



henry&hymas



**STORMWATER REPORT
PROPOSED FOOD MANUFACTURING FACILITY
DISTRIBUTION DRIVE, ORCHID HILLS, 2748, NSW**

**State Significant Development Application
Submission
July 2021
Revision 01**

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APPENDIX A: DEVELOPMENT APPLICATION DRAWINGS

1. INTRODUCTION

1.1 General

This report has been prepared to support the Development Application for the proposed Manufacturing Facility Development at 685-649 Mamre Road, Orchard Hills. This report has been prepared in accordance with Penrith Council's DCP and engineering requirements. The report has been prepared to demonstrate that Council's on-site detention and water quality requirements have been met.

The following Engineering matters have been addressed in this report:

- Water Sensitive Urban Design (WSUD)
- Stormwater Detention
- Flooding

1.2 Background

The site is located at 685-649 Mamre Road, Orchard Hills, and is bounded by Distribution Drive to the east, Mamre Road to the west, and the existing stage 1 development to the south.

The subject site is located in the Western Sydney suburb of Orchard Hills and is approximately 5.1ha in area. The locality sketch of the site is shown in Figure 1.



Figure 1 - Locality sketch

1.3 The Proposed Development

The proposed development is a manufacturing facility, with a loading dock, truck manoeuvring area, car parking, truck parking and landscape areas. Also included within the development is a waste water treatment plant and a pallet storage area, proposed adjacent to the western boundary. The proposed site has vehicular access from Distribution Drive. The main manufacturing facility is an extension of the existing development to the south. Refer to Appendix A for a set of the civil engineering Development Application drawings.

1.4 Council Policies

The civil engineering component of the aforementioned project has been designed in accordance with the following council codes and policies:

- Penrith City Council – Stormwater Drainage and Guidelines for Building Developments
- Penrith City Council – WSUD Technical Guidelines
- Penrith City Council DCP – C3 Water Management

2. FLOODING

The subject site is not affected by mainstream flooding. Detailed flood modelling for the entire subdivision was undertaken by CostinRoe Consulting Engineers, which accompanied the original SSD application. Figure 2.0 (shown below), is an excerpt from the CostinRoe Consulting Engineers Flood Report, which shows that the subject site is outside of the flood extent. The flood level for the 1% AEP flood event adjacent to the site has been determined to be approximately 32.50 AHD. The proposed FFL of the manufacturing facility is 36.75 AHD, with the lowest part of the site at approximately 34.60 AHD.

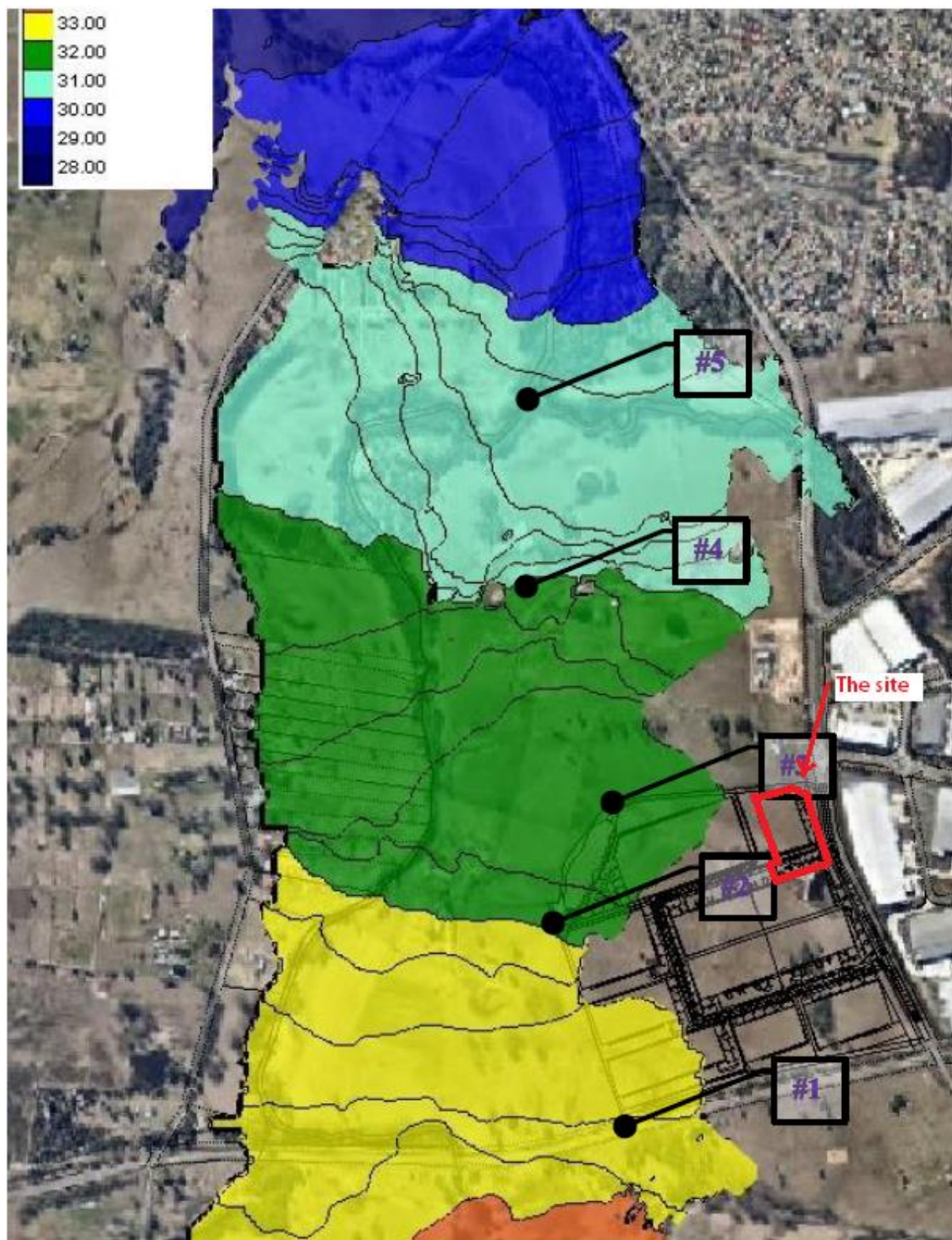


Figure 2.0 Flood Map – CostinRoe Flood Report

3. STORMWATER MANAGEMENT

Stormwater controls will be implemented that ensure that the proposed development does not adversely impact on stormwater flows and water quality of the stormwater system downstream of the site.

The principles and operation of the proposed stormwater system for the development including water quality measures and the components of the internal drainage system are detailed on the Development Application Drawings included in Appendix A.

3.1 Stormwater Quantity

There is a downstream detention basin provided for the entire subdivision which caters for the post-developed flows from each lot. This basin controls the stormwater discharge from the site, and therefore negates the need for an on-site detention storage. Refer to the proposed estate infrastructure plans prepared by CostinRoe Consulting Engineers, prepared as a part of the State Significant Development Application (SSD 15_7173), for further details.

3.2 Water Quality

In addition to a downstream detention basin, there is downstream infrastructure which caters for the water quality treatment of the entire subdivision in its post-developed state. Namely, the following downstream treatment is provided:

- Primary treatment in the form of gross pollutant traps
- Secondary Treatment in the form of bio-retention basins

It can be surmised that the downstream estate infrastructure in place, which caters for the proposed development, ensures that Council's water quality requirements are satisfied. Refer to the proposed estate infrastructure plans prepared by CostinRoe Consulting Engineers, prepared as a part of the State Significant Development Application (SSD 15_7173), for further details.

In addition to the downstream treatment, there are some water quality protection measures proposed on site, in order to protect downstream waterways from oil or chemical spills. Based on the size and use of the proposed manufacturing facility, it has been recommended to provide a total storage volume of 612m³ for the temporary containment of dangerous chemicals or oil, in case of a spill or accident. This volume is to be provided on the northern part of this site (which is to be dedicated for truck parking) in the form of above ground ponding. In addition to this storage, an isolation valve or penstock valve is proposed to be installed within the most downstream stormwater inspection pit. This enables the stormwater system to be shutdown remotely in the event of a spill, wherein the contaminated liquid will fill up into the stormwater pipe system and surcharge within the truck parking area. Refer to Figure 3.2 below demonstrating the location of the above ground ponding location and penstock valve location.

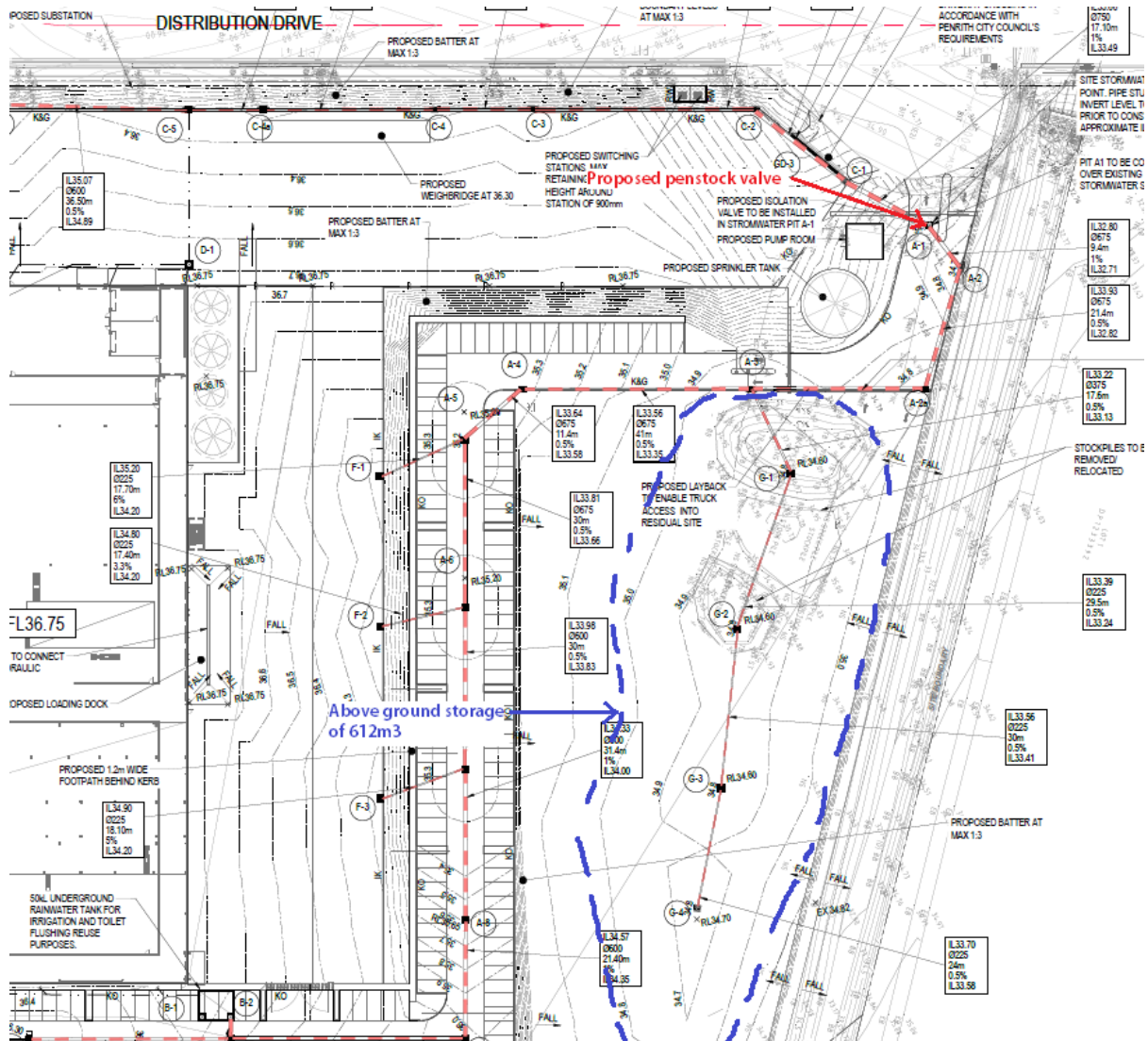


Figure 3.2 Penstock Valve and Above Ground Storage

4. WATER CONSERVATION

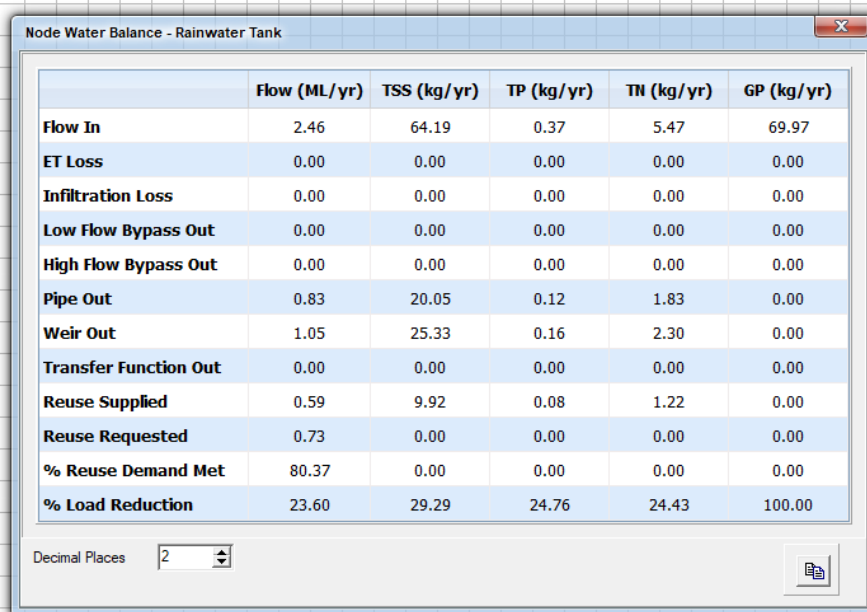
As per Penrith City Council's requirements, a WSUD strategy in relation to the water conservation of proposed development is required to be addressed for each development application.

