PROPOSED INDUSTRIAL BUSINESS PARK
LUDDENHAM ROAD ORCHARD HILLS NSW
CIVIL ENGINEERING SUBDIVISION WORKS



LOCALITY SKETCH

SCALE: N.T.S.

DRAWING SCHEDULE	
19221_D2_C000	COVER SHEET, DRAWING SCHEDULE & LOCALITY SKETCH
19221_D2_C010	NOTES
19221_D2_C050	CPCP OVERLAY
19221_D2_C100	GENERAL ARRANGEMENT PLAN
19221_D2_C101	DETAIL PLAN - SHEET 1 OF 6
19221_D2_C102	DETAIL PLAN - SHEET 2 OF 6
19221_D2_C103	DETAIL PLAN - SHEET 3 OF 6
19221_D2_C104	DETAIL PLAN - SHEET 4 OF 6
19221_D2_C105	DETAIL PLAN - SHEET 5 OF 6
19221_D2_C106	DETAIL PLAN - SHEET 6 OF 6
19221_D2_C110	SITE SECTIONS - SHEET 1 OF 5
19221_D2_C111	SITE SECTIONS - SHEET 2 OF 5
19221_D2_C112	SITE SECTIONS - SHEET 3 OF 5
19221_D2_C113	SITE SECTIONS - SHEET 4 OF 5
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19221_D2_C120	ROAD LONGITUDINAL SECTION
19221_D2_C130	TYPICAL ROAD SECTIONS AND LINEMARKING PLAN
19221_D2_C140	OVERALL SITE SECTIONS - SHEET 1 OF 3
19221_D2_C141	OVERALL SITE SECTIONS - SHEET 2 OF 3
19221_D2_C142	OVERALL SITE SECTIONS - SHEET 3 OF 3
19221_D2_C150	TRANSGRID WORKS PLAN
19221_D2_C160	NORTHWEST OUTLET PLAN
19221_D2_C200	STORMWATER MISCELANEOUS DETAILS AND PIT LID SCHEDULE
19221_D2_C201	NORTH-WEST BASIN PLAN
19221_D2_C202	NORTH-EAST BASIN PLAN
19221_D2_C203	SOUTH-EAST BASIN PLAN
19221_D2_C204	BASIN TYPICAL DETAILS
19221_D2_C210	STORMWATER LONGITUDINAL SECTIONS - SHEET 1 OF 8
19221_D2_C211	STORMWATER LONGITUDINAL SECTIONS - SHEET 2 OF 8
19221_D2_C212	STORMWATER LONGITUDINAL SECTIONS - SHEET 3 OF 8
19221_D2_C213	STORMWATER LONGITUDINAL SECTIONS - SHEET 4 OF 8
19221_D2_C214	STORMWATER LONGITUDINAL SECTIONS - SHEET 5 OF 8
19221_D2_C215	STORMWATER LONGITUDINAL SECTIONS - SHEET 6 OF 8
19221_D2_C216	STORMWATER LONGITUDINAL SECTIONS - SHEET 7 OF 8
19221_D2_C217	STORMWATER LONGITUDINAL SECTIONS - SHEET 8 OF 8
19221_D2_C230	CDS UNIT TYPICAL DETAILS, SHEET 1 OF 2
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19221_D2_C250	PRE-DEVELOPED CATCHMENT PLAN
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19221_D2_C500	PAVEMENT PLAN - SHEET 1 OF 2
19221_D2_C501	PAVEMENT PLAN - SHEET 2 OF 2
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19221_D2_C503	COUNCIL STANDARD DETAILS - SHEET 1 OF 2
19221_D2_C504	COUNCIL STANDARD DETAILS - SHEET 2 OF 2
19221_D2_C650	TURNING PATHS SHEET 1 OF 2
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19221_D2_SE01	SEDIMENT AND EROSION CONTROL - PLAN SHEET 1 OF 2
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19221_D2_SE03	SEDIMENT AND EROSION CONTROL TYPICAL DETAILS
19221_D2_BE01	BULK EARHTWORKS CUT AND FILL PLAN

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
06	ISSUED FOR DA ONLY	MS	NH	24.09.2024
05	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
04	ISSUED FOR DA ONLY	AFe	NH	01.03.2024
03	ISSUED FOR DA ONLY	MS	NH	17.10.2023
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
COVER SHEET, DRAWING SCHEDULE,
& LOCALITY SKETCH

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	N.T.S.

