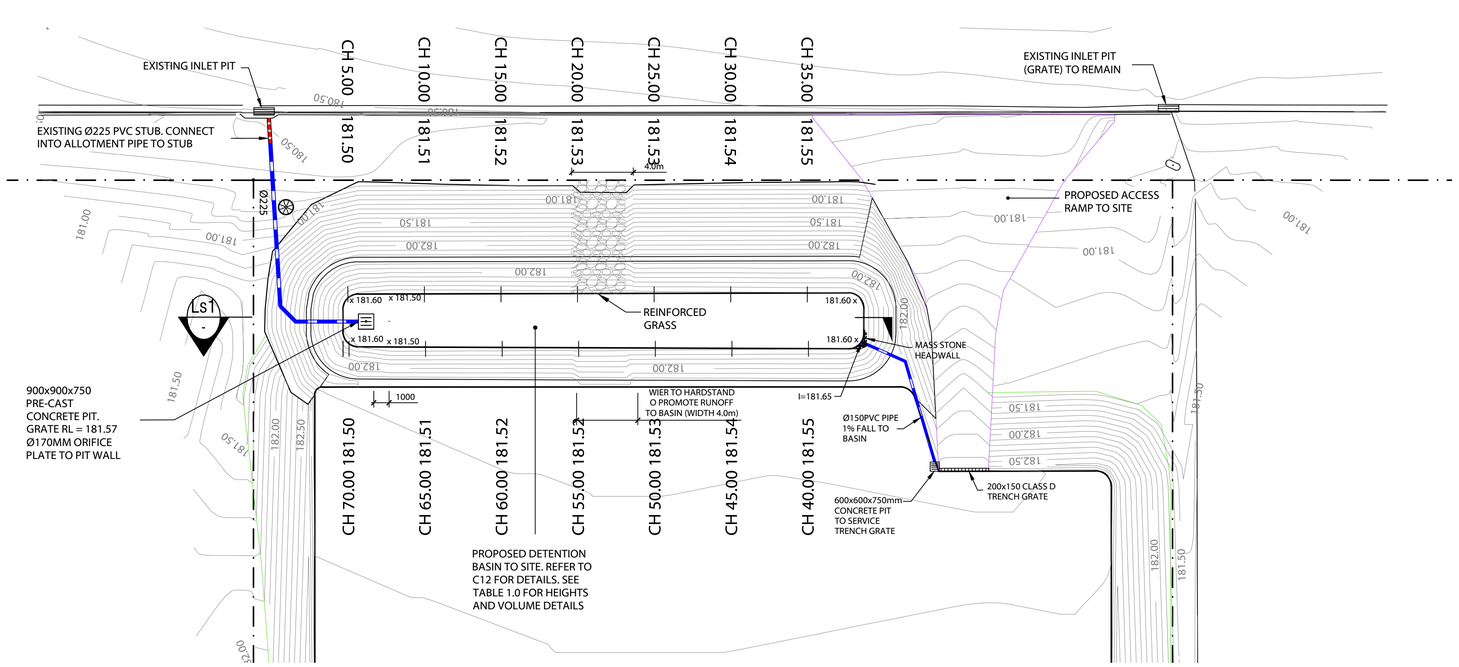
TURNING TEMPLATE

Scale
Horizontal:

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	04/02/20
Drawn	BC	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	DEC 19	19-027-C10	B

A1 SHEET



BASIN PLAN

SCALE: 1:200 (A1)

BASIN VOLUME		
RL	AREA (m²)	VOLUME (m³)
181.50	0	0
181.60	118.35	8.35
181.70	139.27	21.23
181.80	160.68	36.22
181.90	182.57	53.38
182.00	204.95	72.75
182.10	227.81	94.38
182.20	250.61	118.32
182.25	261.85	131.13

TABLE 1.0: BASIN VOLUME

STORMWATER CALCULATION

1. TOTAL SITE AREA = 6008m²
2. PERVIOUS AREA = 2108m² (35%)
3. IMPERVIOUS AREA = 3900m² (65%)
4. PERMISSIBLE SITE DISCHARGE: 0.106m³/sec/hec
   = 0.106 x 0.6008
   = 0.0063m³ hec