Water usage reduction within the manufacturing facility is proposed to be achieved through the use of 4-star WELS rated water fixtures (or higher), in addition to water reuse for toilet flushing and irrigation purposes. A 50kL rainwater tank is proposed to be provided for this purpose. This rainwater storage is to be provided in the form of an underground tank within the external car parking. A total roof catchment of 29030m² is proposed to connect to the rainwater tank.

A MUSIC model has been developed in order to undertake a water balance on the proposed reuse system. The model has been prepared with the following parameters:

- Using Penrith Council's MUSIC link data
- A total of 16 toilets have been included in the model, with an estimated demand of 0.1kL/day for each. Note no proposed disabled toilets have been included within the model.
- A total landscaping area of 450m² is proposed to be connected to the rainwater tank, with an estimated demand of 180kL/yr. Please note that it is expected that the turf areas and steep batter areas are not understood to be irrigated.
- Effective rainwater volume of 40kL

Council's requirement is to provide 80% of non-potable demand through rainwater reuse. Refer to Figure 4.0 below demonstrating the water balancing results. A re-use rate of 80.4% has been achieved.



	Flow (ML/yr)	TSS (kg/yr)	TP (kg/yr)	TN (kg/yr)	GP (kg/yr)
Flow In	2.46	64.19	0.37	5.47	69.97
ET Loss	0.00	0.00	0.00	0.00	0.00
Infiltration Loss	0.00	0.00	0.00	0.00	0.00
Low Flow Bypass Out	0.00	0.00	0.00	0.00	0.00
High Flow Bypass Out	0.00	0.00	0.00	0.00	0.00
Pipe Out	0.83	20.05	0.12	1.83	0.00
Weir Out	1.05	25.33	0.16	2.30	0.00
Transfer Function Out	0.00	0.00	0.00	0.00	0.00
Reuse Supplied	0.59	9.92	0.08	1.22	0.00
Reuse Requested	0.73	0.00	0.00	0.00	0.00
% Reuse Demand Met	80.37	0.00	0.00	0.00	0.00
% Load Reduction	23.60	29.29	24.76	24.43	100.00

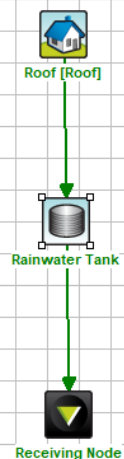


Figure 4.0 Music Model Results

5. CONCLUSION

The proposed manufacturing facility aims to meet the detention and stormwater quality required through the existing downstream estate bio-retention and detention basins. Additionally, the development aims to meet Council's water conservation requirements in the form of a 50kL underground tank, which is to be connected for toilet flushing and irrigation reuse.

The stormwater design of the proposed manufacturing facility is in accordance with Penrith City Council's detention, water quality and flooding requirements as well as engineering best practice principles, hence it can be ensured that there will be minimal impact on the existing environment as a result of the proposed development.

It should be noted that the results shown in this report are limited to use for Development Application purposes only. During the detailed design stages, a further refinement of the modelling based on the detail design of the development will be necessary.

6. APPENDICES

APPENDIX A: DEVELOPMENT APPLICATION DRAWINGS

PROPOSED FOOD MANUFACTURING FACILITY

ORCHARD HILLS 2748 NSW

CIVIL ENGINEERING WORKS

GENERAL NOTES:

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH PENRITH CITY COUNCIL'S SPECIFICATION. CONTRACTOR TO OBTAIN AND RETAIN A COPY ON SITE DURING THE COURSE OF THE WORKS.
2. ALL NEW WORKS ARE TO MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS, AND MARRY IN A 'WORKMANLIKE' MANNER.
3. THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL SERVICES WITH EACH RELEVANT AUTHORITY. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY OR AS DETERMINED FROM SERVICE DIAGRAMS. HENRY AND HYMAS CONSULTING PTY. LTD. CANNOT GUARANTEE THE INFORMATION SHOWN NOR ACCEPT ANY RESPONSIBILITY FOR INACCURACIES OR INCOMPLETE DATA.
4. SERVICES & ACCESSSES TO THE EXISTING PROPERTIES ARE TO BE MAINTAINED IN WORKING ORDER AT ALL TIMES DURING CONSTRUCTION.
5. ADJUST EXISTING SERVICE COVERS TO SUIT NEW FINISHED LEVELS TO RELEVANT AUTHORITY REQUIREMENTS WHERE NECESSARY.
6. REINSTATE AND STABILISE ALL DISTURBED LANDSCAPED AREAS.
7. MINIMUM GRADE OF SUBSOIL SHALL BE 0.5% (1:200) FALL TO OUTLETS.
8. ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS, EROSION AND SEDIMENTATION CONTROL PLAN AND PENRITH CITY COUNCIL'S REQUIREMENTS WHERE APPLICABLE.
9. CONTRACTOR TO CHECK AND CONFIRM SITE DRAINAGE CONNECTIONS ACROSS THE VERGE PRIOR TO COMMENCEMENT OF SITE DRAINAGE WORKS.
10. PROPERTIES AFFECTED BY THE WORKS ARE TO BE NOTIFIED IN ADVANCE WHERE DISRUPTION TO EXISTING ACCESS IS LIKELY.

SITEWORKS NOTES

- DATUM A.H.D.

ORIGIN OF LEVELS. REFER TO BENCH OR STATE SURVEY MARKS WHERE SHOWN ON PLAN.

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
- ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE DIRECTIONS OF THE SUPERINTENDENT.

EXISTING SERVICES UNLESS SHOWN ON SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS ACHIEVED.

THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.

CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATION IS TO BE UNDERTAKEN OVER TELSTRA OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.

CONTRACTOR TO OBTAIN AUTHORITY APPROVALS WHERE APPLICABLE.

ENSURE SMOOTH TRANSITION TO EXISTING SURFACES.
- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED LANDSCAPE, ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND SPECIFICATIONS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING TO DEVELOPMENT AT THE SITE.

TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MINIMUM OF 50mm IN BITUMINOUS PAVING.

ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 800 uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.

GRADES TO PAVEMENTS TO BE AS IMPLIED BY RL'S ON PLAN. GRADE EVENLY BETWEEN NOMINATED RL'S. AREAS EXHIBITING PONDING GREATER THAN 5mm DEPTH WILL NOT BE ACCEPTED/ UNLESS IN A DESIGNATED SAG POINT.

ALL COVERS AND GRATES ETC TO EXISTING SERVICE UTILITIES ARE TO BE ADJUSTED TO SUIT NEW FINISHED SURFACE LEVELS WHERE APPLICABLE



LOCALITY SKETCH

SCALE: NTS

DRAWING SCHEDULE	
21C51_DA_C000	COVER SHEET, DRAWING SCHEDULE, NOTES AND LOCALITY SKETCH
21C51_DA_C100	GENERAL ARRANGEMENT PLAN
21C51_DA_C101	DETAIL PLAN
21C51_DA_C200	STORMWATER MISCELLANEOUS DETAILS & PIT LID SCHEDULE
21C51_DA_C250	STORMWATER CATCHMENT PLAN
21C51_DA_C500	PAVEMENT PLAN
21C51_DA_SE01	SEDIMENT AND EROSION CONTROL PLAN
21C51_DA_SE02	SEDIMENT AND EROSION CONTROL DETAILS
21C51_DA_BE01	BULK EARTHWORKS PLAN

EXISTING SERVICES & FEATURES

- THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF ALL EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA OR AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.

THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.

PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN APPROVAL OF HIS PROGRAM FOR THE RELOCATION/ CONSTRUCTION OF TEMPORARY SERVICES.
- CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN SUPPLY TO EXISTING BUILDING REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED, THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.

INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. CONTRACTOR TO GAIN APPROVAL FROM THE SUPERINTENDENT FOR TIME OF INTERRUPTION.

EXISTING SERVICES, BUILDINGS, EXTERNAL STRUCTURES AND TREES SHOWN ON THESE DRAWINGS ARE EXISTING FEATURES PRIOR TO ANY DEMOLITION WORKS.

EXISTING SERVICES UNLESS SHOWN ON SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE A 'DIAL BEFORE YOU DIG' SEARCH AND TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 800 uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.

SUBGRADE PREPARATION - SITEWORKS

ALL EARTHWORKS SHOULD BE IN ACCORDANCE WITH AS3798 AND THE SITE INVESTIGATION BY CONSTRUCTION SCIENCES DATED JUNE 2020. THIS GEOTECHNICAL INVESTIGATION WAS PREPARED FOR THE NEIGHBOURING McDONALD'S SITE AND DOES NOT COVER THE PROPOSED SITE IN DETAILS. IT HAS BEEN ASSUMED THAT THE SOIL CONDITIONS WOULD BE VERY SIMILAR TO THE NEIGHBOUR SITE, ALTHOUGH A DEDICATED GEOTECHNICAL INVESTIGATION WILL BE REQUIRED DURING CONSTRUCTION FOR CONFIRMATION.

- THE EXISTING SURFACE IS TO BE STRIPPED OF ANY PAVEMENTS, TOPSOIL OR OBVIOUS UNSUITABLE MATERIAL.

EXCAVATE TO ACHIEVE SUBGRADE LEVELS WHERE NECESSARY.

THE EXPOSED SUBGRADE AFTER STRIPPING AND/OR EXCAVATION TO BE PROOF ROLLED USING NOT FEWER THAN 5 PASSES OF A MINIMUM 8 TONNE DEAD WEIGHT STEEL SMOOTH-DRUM ROLLER UNDER THE SUPERVISION OF AN EXPERIENCED GEOTECHNICAL ENGINEER OR AN EXPERIENCED CIVIL ENGINEER. ANY AREAS ON THE SUBGRADE EXHIBITING EXCESSIVE DEFLECTION / MOVEMENT UNDER ROLLER TO BE EXCAVATED TO A MIN. DEPTH OF 0.5m AND REPLACED WITH APPROVED GRANULAR MATERIAL COMPACTED IN 250mm LOOSE LAYERS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- ENGINEERED FILL FOR REPLACEMENT OF SOFT OR HEAVING AREAS OR FOR BULK FILLING TO COMPRISE ESSENTIALLY OF GRANULAR MATERIALS (EG EXCAVATED SHALE), WITH A PARTICLE SIZE NOT GREATER THAN 75mm DIAMETER. ENGINEERED FILL TO BE PLACED IN LAYERS NOT EXCEEDING 250mm LOOSE THICKNESS AND COMPACTED TO BETWEEN 98% AND 102% OF STANDARD MAXIMUM DRY DENSITY (SMDD) WITHIN 2% OF OPTIMUM MOISTURE CONTENT (OMC).

IMPORTED FILLING (IF REQUIRED) IS TO BE TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. THE CONTRACTOR IS TO NOMINATE THE SOURCE AND PROVIDE A SAMPLE FOR APPROVAL PRIOR TO IMPORTATION AND PLACEMENT ON SITE.
- ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING. FREE FORM ORGANIC AND PERISHABLE MATTER
MAXIMUM PARTICLE SIZE = 75mm
MAXIMUM PLASTICITY INDEX = 15%
- GEOTECHNICAL INSPECTION AND TESTING SHOULD BE UNDERTAKEN DURING CONSTRUCTION IN ACCORDANCE WITH AS3789-2007.

SUBSOIL DRAINAGE NOTES

- GENERAL: PROVIDE SUBSOIL DRAINS TO INTERCEPT GROUNDWATER SEEPAGE AND PREVENT WATER BUILD-UP BEHIND WALLS AND UNDER FLOORS AND PAVEMENT. CONNECT SUBSOIL TO SURFACE DRAINS OR TO THE STORMWATER DRAINAGE SYSTEM AS APPLICABLE.

PIPE DEPTH:
PROVIDE THE FOLLOWING MINIMUM CLEAR DEPTH, MEASURED TO THE CROWN OF THE PIPE, WHERE THE PIPE PASSES BELOW THE FOLLOWING ELEMENTS:
 - 100mm BELOW FORMATION LEVEL OF THE PAVEMENT, KERB OR CHANNEL.
 - 100mm BELOW THE AVERAGE GRADIENT OF THE BOTTOM OF FOOTINGS.
- JOINTING:
AT JUNCTIONS OF SUBSOIL PIPES PROVIDE TEES, COUPLINGS OR ADAPTORS TO AS2439.1.