Drawing number
19221_D2_C000

Revision
06

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 CONTRACTORS EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY OR AS DETERMINED FROM SERVICE DIAGRAMS. H & H CONSULTING ENGINEERS PTY. LTD CANNOT GUARANTEE THE INFORMATION SHOWN NOR ACCEPT ANY RESPONSIBILITY FOR INACCURACIES OR INCOMPLETE DATA.
4. SERVICES & ACCESSES 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.

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 Ø80 uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.

SURVEY NOTES

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

ORIGIN OF LEVELS	SSM 22740 RL41.10
DATUM	A.H.D.

SITEWORKS NOTES

- DATUM : A.H.D.
- ORIGIN OF LEVELS : REFER TO BENCH OR STATE SURVEY MARKS WHERE SHOWN ON PLAN.
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO THE COMMENCEMENT OF WORK.
- ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE DIRECTIONS OF THE SUPERINTENDENT.
- EXISTING SERVICES UNLESS SHOWN ON THE SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. 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.
- MAKE SMOOTH TRANSITION TO EXISTING SURFACES AND MAKE GOOD.
- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED LANDSCAPE, ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND SPECIFICATIONS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING TO DEVELOPMENT AT THE SITE.
- TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MINIMUM OF 50mm IN BITUMINOUS PAVING.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN Ø80 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.

KERBING NOTES:

INCLUDES ALL KERBS, GUTTERS, DISH DRAINS, CROSSING AND EDGES.

1. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSING TO BE CONSTRUCTED ON MINIMUM 75mm GRANULAR BASE COURSE COMPACTED TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1.
2. EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILTER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATION IN KERBS.
3. WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.
4. BROAMED FINISHED TO ALL RAMPED AND VEHICULAR CROSSINGS, ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
5. IN THE REPLACEMENT OF KERBS
   EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm FROM LIP OF GUTTER. UPON COMPLETION OF NEW KERBS, NEW BASE COURSE AND SURFACE IS TO BE LAID 900mm WIDE TO MATCH EXISTING MATERIALS AND THICKNESS.
   EXISTING ALLOTMENT DRAINAGE PIPE ARE TO BE BUILT INTO NEW KERB WITH A 100mm DIA HOLE.
   EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

SUBSOIL DRAINAGE NOTES

1. GENERALY PROVIDE SUBSOIL DRAINS TO INTERCEPT GROUNDWATER SEEPAGE AND PREVENT WATER BUILD-UP BEHIND WALLS AND UNDER FLOORS AND PAVEMENTS. CONNECT SUBSOIL TO SURFACE DRAINS OR TO THE STORMWATER DRAINAGE SYSTEM AS APPLICABLE.
2. PIPE DEPTH:
   PROVIDE THE FOLLOWING MINIMUM CLEAR DEPTH, MEASURED TO THE CROWN OF THE PIPE, WHERE THE PIPE PASSES BELOW THE FOLLOWING ELEMENTS:
   - 100mm BELOW FORMATION LEVEL OF THE PAVEMENT, KERB OR CHANNEL.
   - 100mm BELOW THE AVERAGE GRADIENT OF THE BOTTOM OF FOOTINGS.
3. JOINTING:
   AT JUNCTIONS OF SUBSOIL PIPES PROVIDE TEES, COUPLINGS OR ADAPTORS TO AS2439.1.
4. TRENCH WIDTH MINIMUM 300mm.
5. PIPE UNDERLAY
   GENERAL: GRADE THE TRENCH FLOOR EVENLY TO THE GRADIENT OF THE PIPELINE. IF THE TRENCH FLOOR IS ROCK, CORRECT ANY IRREGULARITIES WITH COMPACTED BEDDING MATERIAL. BED 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.
6. 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.
7. FILTER SOCKS:
   PROVIDE POLYESTER PERMEABLE SOCKS CAPABLE OF RETAINING PARTICLES OF 0.25mm SIZES. SECURELY FIT OR JOIN THE SOCK AT EACH JOINT.