   = 63.6 litre/sec
5. PROPOSED BASIN VOLUME: REFER TO TABLE 1.0
6. STORAGE AND WATER LEVELS IN BASIN WITH Ø170 ORIFICE OUTLET TO ENSURE PSD IS NOT EXCEEDED. SHOWN IN TABLE 2.0.
7. FOR STORMS IN EXCESS OF 100 ARI, A WEIR HAS BEEN PROVIDED. THE HEIGHT OF THE WEIR IS RL 182.15 I.E AT THE 100 ARI WATER LEVEL.
8. THE PROPOSED WEIR AND OPEN CHANNEL DOWN STREAM OF THE WEIR HAS BEEN DESIGNED FOR 0.244 m³/sec.
   WEIR DESIGN:
   - Q_{100} = 0.244
   - W =4.0 (BASED ON 1 IN 3)
   - COEFF = 2.0
   - REQUIRED HEAD (H) = 95mm (182.25 TOP OF BANK)
   - WEIR HEIGHT = 182.15
   - WATER HEIGHT = 182.245

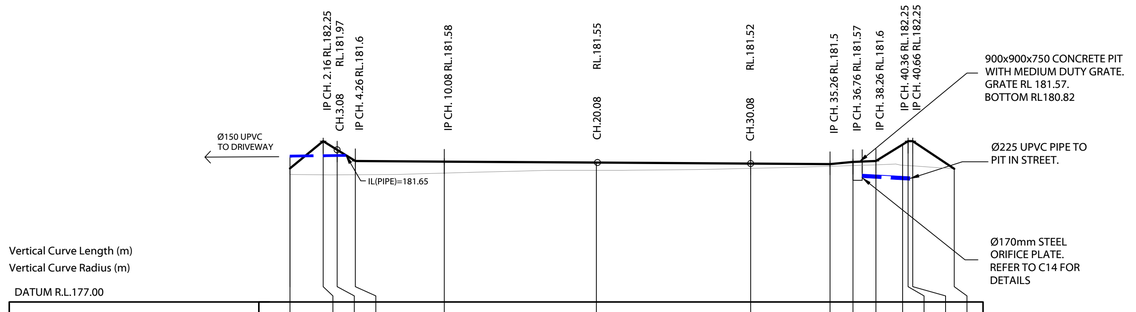
STORM EVENT	OUTLET FLOW (m³/SEC)	REQUIRED VOLUME	CRITICAL STORM EVENT	WATER LEVEL	GENERATED FLOWRATE POST DEVELOPMENT (m³/SEC)	PRE-DEVELOPMENT FLOWRATE (m³/SEC)
100 ARI	0.063	105m³	25min	182.16	0.253	0.179
50 ARI	0.061	84m³	25min	182.07	0.218	0.143
20 ARI	0.06	43m³	25min	181.87	0.197	0.118
10 ARI	0.059	38m³	25min	181.85	0.165	0.085
5 ARI	0.058	34m³	25min	181.81	0.138	0.064

TABLE 2.0: STORMWATER CHARACTERISTICS

LEGEND

- DENOTES EXISTING GRATE AND PIT TO ENTERPRISE CRESCENT

- DENOTES EXISTING GRATED INLET PIT WITH ENTRY TO ENTERPRISE CRESCENT. PIT HAS AN EXISTING Ø225 PVC STUB.



Vertical Curve Length (m)
Vertical Curve Radius (m)
DATUM R.L.177.00

CUT/FILL DEPTH	0.202	1.099	0.817	0.446	0.374	0.253	0.156	0.07	0.117	0.125	0.675	0.797	0.805	0.001				
DESIGN LEVELS ON BASIN CENTRELINE	181.362	182.25	181.967	181.6	181.582	181.55	181.517	181.5	181.57	181.6	182.138	182.25	182.25	181.349				
EXISTING SURFACE ALONG BASIN CENTRELINE	181.16	181.15	181.15	181.15	181.21	181.3	181.36	181.43	181.45	181.48	181.46	181.45	181.44	181.35				
CHAINAGE ALONG BASIN CENTRELINE	0	2.16	3.08	4.26	10.08	20	30.08	35.26	36.76	38.26	40	40.36	40.66	43.37				

LONGSECTION CENTRELINE OF DETENTION BASIN

HORIZONTAL SCALE 1:200 (A1)
VERTICAL SCALE 1:100 (A1)

REV	DESCRIPTION	DATE	BY
D	GENERAL AMENDMENTS	05/08/20	CH
C	GENERAL AMENDMENTS	16/06/20	CH
B	INCREASED HARDSTAND AREA.	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	CH

WILLFAB SUPERFUND
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LAMBTON, NSW, 2099

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38-40 ENTERPRISE CRESCENT
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Email rhmce@rhmce.com.au
www.rhmce.com.au
ABN 82 153 018 800

BASIN PLAN
AND LONGSECTION

Scale
Horizontal:

CIVIL DRAWING

Designed BH
Drawn CH
Datum NIL
Date JULY 20

Approved on behalf of RHM Consulting Engineers
05/08/20
Project Engineer/Director Date

Drawing No: 19-027-C11
Rev D

A1 SHEET

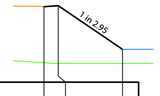
LEGEND

- GRAVEL HARDSTAND AREA
- EXISTING SURFACE LEVELS
- FLOOR TO DETENTION BASIN

Data at Basin Base

X=300028.42
Y=6424453.096
Z=181.54

Datum181



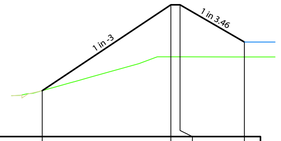
DESIGN BATTERS TO BASIN		182.23	182.25	181.54
EXISTING SURFACE LEVEL		181.32	181.31	181.31
OFFSET ALONG BASIN BASE		-2.56	-2.1	0

CHAINAGE 60.000

Data at Basin Base

X=300028.04
Y=6424449.033
Z=181.54

Datum180



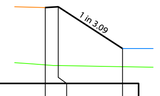
DESIGN BATTERS TO BASIN	180.75		182.15	182.15	181.54
EXISTING SURFACE LEVEL	180.75		181.3	181.3	181.3
OFFSET ALONG BASIN BASE	-6.6		-2.4	-2.1	0

CHAINAGE 20.000

Data at Basin Base

X=300019.31
Y=6424448.98
Z=181.57

Datum181



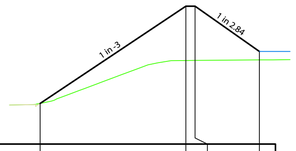
DESIGN BATTERS TO BASIN		182.24	182.23	181.57
EXISTING SURFACE LEVEL		181.3	181.29	181.27
OFFSET ALONG BASIN BASE		-2.52	-2.1	0

CHAINAGE 50.000

Data at Basin Base

X=300037.13
Y=6424453.207
Z=181.51

Datum180



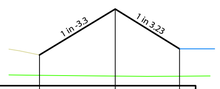
DESIGN BATTERS TO BASIN	180.66		182.25	182.25	181.51
EXISTING SURFACE LEVEL	180.66		181.36	181.36	181.37
OFFSET ALONG BASIN BASE	-7.16		-2.4	-2.1	0

CHAINAGE 10.000

Data at Basin Base

X=300010.89
Y=6424444.286
Z=181.6

Datum181



DESIGN BATTERS TO BASIN		181.5	182.25	181.6
EXISTING SURFACE LEVEL		181.17	181.16	181.15
OFFSET ALONG BASIN BASE		-4.57	-2.1	0

CHAINAGE 40.000

Data at Basin Base

X=300040.62
Y=6424458.606
Z=181.6

Datum181

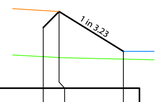
DESIGN BATTERS TO BASIN		182.29	182.25	181.6
EXISTING SURFACE LEVEL		181.51	181.5	181.47
OFFSET ALONG BASIN BASE		-2.62	-2.1	0

CHAINAGE 73.383

Data at Basin Base

X=300040.62
Y=6424458.606
Z=181.6

Datum181



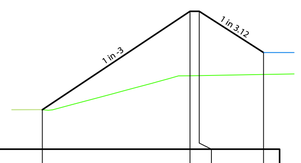
DESIGN BATTERS TO BASIN		181.99	182.25	181.6
EXISTING SURFACE LEVEL		181.51	181.5	181.47
OFFSET ALONG BASIN BASE		-2.62	-2.1	0

CHAINAGE 0.000

Data at Basin Base

X=300018.95
Y=6424444.86
Z=181.58

Datum180



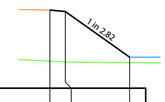
DESIGN BATTERS TO BASIN	180.64		182.25	182.25	181.58
EXISTING SURFACE LEVEL	180.64		181.2	181.2	181.22
OFFSET ALONG BASIN BASE	-7.22		-2.4	-2.1	0

CHAINAGE 30.000

Data at Basin Base

X=300037.53
Y=6424457.213
Z=181.5

Datum181



DESIGN BATTERS TO BASIN		182.27	182.25	181.5
EXISTING SURFACE LEVEL		181.44	181.43	181.42
OFFSET ALONG BASIN BASE		-2.6	-2.1	0