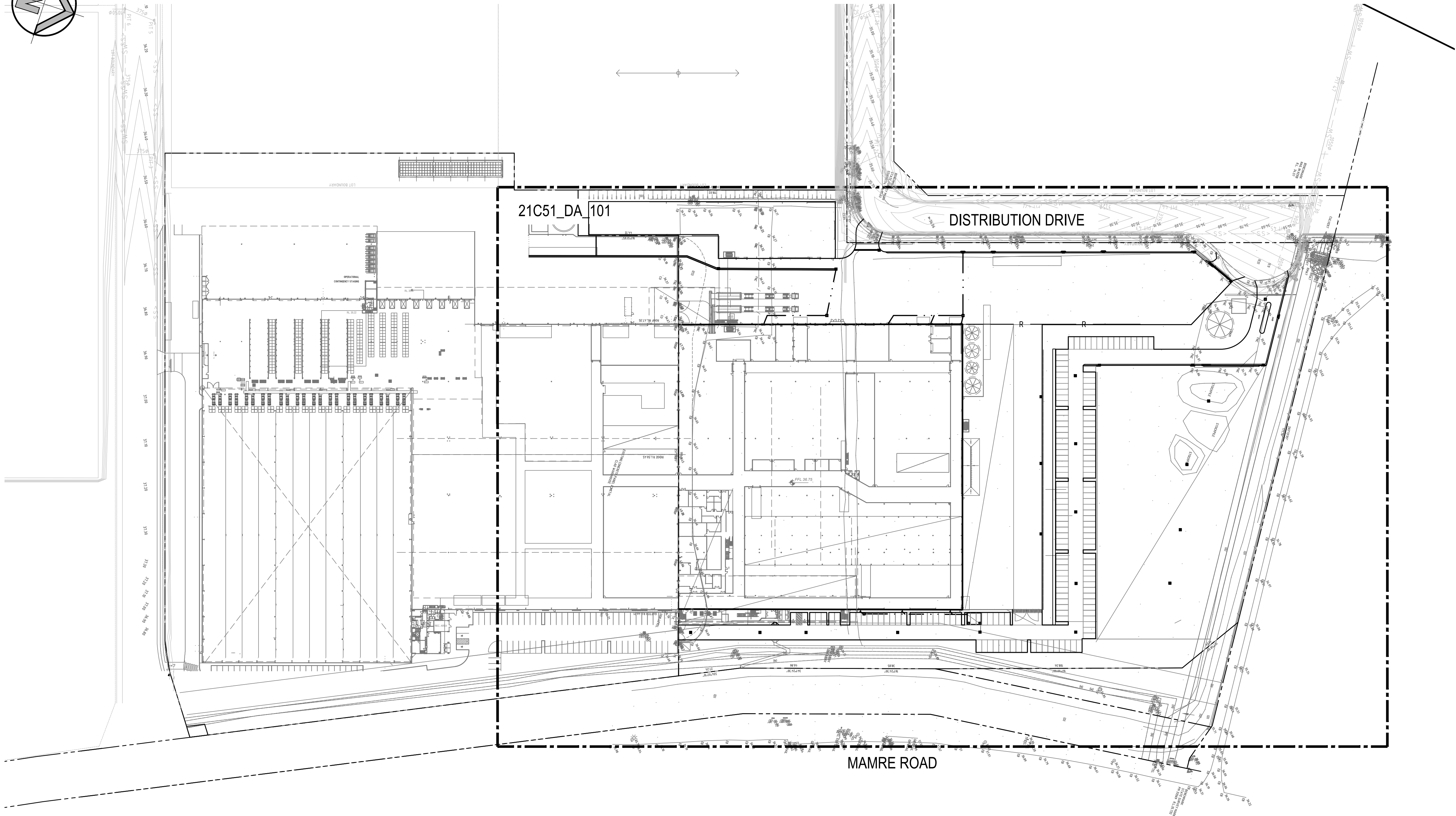
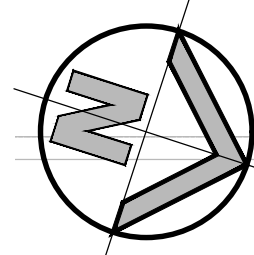
TRENCH WIDTH MINIMUM 300mm
- PIPE UNDERLAY
GENERAL: GRADE THE TRENCH FLOOR EVENLY TO THE GRADIENT OF THE PIPELINE. IF THE TRENCH FLOOR IS ROCK, CORRECT ANY IRREGULARITIES WITH COMPACTED BEDDING MATERIAL. BED PIPING ON A CONTINUOUS UNDERLAY OF BEDDING MATERIAL, AT LEAST 75mm THICK AFTER COMPACTION. LAY THE PIPE WITH ONE LINE OF PERFORATIONS AT THE BOTTOM.

CHASES: IF NECESSARY TO PREVENT PROJECTIONS SUCH AS SOCKETS AND FLANGES FROM BEARING ON THE TRENCH BOTTOM OR UNDERLAY.
- PIPE SURROUNDS:
GENERAL: PLACE THE MATERIAL IN THE PIPE SURROUND IN LAYERS SMALLER THAN OR EQUAL TO 200mm LOOSE THICKNESS, AND COMPACT WITHOUT DAMAGING OR DISPLACING PIPING.
DEPTH OF OVERLAY: TO THE UNDERSIDE OF THE BASE OF OVERLYING STRUCTURES SUCH AS PAVEMENTS, SLABS AND CHANNELS. TO WITHIN 150mm OF THE FINISHED SURFACE OF UNPAVED OR LANDSCAPED AREAS.

FILTER SOCKS: PROVIDE POLYESTER PERMEABLE SOCKS CAPABLE OF RETAINING PARTICLES OF 0.25mm SIZES. SECURELY FIT OR JOIN THE SOCK AT EACH JOINT.

FOR DA ONLY

SURVEY INFORMATION SURVEYED BY BOXALL DATUM: AHD ORIGIN OF LEVELS: PM 33569, RL37.732 REVISION AMENDMENT DRAWN DESIGNED DATE REVISION AMENDMENT DRAWN DESIGNED DATE										Client SNACKBRANDS Architect HLA ARCHITECTS This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without the prior written approval of Henry & Hymas.	Suite 2.01 826 Pacific Highway Gordon NSW 2072 Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hthconsult.com.au Web www.henryandhymas.com.au	henry&hymas	Project PROPOSED FOOD MANUFACTURING FACILITY ORCHARD HILLS 2748 NSW Title COVER SHEET, DRAWING SCHEDULE, NOTES AND LOCALITY SKETCH	Drawn M.Cerna Designed N.Heazlewood Checked N.Heazlewood Approved A.Francis Drawing number 21C51_DA_C000 Revision 03 Date APR 21 Scale @A1 NTS
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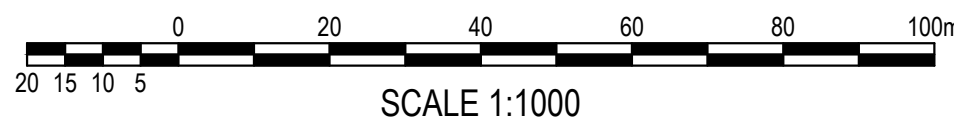


LEGEND

- PROPOSED LIMIT OF WORK
- EXISTING BOUNDARY
- R RIDGE
- V VALLEY
- PROPOSED JUNCTION PITS
- PROPOSED SURFACE INLET PITS
- PROPOSED LINTEL ONGRADE & SAG PITS
- PROPOSED PIT TAG
- STORMWATER UPSTREAM INVERT RL.
- STORMWATER PIPE DIAMETER & CLASS
- STORMWATER PIPE LENGTH
- STORMWATER PIPE GRADE
- STORMWATER DOWNSTREAM INVERT RL.
- PROPOSED STORMWATER PIPE
- EXISTING CONTOURS
- DESIGN CONTOURS
- EXISTING STORMWATER PIT
- PROPOSED DOWNPIPE
- PROPOSED TOP OF THE WALL
- EXISTING SPOT LEVEL
- PROPOSED SPOT LEVEL
- PROPOSED KERB & GUTTER
- PROPOSED KERB ONLY
- PROPOSED RETAINING WALL
- PROPOSED GRATED DRAIN
- EXISTING STORMWATER LINE
- PROPOSED BATTER LINE
- PROPOSED FALL
- PROPOSED DOWNPIPE COLLECTION LINE

GENERAL ARRANGEMENT PLAN

SCALE: 1:1000



FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY BOXALL
DATUM: AHD
ORIGIN OF LEVELS: PM 33569, RL37.732

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	MC	NH	18.06.2021					
02	ISSUED FOR DA ONLY	MC	NH	01.08.2021					
01	ISSUED FOR DA ONLY	MC	NH	06.05.2021					

Client
SNACKBRANDS

Architect
HLA ARCHITECTS

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Project
**PROPOSED FOOD MANUFACTURING FACILITY
ORCHARD HILLS 2748 NSW**

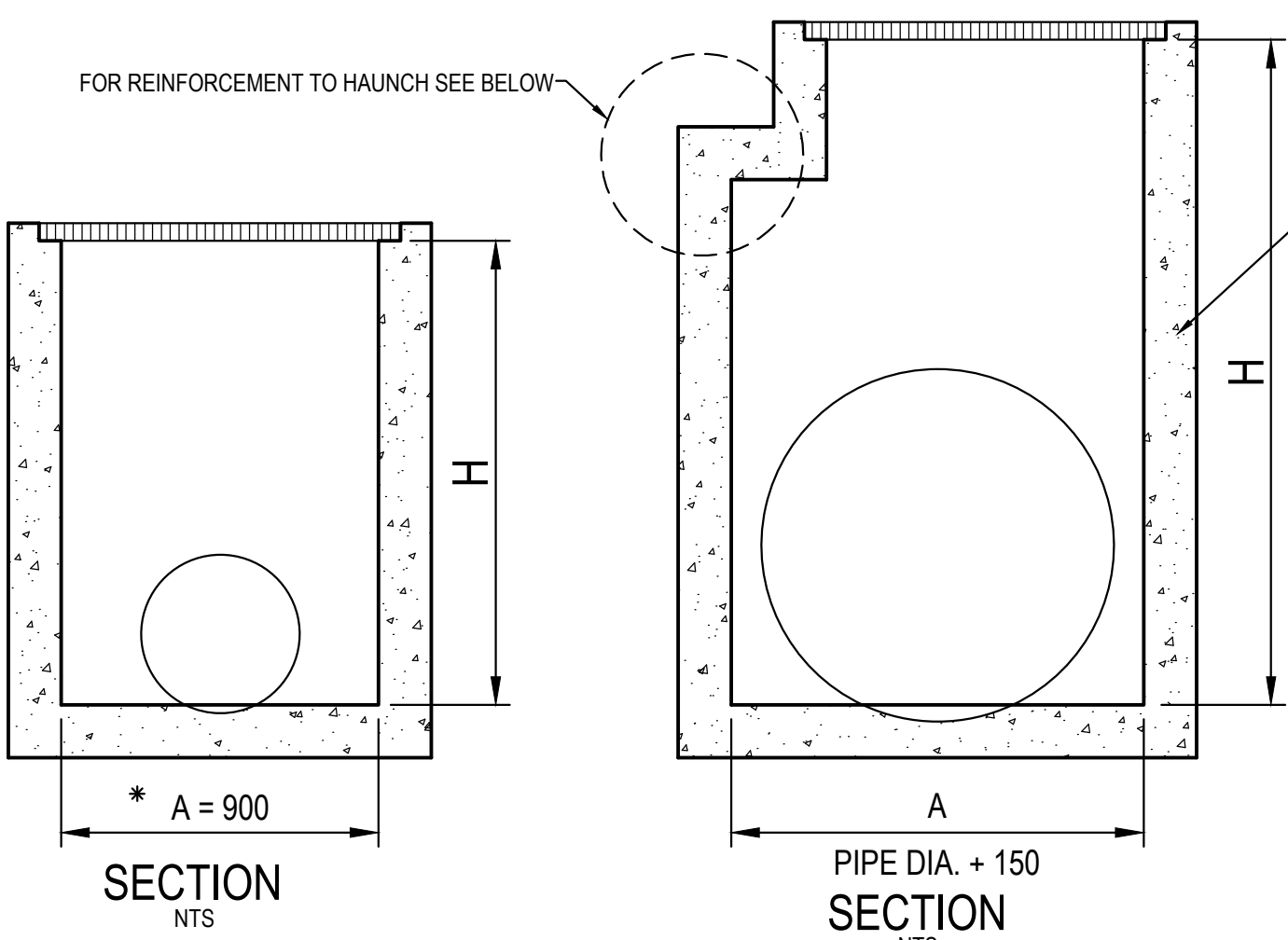
Title
GENERAL ARRANGEMENT PLAN

Drawn M.Cerna	Designed N.Heazlewood	Date APR 21
Checked N.Heazlewood	Approved A.Francis	Scale (B1) 1:1000
Drawing number 21C51_DA_C100		Revision 03

TYPICAL PIT CHAMBER SIZES

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

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

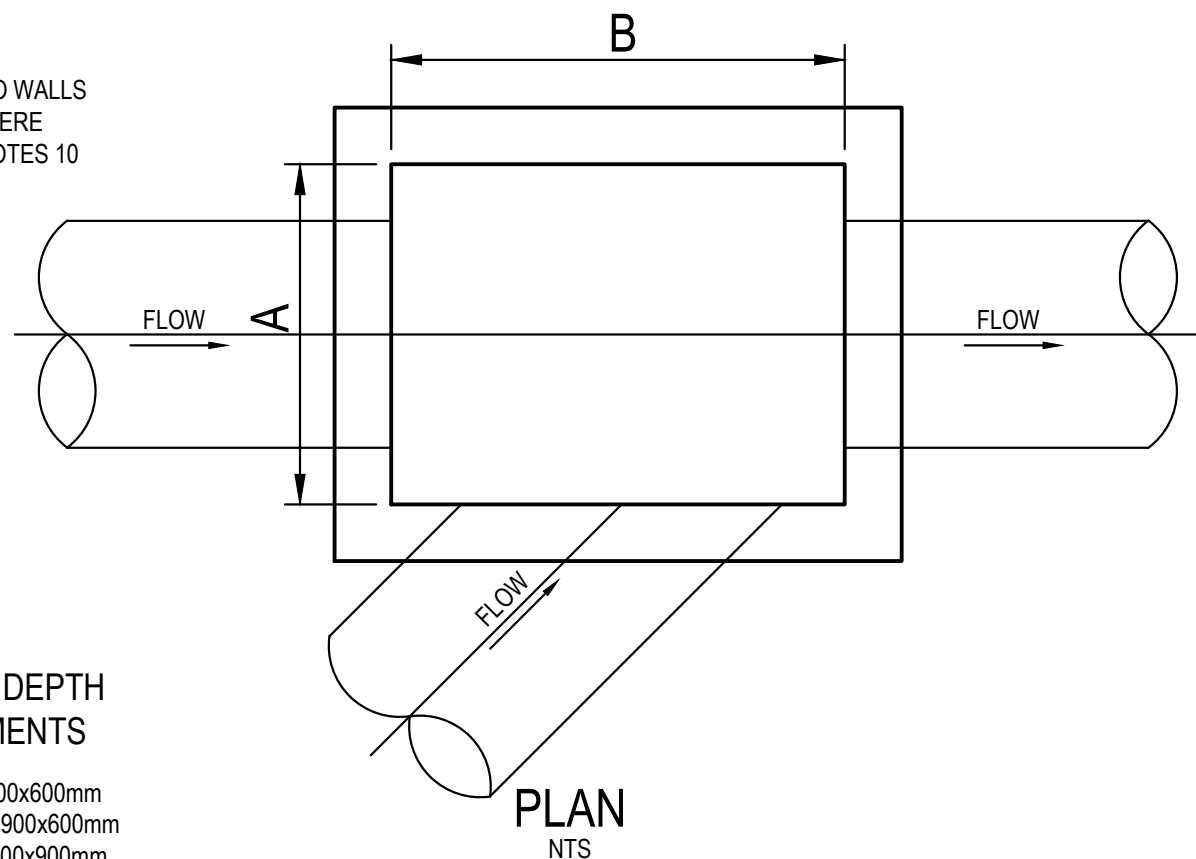


*A = 600 FOR PIPES UP TO 375 DIA.