SUBGRADE PREPARATION - SITEWORKS.

1. THE EXISTING SURFACE IS TO BE STRIPPED OF ANY PAVEMENTS, TOPSOIL OR OBVIOUS UNSUITABLE MATERIAL.
2. EXCAVATE TO ACHIEVE SUBGRADE LEVELS WHERE NECESSARY.
3. THE EXPOSED SUBGRADE AFTER STRIPPING AND/ OR EXCAVATION IS TO BE PROOF ROLLED USING NOT FEWER THAN 5 PASSES OF A MINIMUM 8 TONNE DEAD WEIGHT STEEL SMOOTH-DRUM ROLLER UNDER THE 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.
4. 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).
5. IMPORTED FILLING (IF REQUIRED) IS TO BE TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. THE CONTRACTOR IS TO NOMINATE THE SOURCE AND PROVIDE A SAMPLE FOR APPROVAL PRIOR TO IMPORTATION AND PLACEMENT ON SITE.
6. ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING.
   FREE FORM ORGANIC AND PERISHABLE MATTER
   MAXIMUM PARTICLE SIZE = 75mm
   MAXIMUM PLASTICITY INDEX = 15%

ASPHALTIC CONCRETE SURFACING NOTES:

1. ASPHALT (HOT MIXED) TO AS2150.
2. BITUMEN EMULSION: TO AS1160.
3. BASECOURSE SURFACE TO BE FIRM, FREE OF SURFACE WATER, OILS, GREASE, RETARDERS, LOOSE MATERIAL AND DUST. APPLY TACK COAT IMMEDIATELY BEFORE PLACING ASPHALT.
4. TACK COAT: BITUMINOUS EMULSION SPRAY TO THE RECOMMENDATION OF AS2150.
5. ASPHALT: MIXING LAYING AND COMPACTION TO THE RECOMMENDATION OF AS2150. TACK COAT: BITUMINOUS EMULSION SPRAY TO THE RECOMMENDATION OF AS2150.
6. MIXES:
   - AC10 - 10mm NOMINAL MAXIMUM AGGREGATE SIZE
   - AC7 - 7mm NOMINAL MAXIMUM AGGREGATE SIZE
   - AC5 - 5mm NOMINAL MAXIMUM AGGREGATE SIZE
7. BITUMEN BINDER CLASS: 170.
8. SURFACE FINISH: DENSE, SMOOTH, FREE OF ROLLER MARKS AND LOOSE MATERIAL.
   COMPACTION: WHILST THE MIX TEMPERATURE IS ABOVE 140°C. SITE DENSITY (MINIMUM): 95% OF THE 50 BELOW MARSHALL DENSITY OF THE LABORATORY COMPACTED MIX.
9. JOINTS:
   - THE NUMBER OF JOINTS, BOTH LONGITUDINAL AND TRANSVERSE, SHALL BE KEPT TO MINIMUM.
   - THE DENSITY AND SURFACE FINISH AT JOINTS SHALL BE SIMILAR TO THOSE OF THE REMAINDER OF THE LAYER.
   - FORM JOINTS AND STAGGER 300mm MINIMUM IN SUCCESSIVE LAYERS.
10. FINISHED PAVEMENT PROPERTIES:
    FINISHED SURFACES SHALL BE SMOOTH, DENSE AND TRUE TO SHAPE AND SHALL NOT VARY MORE THAN 10mm FROM SPECIFIED PLAN LEVEL AT ANY POINT AND SHALL NOT DEVIATE FROM THE BOTTOM OF A 3M STRAIGHT EDGE LAID IN ANY DIRECTION BY MORE THAN 5mm.