CHAINAGE 70.000

REV	DESCRIPTION	DATE	BY
C	ISSUED FOR APPROVAL.	05/08/20	CH
B	INCREASED HARDSTAND AREA.	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	CH

WILLFAB SUPERFUND
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www.rhmce.com.au
ABN 82 153 018 800

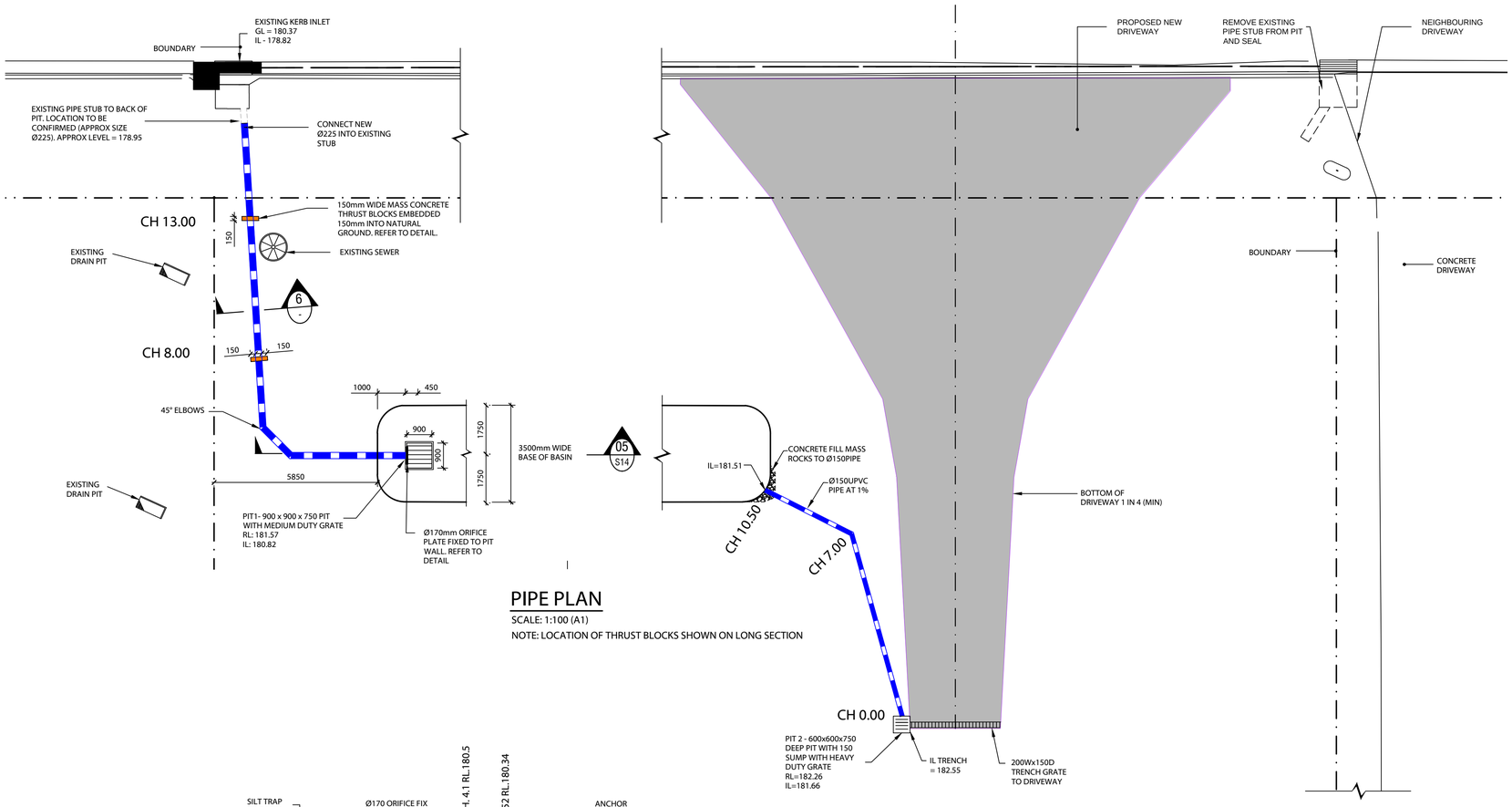
BASIN CROSS SECTIONS
SHEET 1

Scale
Horizontal: 0 1 2 3 4 5 SCALE 1:100 (A1)
Vertical: 0 0.5 1 1.5 2 2.5 SCALE 1:50 (A1)