- PIT CHAMBER DIMENSIONS FOR PIPES UP TO 600 DIA.

PIT SIZE & DEPTH REQUIREMENTS

H = 0-900mm - Ax B = 600x600mm
H = 900-1200mm - Ax B = 900x600mm
H = >1200mm - Ax B = 900x900mm



- PIT CHAMBER FOR SIDE ENTRY ON SKEW

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

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

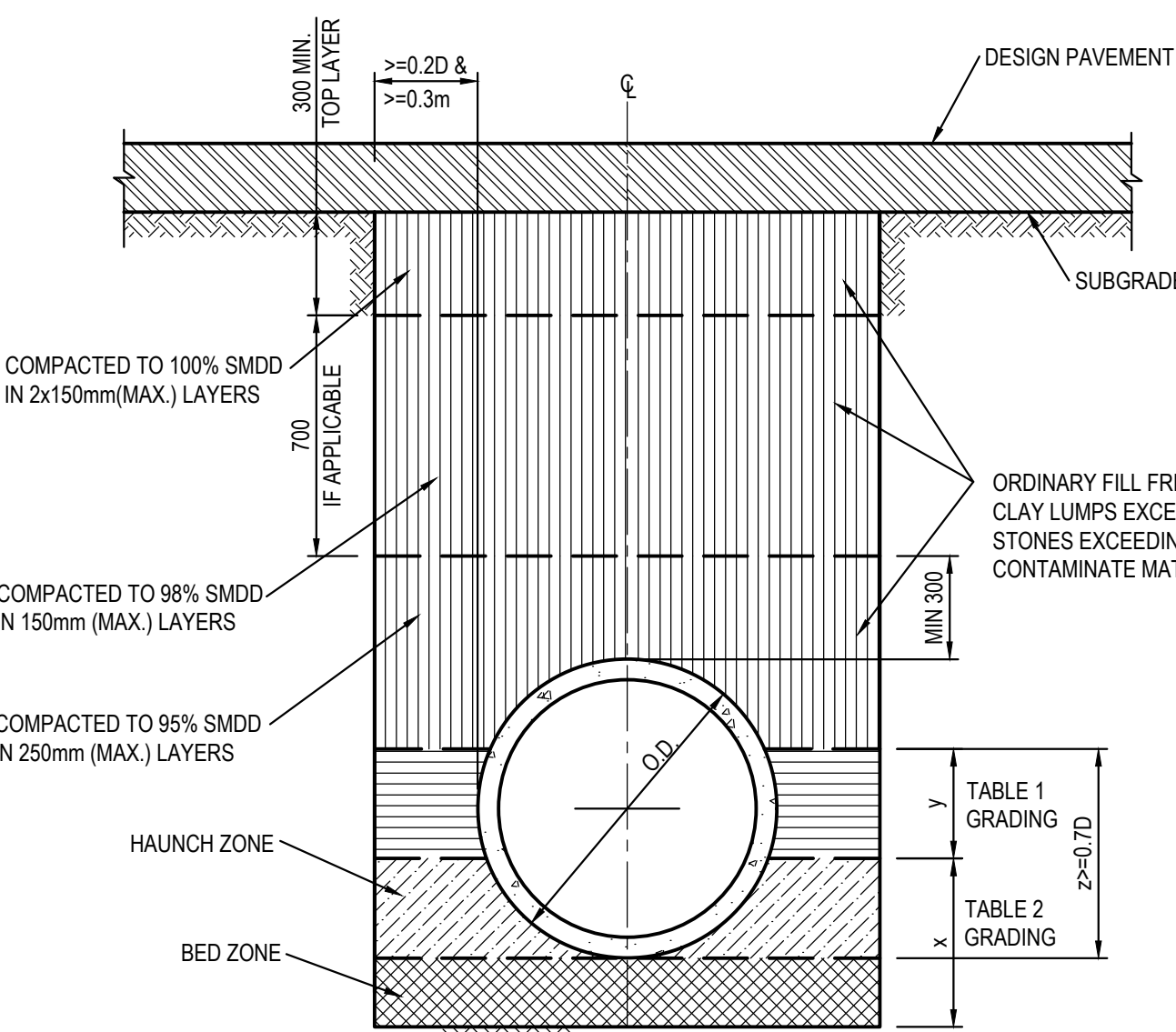
TABLE 3				
SUPPORT TYPE	BED ZONE X	HAUNCH ZONE Y	BED AND HAUNCH ZONES COMPACTION	MAX BEDDING FACTOR
HS1		0.1D	50	2.0
HS2	100 IF D<=1500, OR 150 IF D>=1500	0.3D	60	2.5
HS3		0.3D	70	4.0

DRAINAGE NOTES:

- ALL STORMWATER WORK TO COMPLY WITH AS 3500 PART 3.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE MINIMUM COVER OF 600mm ON ALL PIPES.
- PROTECTION OF PIPES DUE TO LOADS EXCEEDING W7 WHEEL LOAD SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- BEDDING TYPE SHALL BE TYPE H2 FOR RCP. WHERE NECESSARY THE OVERLAY ZONE SHALL BE REDUCED TO ACCOMMODATE PAVEMENT REQUIREMENTS. REFER TO THIS DRAWING FOR DETAILS.
- MINIMUM COVER OVER EXISTING PIPES FOR PROTECTION DURING CONSTRUCTION SHALL BE 800mm.
- NO CONSTRUCTION LOADS SHALL BE APPLIED TO PLASTIC PIPES.
- FINISHED SURFACE LEVELS SHOWN ON LAYOUT PLAN DRGS TAKE PRECEDENCE OVER DESIGN DRAINAGE SURFACE LEVELS.
- ALL PIPES UP TO AND INCLUDING 300 DIA. SHALL BE SOLVENT OR RUBBER RING JOINTED PVC CLASS SH PIPE TO AS1260. ALL OTHER PIPES TO BE RCP USING CLASS 2 RUBBER RING JOINTED PIPE. HARDIES FRC PIPE MAY BE USED IN LIEU OF RCP IF DESIRED IN GROUND. ALL AERIAL PIPES TO BE PVC CLASS SH.
- ALL PITS IN NON TRAFFICABLE AREAS TO BE PREFABRICATED POLYESTER CONCRETE "POLYCRETE" WITH "LIGHT DUTY" CLASS B GALV. MILD STEEL GRATING AND FRAME. ALL PITS IN TRAFFICABLE AREAS (CLASS "D" LOADING MAX) TO HAVE 150mm THICK CONCRETE WALLS AND BASE CAST IN-SITU f_{ck} =32 MPa, REINFORCED WITH N12-200 BOTH LOADING WAYS CENTRALLY PLACE. U.N.O. ON SEPARATE DESIGN DRAWINGS IN THIS SET. GALV.MILD STEEL GRATING AND FRAME TO SUIT DESIGN LOADING. PRECAST PITS, RECTANGULAR OR CIRCULAR IN SHAPE, MAY BE USED IN LIEU AND SHALL COMPLY WITH RELEVANT AUSTRALIAN STANDARDS.
- ALL PITS, GRATINGS AND FRAMES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND TO BE IN ACCORDANCE WITH AS3500.3 AND AS3996.
- PIT CHAMBER DIMENSIONS ARE TO BE SELECTED TO SATISFY THE FOLLOWING:
- PIPE SIZE
- DEPTH TO INVERT
- SKEW ANGLE
REFER TYPICAL PIT CHAMBER DETAILS BELOW
IF PIT LID SIZE IS SMALLER THAN THE PIT CHAMBER SIZE THEN THE PIT LID IS TO BE CONSTRUCTED ON THE CORNER OF THE PIT CHAMBER WITH THE STEP IRONS DIRECTLY BELOW. ALTERNATIVELY THE PIT LID TO BE USED, IS TO BE THE SAME SIZE AS THE PIT CHAMBER.
- FOR PIPE SIZES GREATER THAN Ø300mm, PIT FLOOR IS TO BE BENCHED TO FACILITATE FLOW.
- GALVANISED STEP IRONS SHALL BE PROVIDED AT 300 CTS FOR PITS HAVING A DEPTH EXCEEDING 1200mm. SUBSOIL DRAINAGE PIPE SHALL BE PROVIDED IN PIPE TRENCHES ADJACENT TO INLET PIPES. (MINIMUM LENGTH 3m).
- ALL SUBSOIL PIPES SHALL BE 100mm SLOTTED PVC IN A FILTER SOCK, UNO, WITH 3m INSTALLED UPSTREAM OF ALL PITS.
- ALL PIPEWORK SHALL HAVE MINIMUM DIAMETER 100.
- MINIMUM GRADE FOR ROOFWATER DRAINAGE LINES SHALL BE 1%.
- ALL PIPE JUNCTIONS AND TAPER UP TO AND INCLUDING 300 DIA. SHALL BE VIA PURPOSE MADE FITTINGS.
- ALL ROOF DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH AS3500, PART 3. TESTING TO BE UNDERTAKEN AND REPORTS PROVIDED TO THE SUPERINTENDENT.
- LOCATION OF THE DIRECT DOWN PIPE CONNECTIONS MAY VARY ON SITE TO SUIT SITE CONDITIONS, WHERE CONNECTION SHOWN ON LONG SECTIONS CHAINAGES ARE INDICATIVE ONLY.
- PITS IN EXCESS OF 1.5 m DEEP TO HAVE WALL AND FLOOR THICKNESS INCREASED TO 200mm. REINFORCED WITH N12@200 CTS CENTRALLY PLACED BOTH WAYS THROUGHOUT U.N.O.ON SEPARATE DESIGN DRAWINGS IN THIS SET. IF DEPTH EXCEEDS 5m CONTACT ENGINEER.
- SUBSOIL DRAINAGE LINES FOR LANDSCAPE AREA NOT SHOWN ON THESE DRAWINGS. REFER TO LANDSCAPING PLANS FOR DETAILS.
- ALL STORMWATER PITS TO HAVE Ø100 uPVC SLOTTED SUBSOIL PIPES CONNECTED TO THEM. THESE SUBSOILS TO EXTEND 3m UPSTREAM OF THE PIT AT A MINIMUM GRADE.