FLEXIBLE PAVEMENT NOTES:

BASE, SUB BASE AND SELECT MATERIAL

1. GENERAL:
   PAVEMENT "BASE" (I.E. THE HIGHEST COURSE OF THE PAVEMENT BELOW THE SURFACING) SHALL BE CONSTRUCTED OF FINE CRUSHED ROCK (EXCEPT CONCRETE PAVEMENT. WHERE THE CONCRETE IS THE BASE).
   PAVEMENT "SUB-BASE" (I.E. THE INTERMEDIATE OR LOWER COURSE OF THE PAVEMENT BELOW THE BASE) SHALL BE CONSTRUCTED OF CRUSHED ROCK OR NATURAL GRAVELS.
   PAVEMENT "SELECT MATERIAL LAYER" (I.E. THE LOWER COURSE OF THE PAVEMENT BELOW THE SUB-BASE) SHALL BE CONSTRUCTED OF CRUSHED ROCK, NATURAL GRAVELS OR SUITABLE SOILS.
   THE SUBGRADE SURFACE SHALL BE THE SURFACE THAT UNDERLIES EITHER:
   - THE SELECT MATERIAL LAYER WHEN SELECT MATERIAL LAYER IS PRESENT, OR
   - THE SUB-BASE WHEN SELECT MATERIAL LAYER IS ABSENT FROM THE PAVEMENT CONSTRUCTION, OR
   - THE BASE WHEN BOTH SELECT MATERIAL LAYER AND SUB-BASE ARE ABSENT FROM THE PAVEMENT CONSTRUCTION
2. MATERIALS:
   PRIOR TO THE DELIVERY OF ANY MATERIAL TO THE SITE, THE SOURCE OF ALL MATERIALS AND CERTIFICATES THAT THE MATERIAL SATISFIES THE SPECIFIED REQUIREMENTS SHALL BE PROVIDED FOR APPROVAL. ADDITIONALLY FOR EACH MATERIAL SOURCE, COMPLIANCE WITH THE APPROVED QUALITY ASSURANCE PROGRAM FOR INDIVIDUAL MATERIALS SHALL BE PROVIDED TO THE SUPERINTENDENT AS REQUIRED IN THE QUALITY SYSTEM REQUIREMENTS. TESTING OF PAVEMENT MATERIALS WILL NORMALLY BE PERFORMED ON SAMPLES TAKEN AT THE SOURCE PRIOR TO DELIVERY TO THE SITE AND IN THEIR FINAL CONDITIONS AFTER PLACEMENT AND COMPACTION IN THE PAVEMENT. HOWEVER, THE PROPERTIES SPECIFIED AND FINAL ACCEPTANCE ARE APPLICABLE TO THE MATERIALS IN THEIR FINAL CONDITION IN THE PAVEMENT. FINAL ACCEPTANCE WILL BE CONDITIONAL ON NO SIGNIFICANT CHANGE IN PROPERTIES DUE TO SEGREGATION OR CONTAMINATION DURING SUBSEQUENT PAVEMENT WORKS.

   FINE CRUSHED ROCK BASE MATERIAL

   FINE CRUSHED ROCK SHALL CONFORM TO THE REQUIREMENTS OF CLASS DGB20 MATERIAL AS SPECIFIED IN RMS SPECIFICATION 3051 AND SHALL BE HARD, DURABLE STONE FREE OF CLAY LUMPS, ORGANIC MATTER AND OBJECTIONABLE QUANTITIES OF DELETERIOUS SUBSTANCES. THE MATERIAL MAY BE CRUSHER RUN OR SCREENED AND RECOMBINED. ALL THE MATERIAL REQUIREMENTS APPLY BOTH PRIOR TO AND AFTER PLACEMENT IN THE PAVEMENT.

   SUB-BASE MATERIALS

   SUB-BASE MATERIALS SHALL BE CRUSHED ROCK SUB-BASE OR SUITABLE NATURAL GRAVELS AND CONFORM TO THE REQUIREMENTS OF CLASS DGS40 OR DGS20 OF RMS SPECIFICATION 3051. STONE SHALL BE HARD, DURABLE AND THE MATERIALS SHALL BE FREE OF CLAY LUMPS, ORGANIC MATTER AND OBJECTIONABLE QUANTITIES OF DELETERIOUS SUBSTANCES. ALL MATERIAL REQUIREMENTS WILL APPLY BOTH PRIOR TO AND AFTER PLACEMENT IN THE PAVEMENT.