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027-C12	C

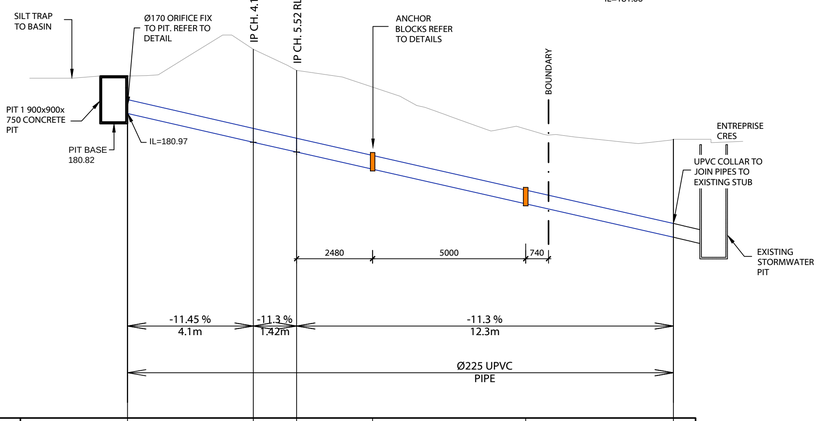
A1 SHEET



PIPE PLAN

SCALE: 1:100 (A1)

NOTE: LOCATION OF THRUST BLOCKS SHOWN ON LONG SECTION

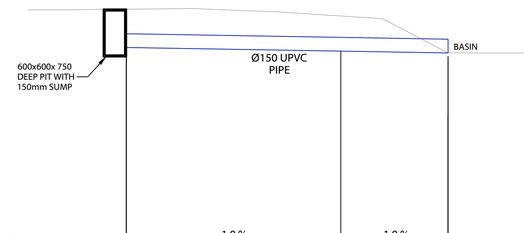


DATUM R.L.176.00

DEPTH BELOW DESIGN	-0.61	-1.52	-1.33			-1.6
DESIGN LEVELS ON OUTLET PIPE CENTRELINE	180.97	180.5	180.34			178.95
DESIGN SURFACE ON OUTLET PIPE CENTRELINE	181.58	182.02	181.67			180.55
CULVERT CHAINAGE	0	4.104	5.52	8.00	13.00	17.82

LONGSECTION: Outlet Pipe (Ø225mm) From Basin

HORIZONTAL SCALE 1:100 (A1)
VERTICAL SCALE 1:50 (A1)



DATUM R.L.177.00

DESIGN LEVELS ON OUTLET PIPE CENTRELINE	181.66	181.56	181.51
CULVERT CHAINAGE	0	7.00	10.50

LONGSECTION: Outlet Pipe (Ø150mm) From DRIVEWAY

HORIZONTAL SCALE 1:100 (A1)
VERTICAL SCALE 1:50 (A1)

MUSWELLBROOK SHIRE COUNCIL
DEVELOPMENT CONSENT
This document forms part of Council's Notice of Determination

DA 2020-22
Approval Date: 22-Sep-20

Delegated Officer: ALISA EVANS

REV	DESCRIPTION	DATE	BY
C	ISSUED FOR APPROVAL.	05/08/20	CH
B	INCREASED HARDSTAND AREA.	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	CH

WILLFAB SUPERFUND
c/o GRAEME RAY
PO BOX 136
LAMBTON, NSW, 2099

PROPOSED HARDSTAND
38-40 ENTERPRISE CRESCENT
MUSWELLBROOK, NSW 2333

RHM Consulting Engineers
Civil & Structural Consulting Engineers
109 Susan street, Scone NSW
Tel (02) 6545 2800
Email rhmce@rhmce.com.au www.rhmce.com.au
ABN 82 153 018 800

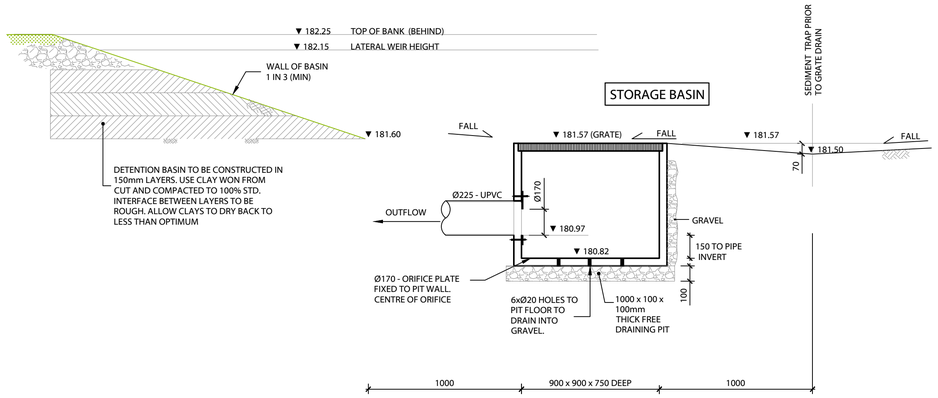
PIPE PLAN AND LONGHSECTIONS

Scale
Horizontal:
0 1 2 3 4 5
SCALE 1:100 (A1)
Vertical:
0 0.5 1 1.5 2 2.5
SCALE 1:50 (A1)