PIT LID SCHEDULE

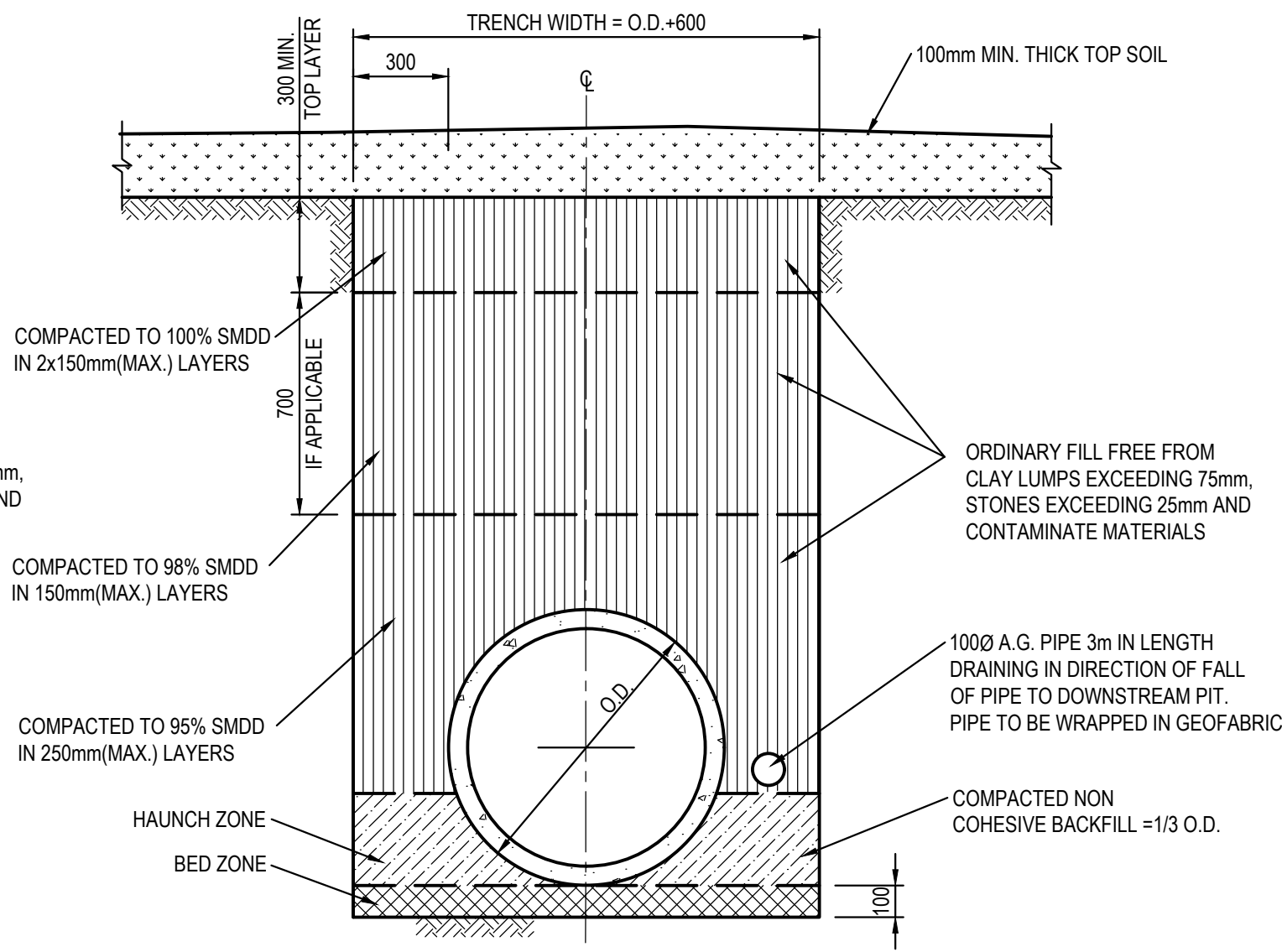
PIT/STRUCTURE NUMBER	DESCRIPTION
(A-1) (B-3) (D-1) (E-1)	PROPOSED JUNCTION PIT WITH 900x900 HINGED HEAVY DUTY CONCRETE LID CLASS "D" IN ACCORDANCE WITH PENRITH CITY COUNCIL REQUIREMENT.
(A-2) (A-3) (A-5) (C-3) (C-4) (C-5) (C-4a) (A-2a)	PROPOSED SAG KERB INLET PIT WITH 1.8m LINTEL AND HEAVY DUTY GRATED LID CLASS "D" IN ACCORDANCE WITH PENRITH CITY COUNCIL REQUIREMENT
(A-4) (C-2)	ON GRADE KERB INLET PIT WITH 1.8m LINTEL AND HEAVY DUTY GRATED LID CLASS "D" IN ACCORDANCE WITH PENRITH CITY COUNCIL REQUIREMENT.
(A-5) (A-6) (A-7) (A-8) (A-9) (A-10) (A-11) (A-12) (A-13) (A-14) (C-1) (C-6) (C-7) (C-8) (G-1) (G-2) (G-3)	PROPOSED 900x900 SURFACE INLET PIT WITH GRATED HEAVY DUTY LID CLASS "D" IN ACCORDANCE WITH PENRITH CITY COUNCIL REQUIREMENT.
(B-1) (B-2)	RWT TANK ACCESS OPENING WITH 900x900 HINGED MEDIUM DUTY SEALED CONCRETE LID CLASS "C" IN ACCORDANCE WITH PENRITH CITY COUNCIL REQUIREMENT.
(GD-1) (GD-2) (GD-3)	200mm WIDE HEAVY DUTY GRATED DRAIN AND MEDIUM DUTY FRAME CLASS "D" IN ACCORDANCE WITH PENRITH CITY COUNCIL REQUIREMENT.
(F-1) (F-2) (F-3) (G-4)	PROPOSED 600x600 SURFACE INLET PIT WITH GRATED HEAVY DUTY LID CLASS "D" IN ACCORDANCE WITH PENRITH CITY COUNCIL REQUIREMENT.



PIPE TRENCH INSTALLATION BENEATH PAVEMENT

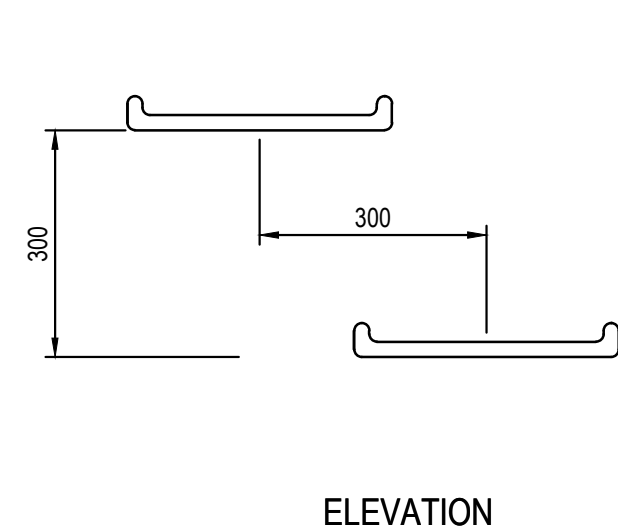
(HS SUPPORT TO BE USED UNDER ROADWAY)
SCALE 1:20

NOTE:
TYPE HS2 TO BE USED AS A TYPICAL SUPPORT FOR TRENCHES UNDER ROADWAY UNLESS SPECIFIED SEPERATELY



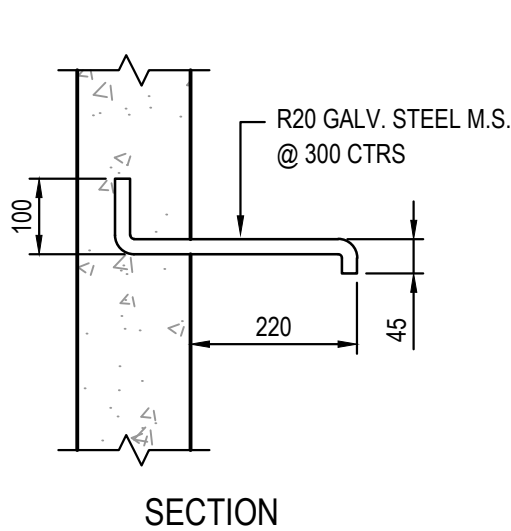
PIPE TRENCH INSTALLATION IN LANDSCAPE AREAS

(H1 & H2 SUPPORT)
SCALE 1:20



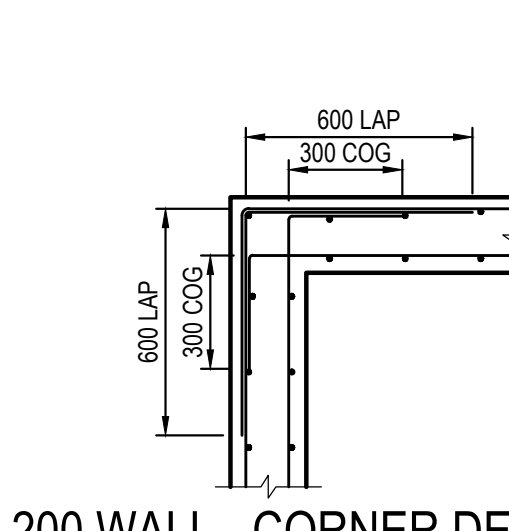
TYPICAL STEP IRON DETAIL

SCALE 1:10



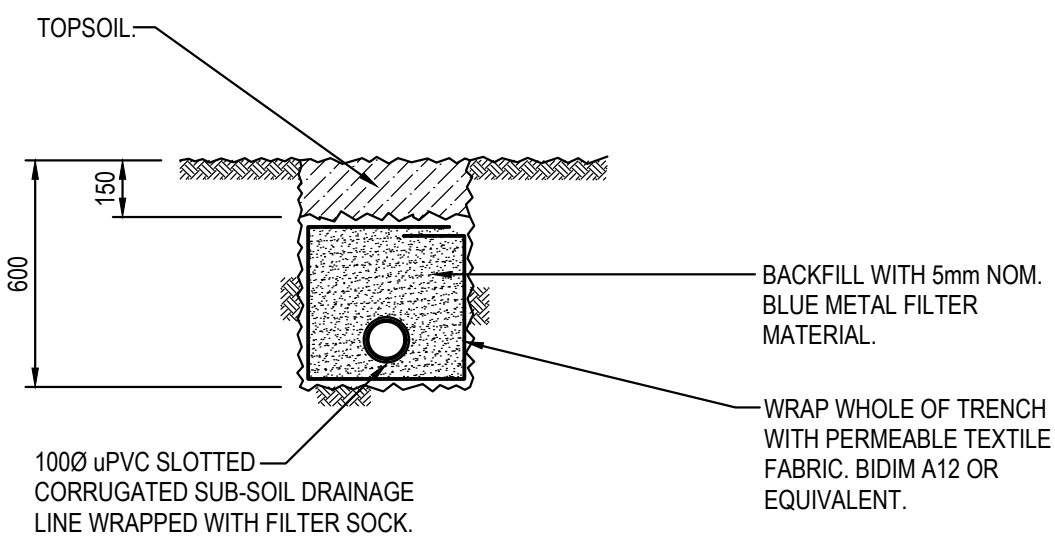
150 WALL - CORNER DETAIL

SCALE 1:20



200 WALL - CORNER DETAIL

SCALE 1:20



SUB-SOIL DRAIN DETAIL

SCALE 1:20

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY BOXALL
DATUM: AHD
ORIGIN OF LEVELS: PM 33569, RL37.732

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	MC	NH	18.06.2021					
02	ISSUED FOR DA ONLY	MC	NH	01.06.2021					
01	ISSUED FOR DA ONLY	MC	NH	06.05.2021					

Client
SNACKBRANDS
Architect
HLA ARCHITECTS

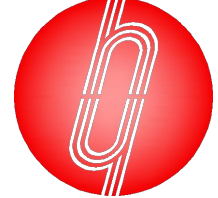
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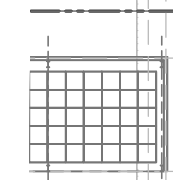


Project
PROPOSED FOOD MANUFACTURING FACILITY ORCHARD HILLS 2748 NSW



Drawn
M.Cerna
Designed
N.Heazlewood
Approved
A.Francis
Title
STORMWATER MISCELLANEOUS DETAILS AND PIT LID SCHEDULE

Date
APR 21
Scale (B1)
AS NOTED
Drawing number
21C51_DA_C200
Revision
03



DISTRIBUTION DRIVE

PROPOSED DISCHARGE POINT #2 -

- 

ROOF AREA DIRECTED TO PROPOSED 50KL RAINWATER TANK
A = 2932 m²
- 

ROOF AREA DIRECTED TO DISCHARGE POINT #2
A = 13828 m²
- 

HARDSTAND/LANDSCAPING AREA DIRECTED TO DISCHARGE POINT #2
A = 19716 m²
- 

AREA TO BE DIRECTED TO DISCHARGE POINT #1 (MATCHING CURRENT CATCHMENT)
A = 3367 m²
- 

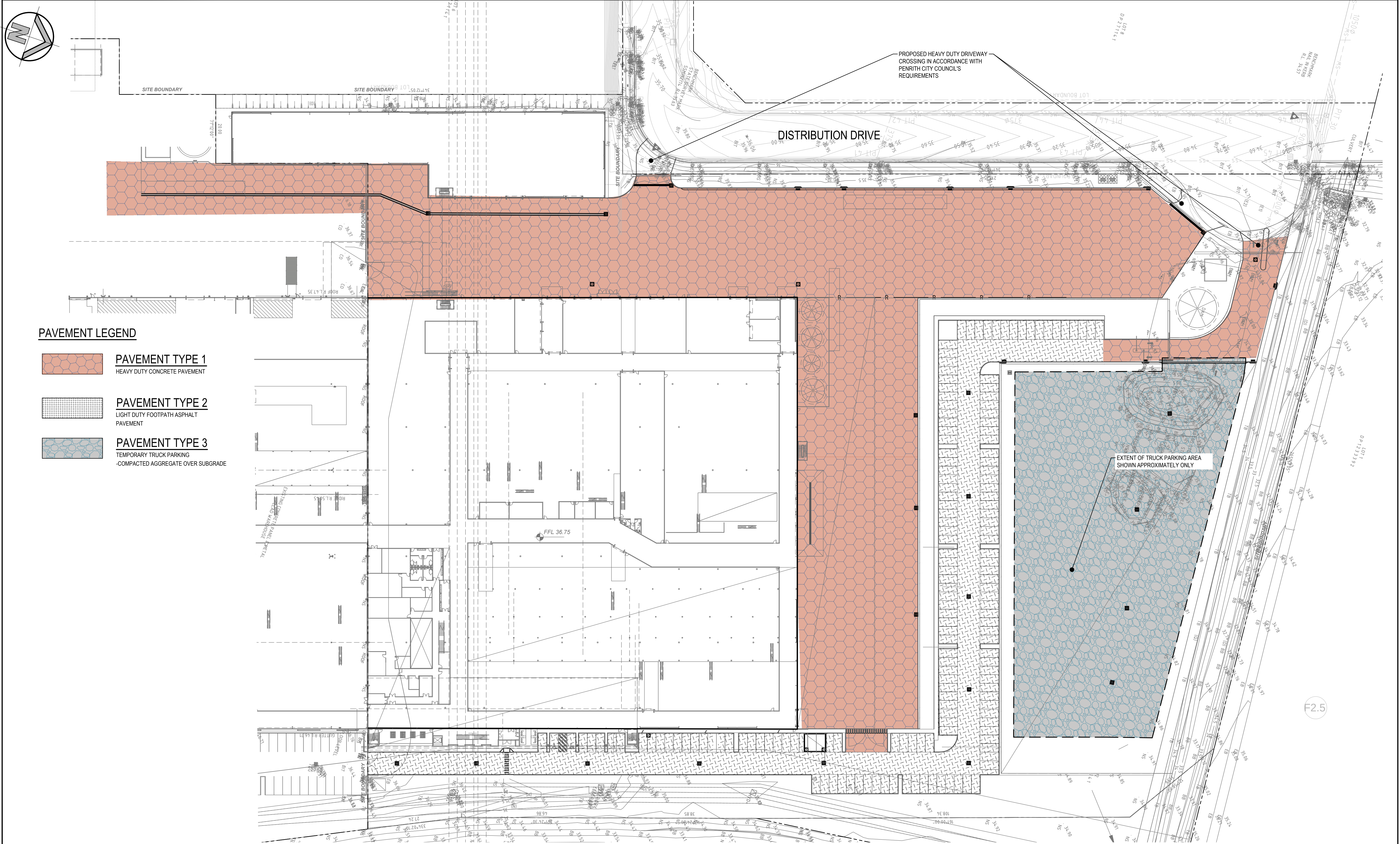
PERVIOUS AREA TO BE DIRECTED TO DISCHARGE POINT #2
A = 7200 m²