RIGID CONCRETE PAVEMENT NOTES

GENERAL:

1. CARRY OUT ALL CONCRETE WORK IN ACCORDANCE WITH AS3600-2018 AND THE SPECIFICATION. KEEP A COPY OF THESE DOCUMENTS ON SITE.
2. VERIFY ALL SETTING OUT DIMENSIONS WITH THE ARCHITECT AND OR THE SURVEYOR.
3. DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWINGS.
4. IN CASE OF DOUBT - ASK.

CONCRETE:

1. PLACE CONCRETE OF THE FOLLOWING CHARACTERISTIC COMPRESSIVE STRENGTH F'C AS DEFINED IN AS3600-2018 OR RTA FORM 609. ADD WATER REDUCING ADMIXTURE EQUAL TO WRDA.

	AS3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
ALL KERBS, PITS ETC.	25	80	20
VEHICULAR PAVING	REFER TO CONCRETE PAVEMENT NOTES BELOW		

2. USE TYPE GP CEMENT IN ACCORDANCE WITH AS3972.
3. ALL CONCRETE SHALL BE SUBJECT TO PROJECT CONTROL SAMPLE AND TESTING TO AS3600-2018.
4. CONSOLIDATE BY VIBRATION. CURE SURFACES BY COVERING WITH PLASTIC AND KEEPING SURFACE MOIST FOR MIN 7 DAYS.

REINFORCEMENT:

1. FIX REINFORCEMENT AS SHOWN ON DRAWINGS. THE TYPE AND GRADE IS INDICATED BY A SYMBOL AS SHOWN BELOW.
   - N. HOT ROLLED DEFORMED BAR. GRADE 500
   - R. PLAIN ROUND BAR. GRADE 250
   - SL OR RL HARD DRAWN WIRE FABRIC SQUARE OR RECTANGULAR
2. PROVIDE BAR SUPPORTS OR SPACERS TO GIVE THE FOLLOWING CONCRETE COVER TO ALL REINFORCEMENT UNLESS NOTED OTHERWISE.
   - FOOTINGS: 75 BOTTOM. 65 TOP AND SIDES 40
   - SLABS: 40 WHEN EXPOSED TO WEATHER.
   - DRAINAGE STRUCTURES: 30 WHEN CAST IN FORMS BUT LATER EXPOSED TO WEATHER OR GROUND. 65 WHEN CAST DIRECTLY IN CONTACT WITH GROUND.
3. FOR ALL PITS LOCATED IN CONCRETE PROVIDE 2N16 TRIMMER BARS AROUND 1200mm LONG AROUND ALL CORNERS OF PITS UNLESS SHOWN OTHERWISE.

CONCRETE VEHICULAR PAVEMENT NOTES:

1. CONCRETE MIX PARAMETERS:
   - MAXIMUM AGGREGATE SIZE 20mm
   - FLEXURAL STRENGTH AT 28 DAYS = 3.5 MPa (F'c=32MPa)
   - FLEXURAL STRENGTH AT 90 DAYS = 3.85 MPa
   - MAXIMUM WATER / CEMENT RATIO =0.45
   - MAXIMUM SHRINKAGE LIMIT = 600 MICROSTRAINS (AS1012.13) AFTER 8 WEEKS OF DRYING
   - MINIMUM CEMENT CONTENT = 300kg/m3
   - CEMENT TO BE TYPE GP (NORMAL CEMENT) TO AS 3972
   - SLUMP = 80mm
2. SAWN JOINTS ARE TO BE CUT BETWEEN 2-4 HOURS AFTER CONCRETE POUR USING SOFF CUT SAW TO AVOID DAMAGING THE SURFACE DURING SAWCUT.
3. FOR EXPANSION JOINTS, PRIOR TO THE PLACEMENT OF CONCRETE IN THE ADJACENT SLAB, SELF EXPANDING CORK FILLER SHALL BE ADHERED TO THE ALREADY CAST AND CLEANED CONCRETE FACE USING AN APPROVED WATERPROOF ADHESIVE. ADHESIVE SHALL BE LIBERALLY APPLIED TO THE FULL FACE OF THE CONCRETE SLAB TO BE COVERED BY THE FILLER. AND ON THE FULL FACE OF THE FILLER TO BE ADHERED. THE BUILDER SHALL PROVIDE CONSTANT SUPERVISION OF CONCRETE POURS EXECUTED BY SUB-CONTRACTORS TO ENSURE:
   - REINFORCEMENT DISPLACED OFF CHAIRS ARE REPLACED PRIOR TO CONCRETE PLACEMENT.
   - NO SITE WATER IS ADDED TO CONCRETE OR CONCRETE IN WAITING TRUCKS. (REQUIRED SLUMP FOR PLACEMENT SHALL BE ACHIEVED USING SUPER PLASTICISER).
   - ALL CONCRETE IS FULLY COMPACTED USING A POKER VIBRATOR.
   - NO POURS ARE EXECUTED WHEN THE AMBIENT TEMPERATURE EQUALS OR EXCEEDS 35°C.
   - POURS ARE PROTECTED FROM ANY HOT DRYING WINDS.
4. REFER TO COMPACTION NOTES FOR PREPARATION OF SUB-BASE AND SUB-GRADE.
5. CURING: THE FINISHED CONCRETE SHALL BE CURED FOR A MINIMUM OF SEVEN DAYS USING AT LEAST ONE OF THE FOLLOWING METHODS:
   - PONDING OR CONTINUOUS SPRINKLING WITH WATER.
   - THE USE OF AN ABSORBENT COVER KEPT CONSTANTLY WET. (WHEN THE AMBIENT TEMPERATURE EXCEEDS 32°C CURING MAY ONLY BE ACHIEVED USING THE ABOVE 2 METHODS.
   - THE USE OF AN IMPERMEABLE SHEET MEMBRANE OVER A MOISTENED SURFACE. (THE MEMBRANE SHALL BE FIXED AND LAPPED SO THAT NO AIR CIRCULATION CAN OCCUR AT THE CONCRETE SURFACE).
   - THE USE OF A CURING COMPOUND COMPLYING WITH AS3799, APPLIED UNIFORMLY IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, AND WHEN DRY THE COAT SHOULD BE CONTINUOUS, FLEXIBLE AND WITHOUT VISIBLE BREAKS OR PIN HOLES FOR SEVEN DAYS.
6. BROOM CONCRETE FINISH UNLESS SPECIFIED OTHERWISE TO ARCHITECTS REQUIREMENTS.

BULK EARTHWORKS GENERAL NOTES

REFER TO GEOTECHNICAL INVESTIGATION REPORT PREPARED BY HB+B PROPERTY DATED 01 JUNE 2020 FOR INFORMATION RELATING TO EXISTING GROUND CONDITIONS, SITE TREATMENT AND 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 PTY LTD CAN NOT 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 A VIBRATOR PADFOOT ROLLER OF NOT LESS THEN 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.

PAVEMENT MARKING NOTES

1. THE WORK SHALL INCLUDE ALL LINE MARKING TO ROADS AND CARPARKS.
2. THE LINE MARKING AND PAINT SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS. AS 2890 AND AS 1742 AND RMS SPECIFICATION 3351.
3. PAINT SHALL BE PAINT CLASS A AND THE COLOR SHALL BE WHITE AND NOT SUBJECT TO DISCOLORATION BY BITUMEN FROM THE ROAD SURFACE. ALL PAINT SHALL BE APPLIED BY MECHANICAL SPRAYER.
4. LINE MARKING SHALL BE SPOTTED OUT AND APPROVED PRIOR TO SPRAYING.
5. PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm TO 0.40mm.
6. PAINT 75mm LINE MARKING TO CARPARK PAVEMENT.