CIVIL DRAWING

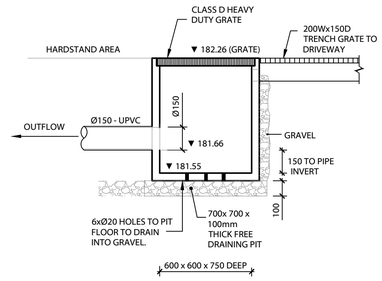
Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027-C13	C

A1 SHEET



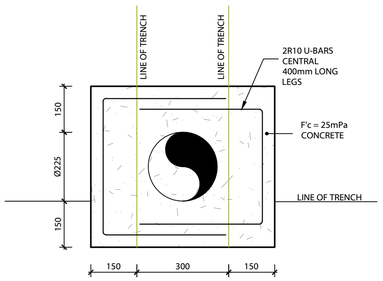
SECTION 05

1:20 (A1) — S13



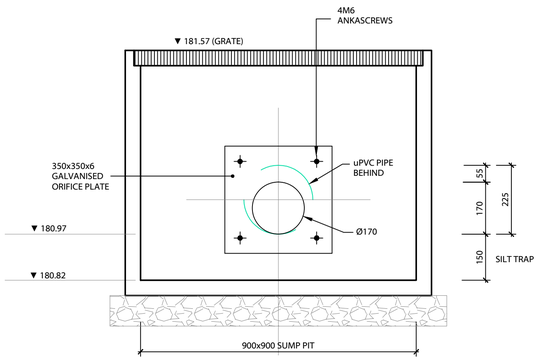
PIT 2 DETAIL

SCALE 1:20 (A1)



SECTION 6 - ANCHOR BLOCK DETAIL

SCALE 1:10 (A1)
NOTE:
1. *DIMENSIONS MAY CHANGE TO REFLECT COLLAR LAYOUT AS ANCHOR BLOCK SHOULD BE INSTALLED AROUND COLLARFOR GREATER STRENGTH.
2. ANCHOR BLOCKS AT CH 8.0 AND CH 13.0



ORIFICE PLATE DETAIL

SCALE 1:10 (A1)

REV	DESCRIPTION	DATE	BY
D	GENERAL AMENDMENTS	05/08/20	CH
C	GENERAL AMENDMENTS	16/06/20	CH
B	INCREASED HARDSTAND AREA.	04/02/20	BC
A	ISSUED FOR APPROVAL.	10/01/20	JP

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PIPE SECTIONS AND DETAILS

Scale
Horizontal:

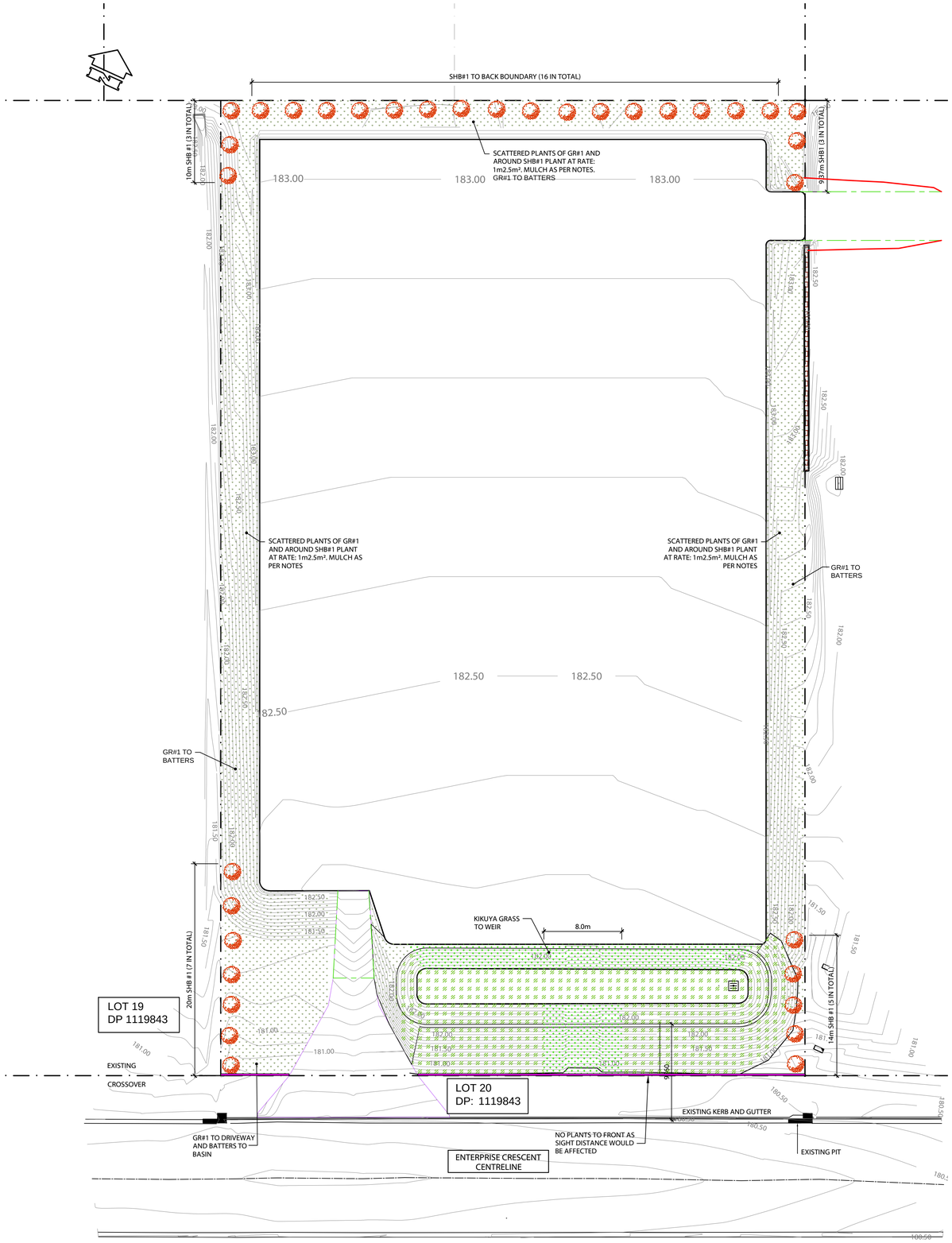
CIVIL DRAWING

Designed	BH
Drawn	CH
Datum	NIL
Date	JULY 20

Approved on behalf of RHM Consulting Engineers
05/08/20
Project Engineer/Director Date

Drawing No: 19-027-C14
Rev D

A1 SHEET



NOTES:

1. PRIOR TO PLANNING, THE LAYER TOPSOIL (SOIL FROM STOCKPILE) MUST BE WEEDED AND RAKED TO ENSURE MATERIAL IS NOT COMPACTED.
2. AT LEAST 75MM OF ORGANIC MULCH (E.G. PINE BARK) MUST BE LAID OVER THE EXPOSED TOP SOIL MATERIAL. THIS MULCH IS CRITICAL FOR WEED CONTROL.
3. MULCH AND TOPSOIL TO BE PRE-WATERED PRIOR TO PLANTING. MULCH SHOULD BE KEPT AWAY FROM THE BASE OF ALL PLANTS.
4. THE HOLES FOR THE PLANTS SHOULD BE OVER EXCAVATED TO TWICE THE DIAMETER OF THE POT AND AT LEAST 100MM SURPLUS IN DEPTH. THE ORGANIC FILL SHOULD BE FIRMLY PLACED THE PLANT. WATERING UPON COMPLETION SHOULD OCCUR.
5. PLANT ROOT BALL SHOULD BE WATERED PRIOR TO AND UPON COMPLETION OF PLANTING. ROOT BALL MAY NEED TO BE DISTRIBUTED. REFER TO PLANTING RECOMMENDATIONS AS SUPPLIED.
6. REGULARLY WATER (TWICE WEEKLY IN SPRING) SHOULD OCCUR TO ESTABLISH THE PLANTS. TYPICALLY IS SUGGESTED THAT AT LEAST 1 TO 2 LITRES OF WATER PER PLANT SHOULD BE APPLIED TO THE PLANTS IN THE FIRST 12 WEEKS OR UNTIL ESTABLISHMENT HAS OCCURRED. THIS MAY NEED TO INCREASE IF PLANTING OCCURS IN SUMMER.
7. WEEDING WITHIN FOUR (4) WEEK OF PLANTING IS SUGGESTED. ONGOING WEEDING THEREAFTER IS RECOMMENDED TO ENSURE WEED DENSITY DOES NOT EXCEED 10%.
8. SMALLER SHRUBS SHOULD BE STAKED.
9. PRUNING BI-ANNUAL MAY BE REQUIRED DEPENDING UPON PLANTING GROWTH.
10. DETAILS RELATING TO IMPORTED SOILS TO GARDENS AND TURF AREAS TO REFLECT RECOMMENDATIONS AS NOTED IN AS4419.
11. FERTILISING ON ESTABLISHMENT AND DURING SPRING IS RECOMMENDED. RATES OF APPLICATION TO MANUFACTURES DETAILS.
12. PLANT SURVIVAL RATE SHOULD EXCEED 80%. IF THE SURVIVAL RATE IS LESS THAN THIS, ADDITIONAL PLANTING AT THE APPROPRIATE SEASON WILL BE REQUIRED.