2932m² ROOF AREA DIRECTED TO PROPOSED 50kL RAINWATER TANK. TO BE USED FOR TOILET REUSE AND IRRIGATION PURPOSES

RAINWATER TANK TO CONNECT TO
PROPOSED STORMWATER
DRAINAGE

FOR DA ONLY

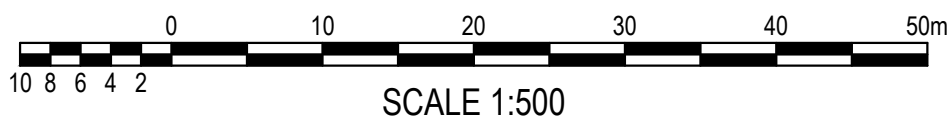
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PAVEMENT LEGEND

- PAVEMENT TYPE 1**
HEAVY DUTY CONCRETE PAVEMENT
- PAVEMENT TYPE 2**
LIGHT DUTY FOOTPATH ASPHALT PAVEMENT
- PAVEMENT TYPE 3**
TEMPORARY TRUCK PARKING
-COMPACTED AGGREGATE OVER SUBGRADE

PAVEMENT PLAN
SCALE: 1:500



SURVEY INFORMATION
SURVEYED BY BOXALL
DATUM: AHD
ORIGIN OF LEVELS: PM 33569, RL37.732

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	MC	NH	01.07.2021					
01	ISSUED FOR DA ONLY	MC	NH	18.06.2021					

Client
SNACKBRANDS

Architect
HLA ARCHITECTS

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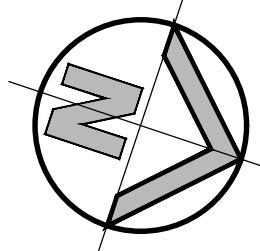
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Project
PROPOSED FOOD MANUFACTURING FACILITY ORCHARD HILLS 2748 NSW

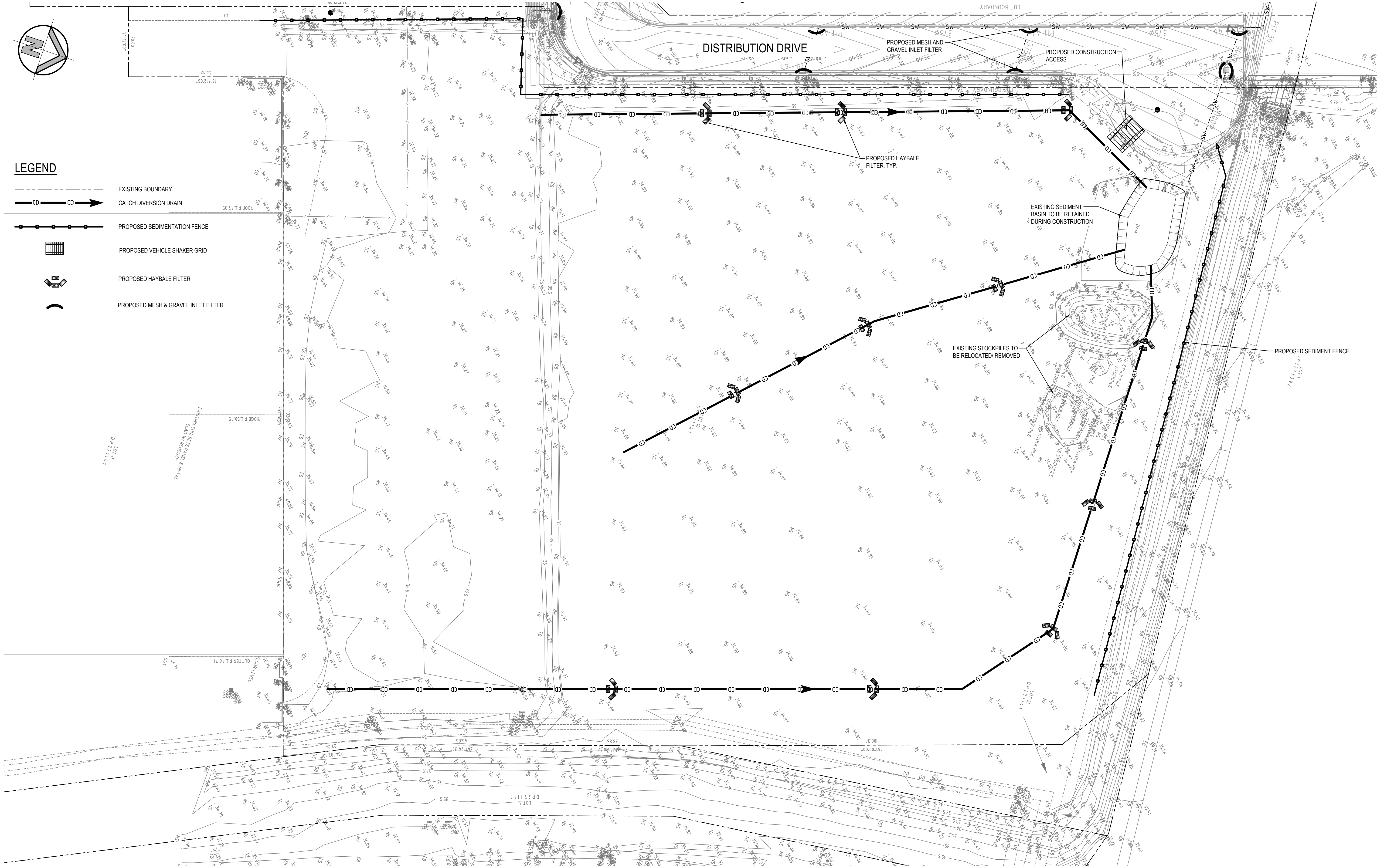
Title
PAVEMENT PLAN

Drawn M.Cerna	Designed N.Heazlewood	Date APR 21
Checked N.Heazlewood	Approved A.Francis	Scale @A1 1:500
Drawing number 21C51_DA_C500		Revision 02



LEGEND

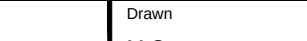
- EXISTING BOUNDARY
- CATCH DIVERSION DRAIN
- PROPOSED SEDIMENTATION FENCE
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED HAYBALE FILTER
- PROPOSED MESH & GRAVEL INLET FILTER

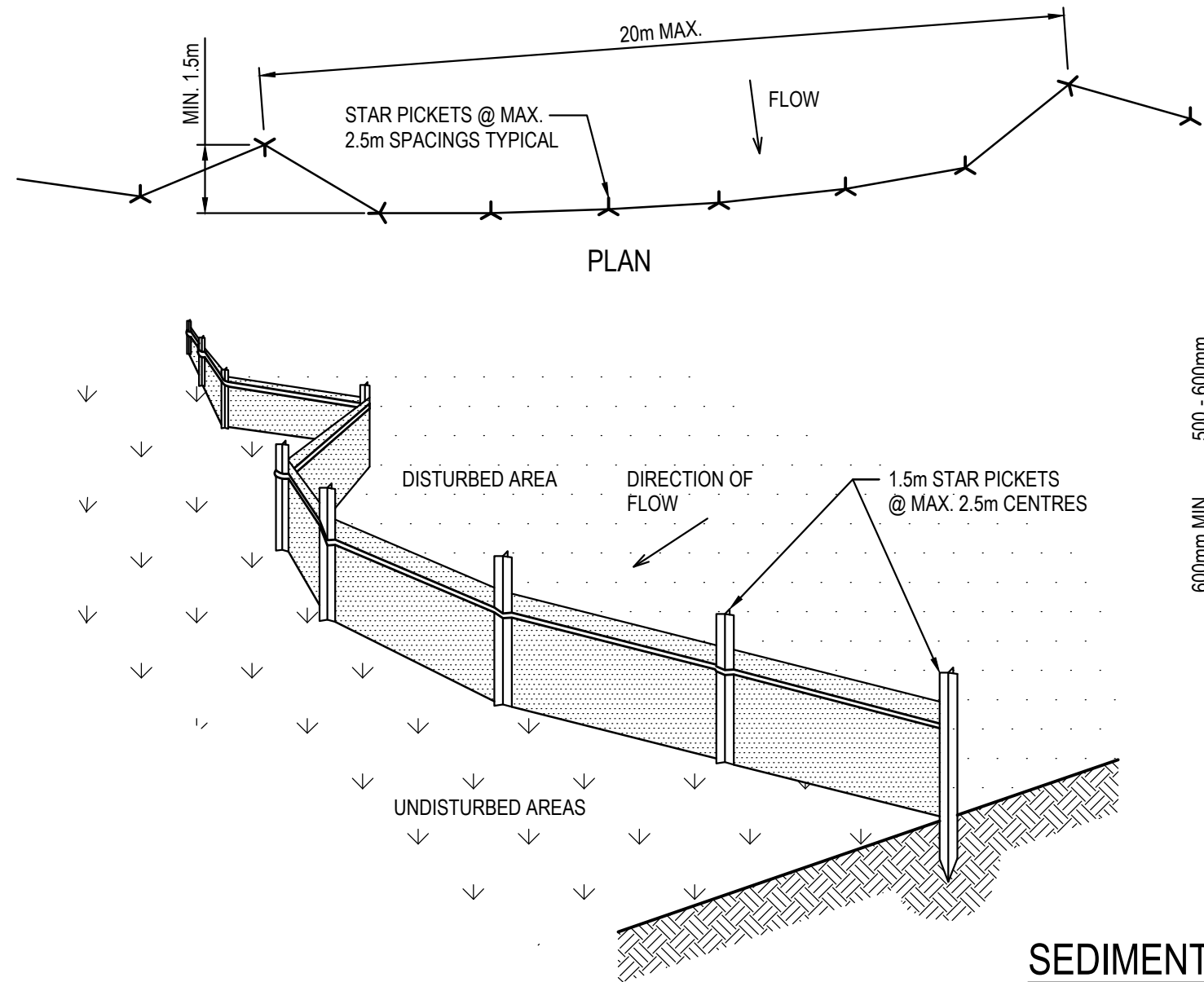


SEDIMENT AND EROSION CONTROL PLAN
SCALE: 1:500



FOR DA ONLY

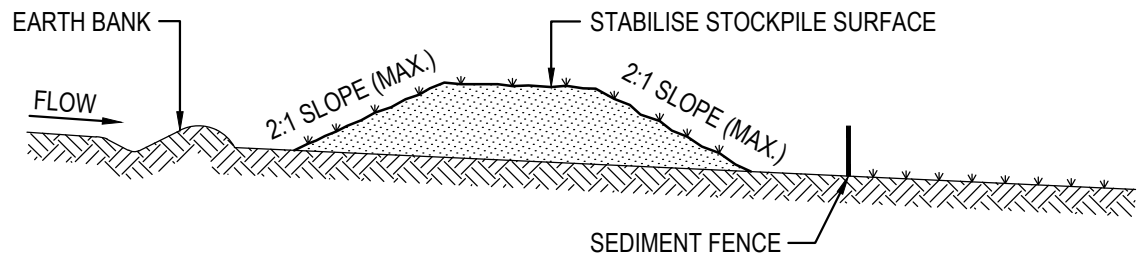
SURVEY INFORMATION SURVEYED BY BOXALL DATUM: AHD ORIGIN OF LEVELS: PM 33569, RL 37.732																Client SNACKBRANDS Architect HLA ARCHITECTS This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without the prior written approval of Henry & Hymas.				Suite 2.01 828 Pacific Highway Gordon NSW 2072 				Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhconsult.com.au Web www.henryandhymas.com.au				 henry&hymas				Project PROPOSED FOOD MANUFACTURING FACILITY ORCHARD HILLS 2748 NSW Title SEDIMENT AND EROSION CONTROL PLAN				Drawn M.Cerna Designed N.Heazlewood Checked N.Heazlewood Approved A.Francis Drawing number 21C51_DA_SE01 Revision 01		Date APR 21 Scale @A1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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SEDIMENT FENCE
SCALE N.T.S.