COMPACTION REQUIREMENTS

1. PREPARATION FOR PAVEMENT:
   CLEAR SITE, STRIP TOP-SOIL, CUT AND FILL AND PREPARATIONS OF SUB-GRADE SHALL BE AS DESCRIBED IN " SUBGRADE PREPARATION".
2. SUB-GRADE SHALL BE COMPACTED TO 98% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1., TOP 300MM TO 100% SDD.
3. LOWER BASE COURSE SHALL BE CONSTRUCTED FROM CRUSHED SANDSTONE COMPACTED TO 100% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1. OF THICKNESS NOTED ON DRAWINGS.
4. BASE COURSE SHALL BE CONSTRUCTED FROM FINE CRUSHED ROCK COMPACTED TO 100% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1 OF THICKNESS NOTED ON DRAWINGS.
5. WEARING SURFACE SHALL BE ASPHALTIC CONCRETE TO STANDARD SPECIFICATION, MINIMUM THICKNESS = 30mm U.N.O.
6. TESTING OF THE SUBGRADE AND PAVEMENT LAYERS SHALL BE CARRIED OUT BY APPROVED N.A.T.A. REGISTERED LABORATORY.

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MB	NH	24.08.2023

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: NOTES

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	N.T.S.

Drawing number: 19221_D2_C010
Revision: 03



LEGEND

- AVOIDED LAND
- CERTIFIED - MAJOR TRANSPORT CORRIDOR
- CERTIFIED - URBAN CAPABLE LAND

CPCP OVERLAY

SCALE: 1:4000

0 80 160 240 320 400m

80 60 40 20

SCALE 1:4000

FOR DA ONLY

SURVEY INFORMATION

SURVEYED BY WATSDON BUCHAN

DATUM: A.H.D.

ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	MS	NH	24.09.2024					

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: CPCP OVERLAY

Drawn	Designed	Date
M.Stimova	N.Heazlewod	SEPT 2024
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:4000

Drawing number: 19221_D2_C050

Revision: 01



GENERAL ARRANGEMENT PLAN

SCALE: 1:4000

NOTE:
LEVELS AND SITE GRADING SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.

0 80 160 240 320 400m
80 60 40 20
SCALE 1:4000

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR DA ONLY	MS	NH	24.09.2024					
06	ISSUED FOR DA ONLY	AFe	NH	30.08.2024					
05	ISSUED FOR DA ONLY	AFe	NH	13.03.2024					
04	ISSUED FOR DA ONLY	AFe	NH	13.03.2024					
03	ISSUED FOR DA ONLY	AFe	NH	01.03.2024					
02	ISSUED FOR DA ONLY	AFe	NH	02.10.2023					
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023					