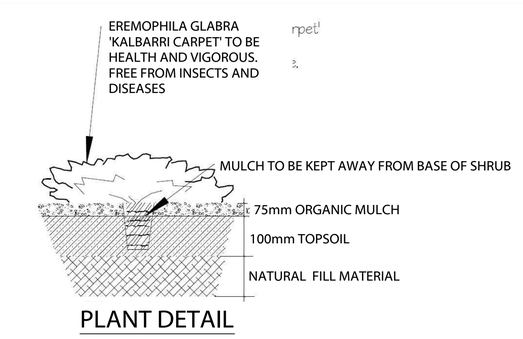
LEGEND:

- DENOTES KIKUYA GRASS TO WEIR
- DENOTES SHB#1 SCREENING SHRUBS CALLISTEMON VIMINALIS "SLIM" BOTTLE BRUSH. PLACES 1.5m INSIDE BOUNDARY FENCE SPACED AT 3m CENTERS
- DENOTES GR#1 EREMOPHILA GLABRA "KALBARRI CARPET" TO BE PLANTED TO ALL BATTERS AS SHOWN SUGGESTED PLANTING RATE TO BE 1 PLANT PER 2.5m² MULCH AS NOTED IN NOTE #2
- DENOTES NATIVE GRASSES TO BASIN BATTER AND FLOOR AS SHOWN
- DENOTES 100mm HIGH H4 PINE KICKER BOARD FIXED TO FENCE TO RESTRAIN MULCH

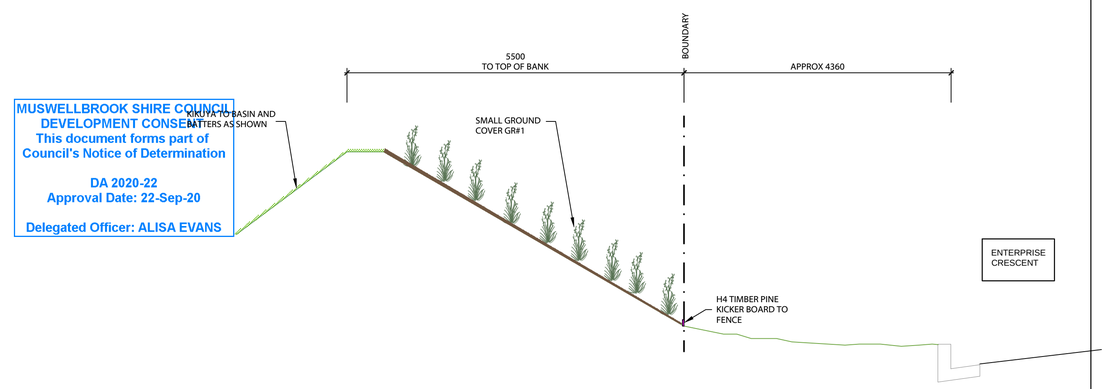
CALLISTEMON VIMINALIS "SLIM"

KIKUYA GRASS

EREMOPHILA GLABRA "KALBARRI CARPET"



PLANT DETAIL



BANK LANDSCAPE DETAIL

NTS

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LANDSCAPE PLAN

Scale
Horizontal:
0 2.5 5 7.5 10 12.5
SCALE 1:250 (A1)

CIVIL DRAWING

Designed	BH	Approved on behalf of RHM Consulting Engineers	05/08/20
Drawn	CH	Project Engineer/Director	Date
Datum	NIL	Drawing No:	Rev
Date	JULY 20	19-027-C15	B