SEDIMENT FENCE CONSTRUCTION NOTES:

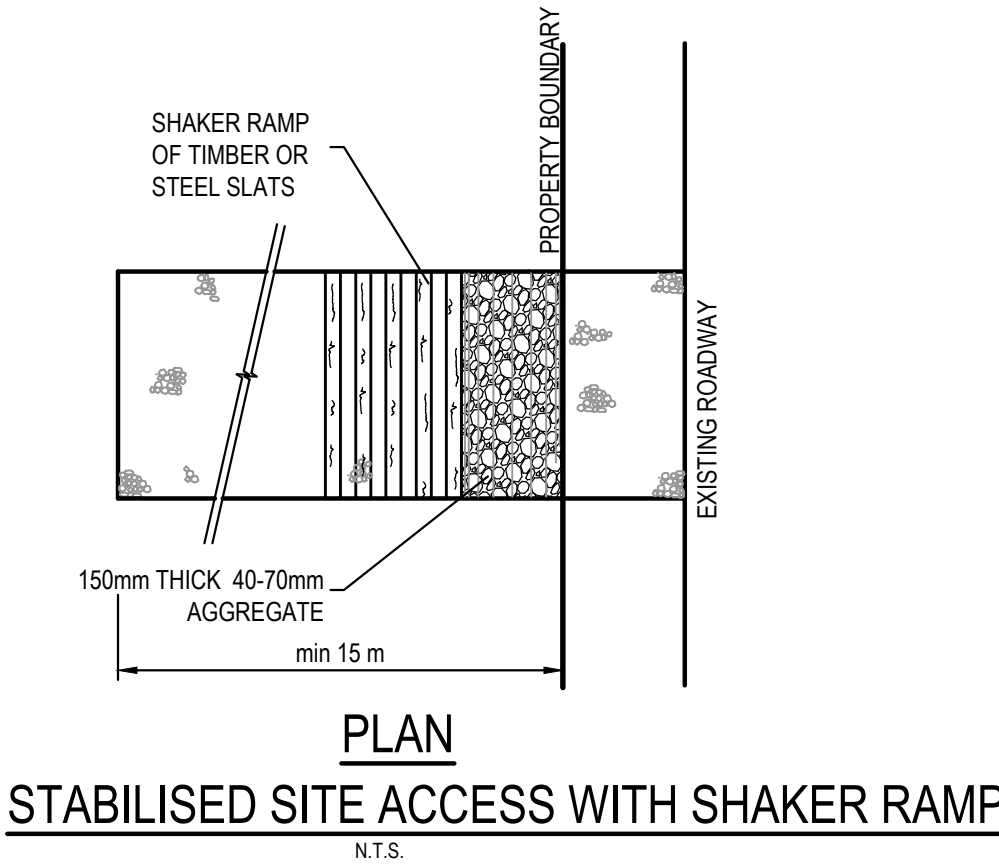
1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND @ 2.5m INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP. 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.



STOCKPILE CONSTRUCTION NOTES:

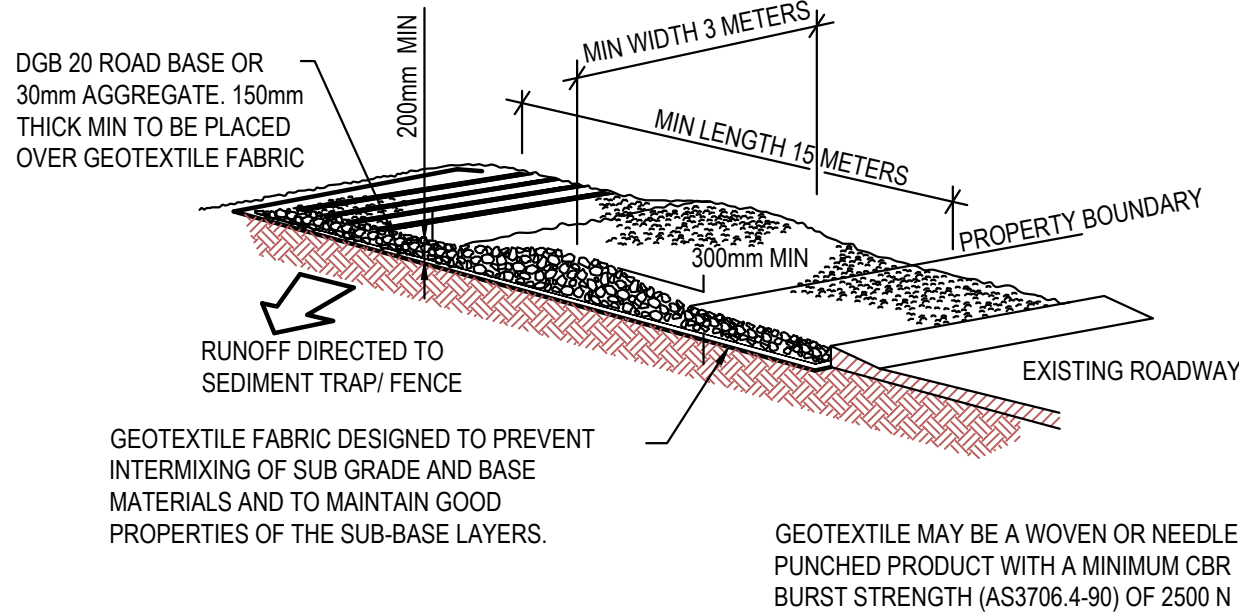
1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE PLACED FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED E.S.C.P. OR S.W.M.P. TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

STOCKPILES
SCALE N.T.S.



STABILISED SITE ACCESS WITH SHAKER RAMP
N.T.S.

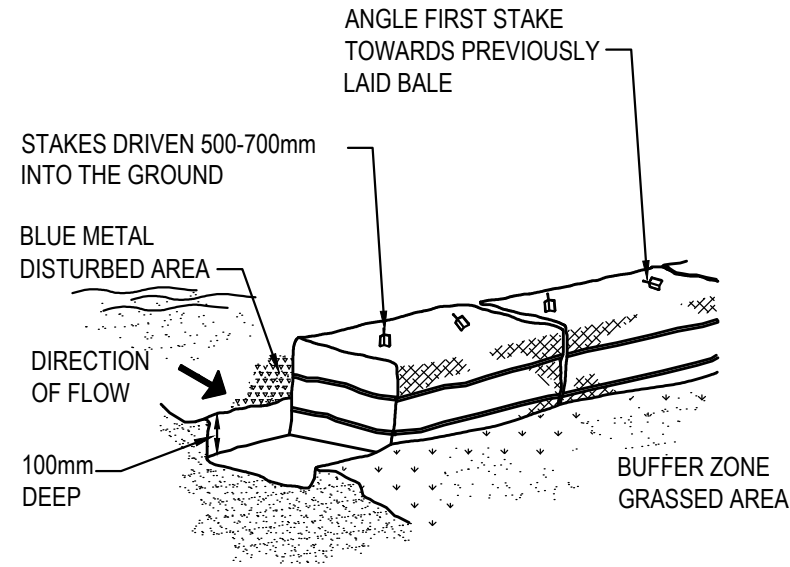
CONSTRUCTION SITE



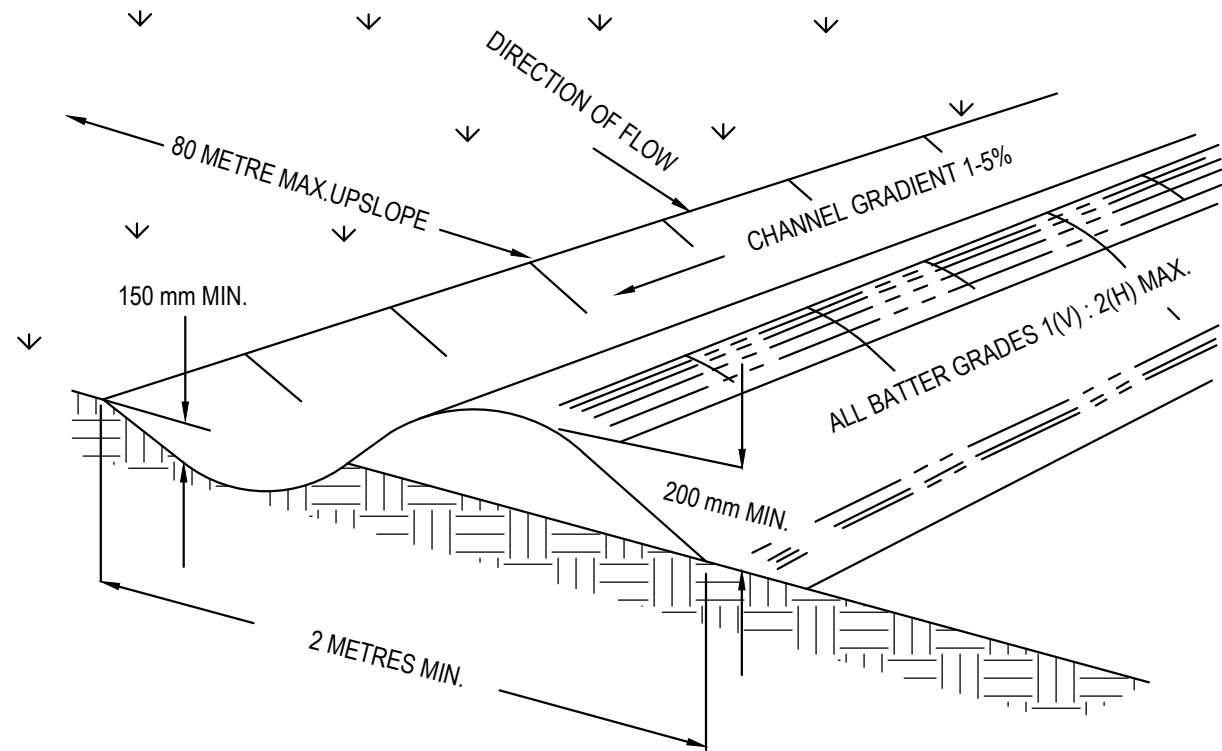
STABILISED SITE ACCESS WITH SHAKER RAMP
N.T.S.

NOTES:

1. THIS DEVICE IS TO BE LOCATED AT ALL EXITS FROM CONSTRUCTION SITE.
2. THIS DEVICE IS TO BE REGULARLY CLEANED OF DEPOSITED MATERIAL SO AS TO MAINTAIN A 50mm DEEP SPACE BETWEEN PLANKS.
3. ANY UNSEALED ROAD BETWEEN THIS DEVICE AND NEAREST ROADWAY IS TO BE TOPPED WITH 100mm THICK 40-70mm SIZE AGGREGATE.
4. ALTERNATIVELY, THREE(3) PRECAST CONCRETE CATTLE GRIDS (AS MANUFACTURED BY *HUMES CONCRETE MAY BE USED. 1, 2 & 3 ABOVE ALSO APPLY.



HAYBALE BARRIERS
N.T.S.

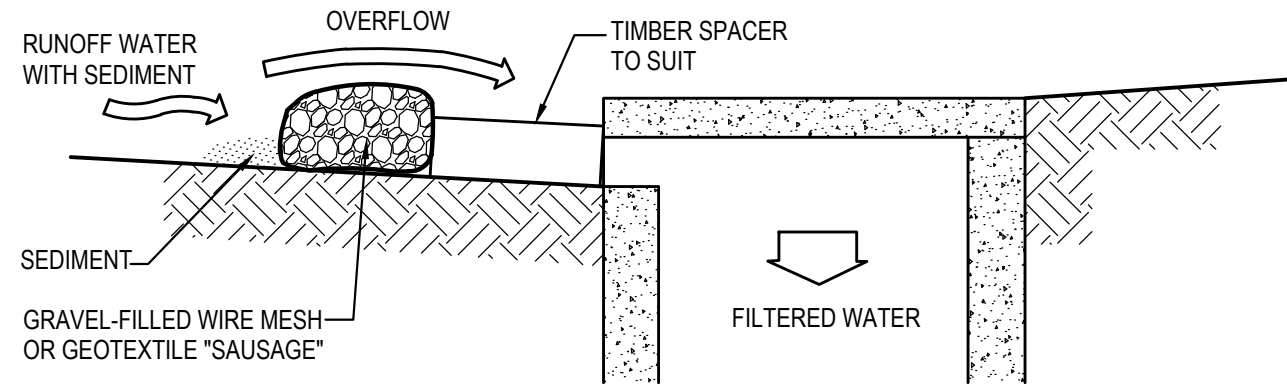
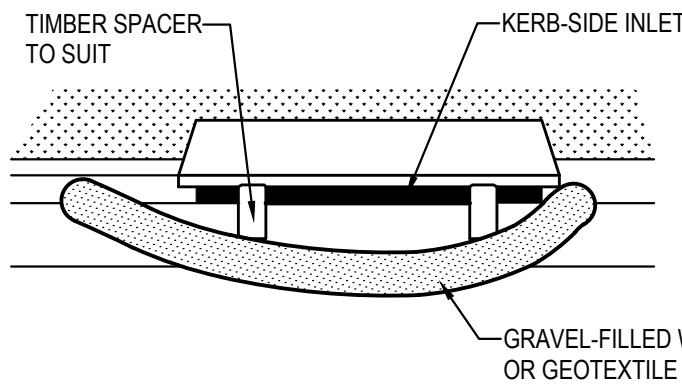


NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAC UPSLOPE LENGTH IS 80 METERS.

CATCH DRAIN CONSTRUCTION NOTES:

1. CONSTRUCT ALONG GRADIENT AS SPECIFIED.
2. MAXIMUM SPACING BETWEEN BANKS SHALL BE 80 METRES.
3. DRAINS TO BE OF PARABOLIC OR TRAPEZOIDAL CROSS SECTION NOT V-SHAPED.
4. EARTH BANKS TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
5. CONSTRUCTION IS OF A TEMPORARY NATURE AND SHALL BE COMPACTED AT THE END A DAYS WORK OR IMMEDIATELY PRIOR RAIN.
6. ALL OUTLETS FROM DISTURBED LANDS ARE TO FEED INTO SEDIMENT BASIN OR SIMILAR.
7. DISCHARGE RUNOFF COLLECTED FROM UNDISTURBED LANDS ONTO EITHER A STABILISED OR AN UNDISTURBED DISPOSAL AISTE WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED.
8. COMPACT WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS.
9. EARTH BANKS TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.

CATCH DRAINS
SCALE N.T.S.



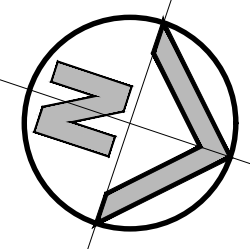
MESH & GRAVEL INLET FILTER CONSTRUCTION NOTES:

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

MESH & GRAVEL INLET FILTER
SCALE N.T.S.

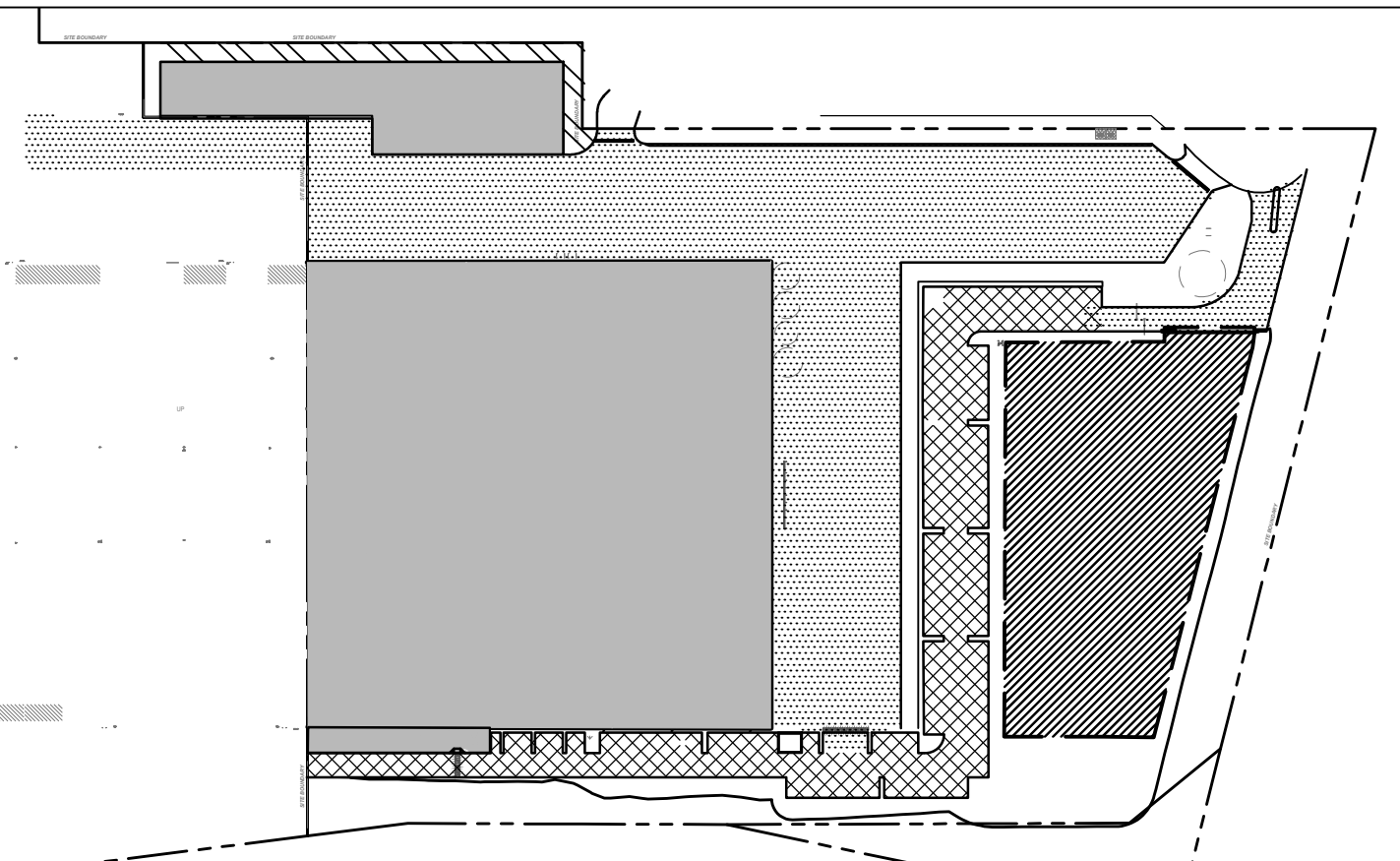
FOR DA ONLY

SURVEY INFORMATION SURVEYED BY BOXALL DATUM: AHD ORIGIN OF LEVELS: PM 33569, RL37.732																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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CUT & FILL DEPTH RANGE			Colour
Lower_value	Upper_value		
-3.0	to	-2.0	m
-2.0	to	-1.8	m
-1.8	to	-1.6	m
-1.6	to	-1.4	m
-1.4	to	-1.2	m
-1.2	to	-1.0	m
-1.0	to	-0.8	m
-0.8	to	-0.6	m
-0.6	to	-0.4	m
-0.4	to	-0.2	m
-0.2	to	0.00	m
0.000	to	0.2	m
0.2	to	0.4	m
0.4	to	0.6	m
0.6	to	0.8	m
0.8	to	1.0	m
1	to	1.2	m
1.2	to	1.4	m
1.4	to	9999	m

OVERALL EARTHWORKS QUANTITIES	
CUT	2,750 m³
FILL	33,082 m³
EXCESS OF FILL	30,332 m³
- EARTHWORKS QUANTITIES ARE PRELIMINARY ONLY. 100 mm TOPSOIL STRIPPING NOT INCLUDED IN ABOVE CALCULATIONS - EXCAVATION FOR SERVICE TRENCHES OR FOOTINGS NOT INCLUDED IN ABOVE CALCULATIONS 250mm PAVEMENT SET DOWN FOR BUILDING SLAB 280mm PAVEMENT SET DOWN FOR EXTERNAL SLABS 280mm PAVEMENT SET DOWN FOR CAR PARK AND MINOR ROAD 150mm LANDSCAPING SET DOWN 400mm FOR TRUCK SET DOWN AREA	



PAVEMENT LIMIT PLAN
SCALE: 1:2000

BULK EARTHWORKS GENERAL NOTES

A QUALIFIED GEOTECHNICAL ENGINEER IS TO PROVIDE FINAL ADVISE ON TEMPORARY BATTERS, EXISTING GROUND CONDITIONS, SITE TREATMENT AS WELL AS UNDERTAKE SUPERVISION.

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM SURVEY AND AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.

HENRY AND HYMAS CANNOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS, ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN ARISING FROM ANY CAUSE WHATSOEVER.

CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION.

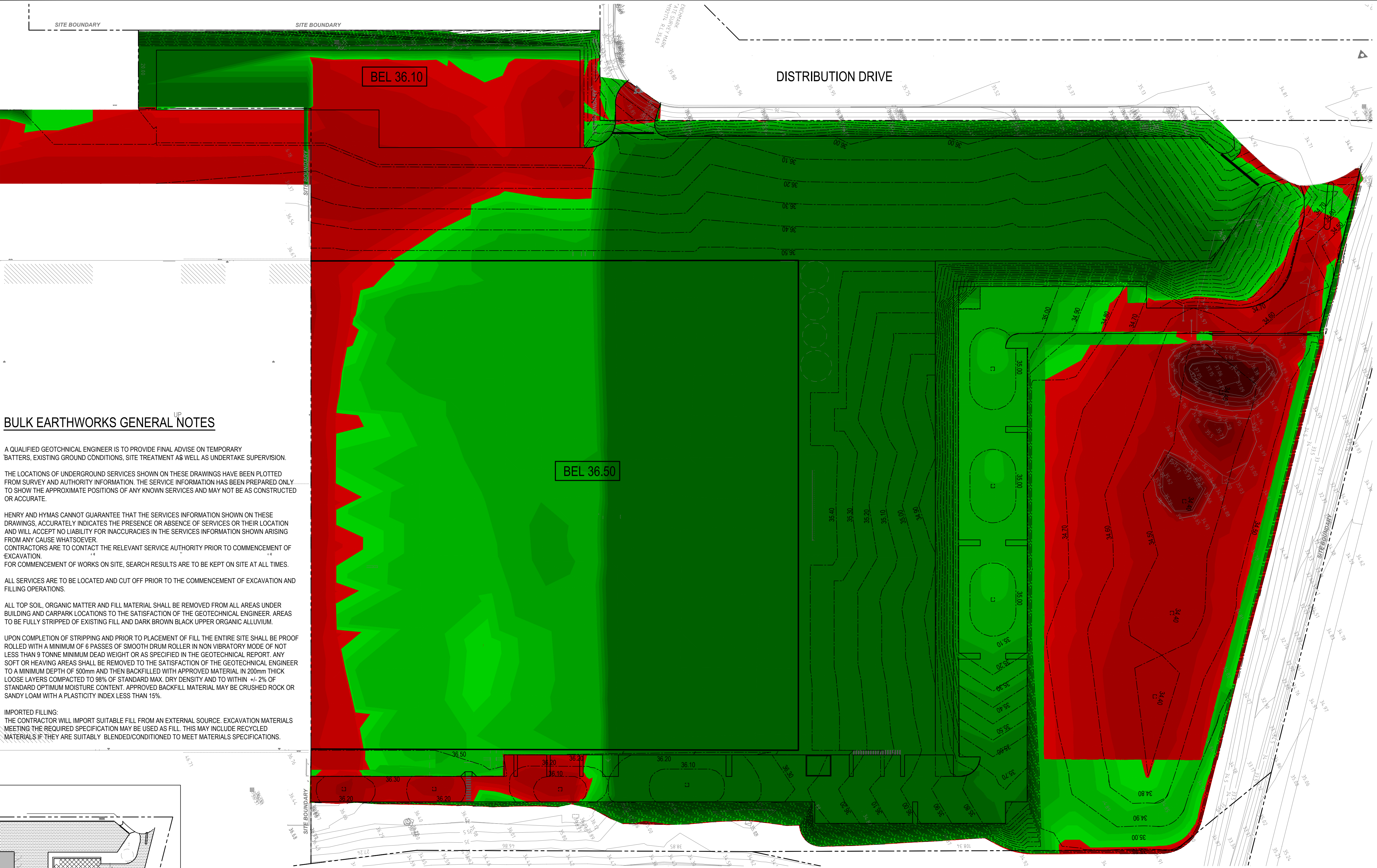
FOR COMMENCEMENT OF WORKS ON SITE, SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

ALL SERVICES ARE TO BE LOCATED AND CUT OFF PRIOR TO THE COMMENCEMENT OF EXCAVATION AND FILLING OPERATIONS.

ALL TOP SOIL, ORGANIC MATTER AND FILL MATERIAL SHALL BE REMOVED FROM ALL AREAS UNDER BUILDING AND CARPARK LOCATIONS TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER. AREAS TO BE FULLY STRIPPED OF EXISTING FILL AND DARK BROWN BLACK UPPER ORGANIC ALLUVIUM.

UPON COMPLETION OF STRIPPING AND PRIOR TO PLACEMENT OF FILL THE ENTIRE SITE SHALL BE PROOF ROLLED WITH A MINIMUM OF 6 PASSES OF SMOOTH DRUM ROLLER IN NON VIBRATORY MODE OF NOT LESS THAN 9 TONNE MINIMUM DEAD WEIGHT OR AS SPECIFIED IN THE GEOTECHNICAL REPORT. ANY SOFT OR HEAVING AREAS SHALL BE REMOVED TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER TO A MINIMUM DEPTH OF 500mm AND THEN BACKFILLED WITH APPROVED MATERIAL IN 200mm THICK LOOSE LAYERS COMPACTED TO 98% OF STANDARD MAX. DRY DENSITY AND TO WITHIN +/- 2% OF STANDARD OPTIMUM MOISTURE CONTENT. APPROVED BACKFILL MATERIAL MAY BE CRUSHED ROCK OR SANDY LOAM WITH A PLASTICITY INDEX LESS THAN 15%.

IMPORTED FILLING:
THE CONTRACTOR WILL IMPORT SUITABLE FILL FROM AN EXTERNAL SOURCE. EXCAVATION MATERIALS MEETING THE REQUIRED SPECIFICATION MAY BE USED AS FILL. THIS MAY INCLUDE RECYCLED MATERIALS IF THEY ARE SUITABLY BLENDED/CONDITIONED TO MEET MATERIALS SPECIFICATIONS.



BULK EARTHWORKS PLAN
SCALE: 1:500



- CAR PARK AND MINOR ROAD
- TRUCK TURNING ROAD
- TRUCK SET DOWN AREA
- BUILDING SLAB
- LANDSCAPING AREA

SURVEY INFORMATION
SURVEYED BY BOXALL
DATUM: AHD
ORIGIN OF LEVELS: PM 33569, RL37.732

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AB	NH	01.07.2021					
03	ISSUED FOR DA ONLY	AB	NH	22.06.2021					
02	ISSUED FOR DA ONLY	MC	NH	01.06.2021					
01	ISSUED FOR DA ONLY	MC	NH	06.05.2021					

Client
SNACKBRANDS

Architect
HLA ARCHITECTS

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Project
PROPOSED FOOD MANUFACTURING FACILITY ORCHARD HILLS 2748 NSW

Title
BULK EARTHWORKS PLAN

Drawn
M.Cerna

Designed
N.Heazlewood

Checked
N.Heazlewood

Approved
A.Francis

Date
APR 21

Scale (BA1)
1:500

Drawing number
21C51_DA_BE01

Revision
04