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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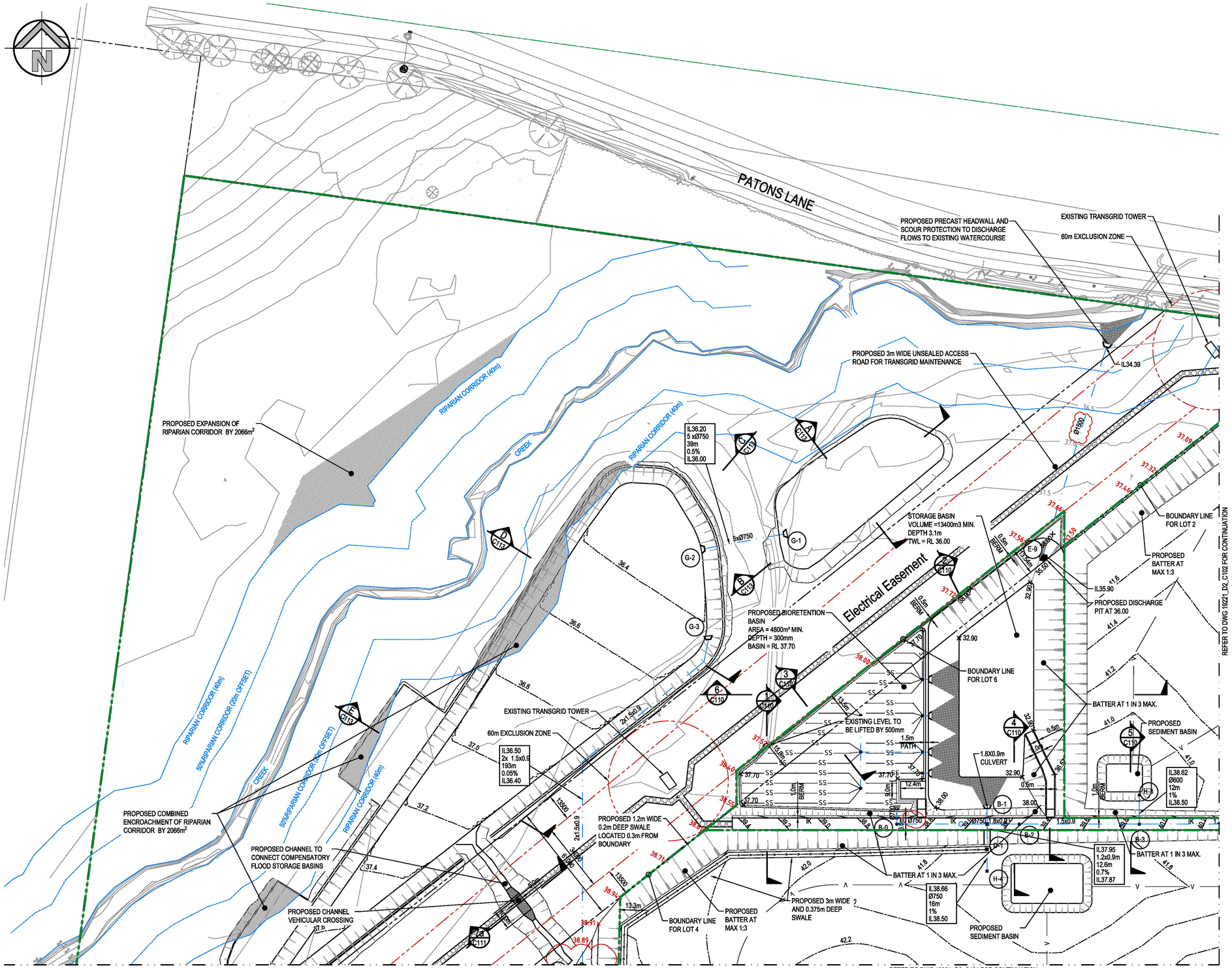
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
GENERAL ARRANGEMENT PLAN

Drawn	Designed	Date
M.Pereira	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:4000

Drawing number
19221_D2_C100

Revision
07



DETAIL PLAN

SCALE: 1:1000

0 20 40 60 80 100m

20 15 10 5

SCALE 1:1000

LEGEND

- PROPOSED STORMWATER PIPE
- EXISTING/ PROPOSED PROPERTY BOUNDARY
- TRANSGRID EXCLUSION ZONE
- 47.00 — PROPOSED CONTOURS
- 47.0 — EXISTING CONTOURS
- PROPOSED LINTEL ONGRADE & SAG PITS
- 37.50 — PROPOSED SPOT LEVEL "BY OTHERS"
- 36.55 — EXISTING SPOT LEVEL
- SS — PROPOSED SUBSOIL LINE
- IL97.19 — STORMWATER UPSTREAM INVERT RL.
- Ø300 — STORMWATER PIPE DIAMETER & CLASS
- 30m — STORMWATER PIPE LENGTH
- 1% — STORMWATER PIPE GRADE
- IL96.89 — STORMWATER DOWNSTREAM INVERT RL.
- PROPOSED SURFACE INLET PITS
- PROPOSED JUNCTION PITS
- A-1 — LINE LETTER / PIT NUMBER — PROPOSED PIT TAG
- PROPOSED BATTER LINE
- LOT BOUNDARY

NOTE:
LEVELS AND SITE GRADING SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR DA ONLY	LC	NH	01.03.2024
06	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
05	ISSUED FOR PRELIMINARY	LC	NH	06.09.2023
04	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023
03	ISSUED FOR REVIEW	NH	NH	19.04.2023
02	ISSUED FOR REVIEW	NH	NH	06.04.2023
01	ISSUED FOR REVIEW	NH	NH	27.03.2023

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
10	ISSUED FOR DA ONLY	MS	NH	24.09.2024
09	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
08	ISSUED FOR DA ONLY	AFe	NH	15.03.2024

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

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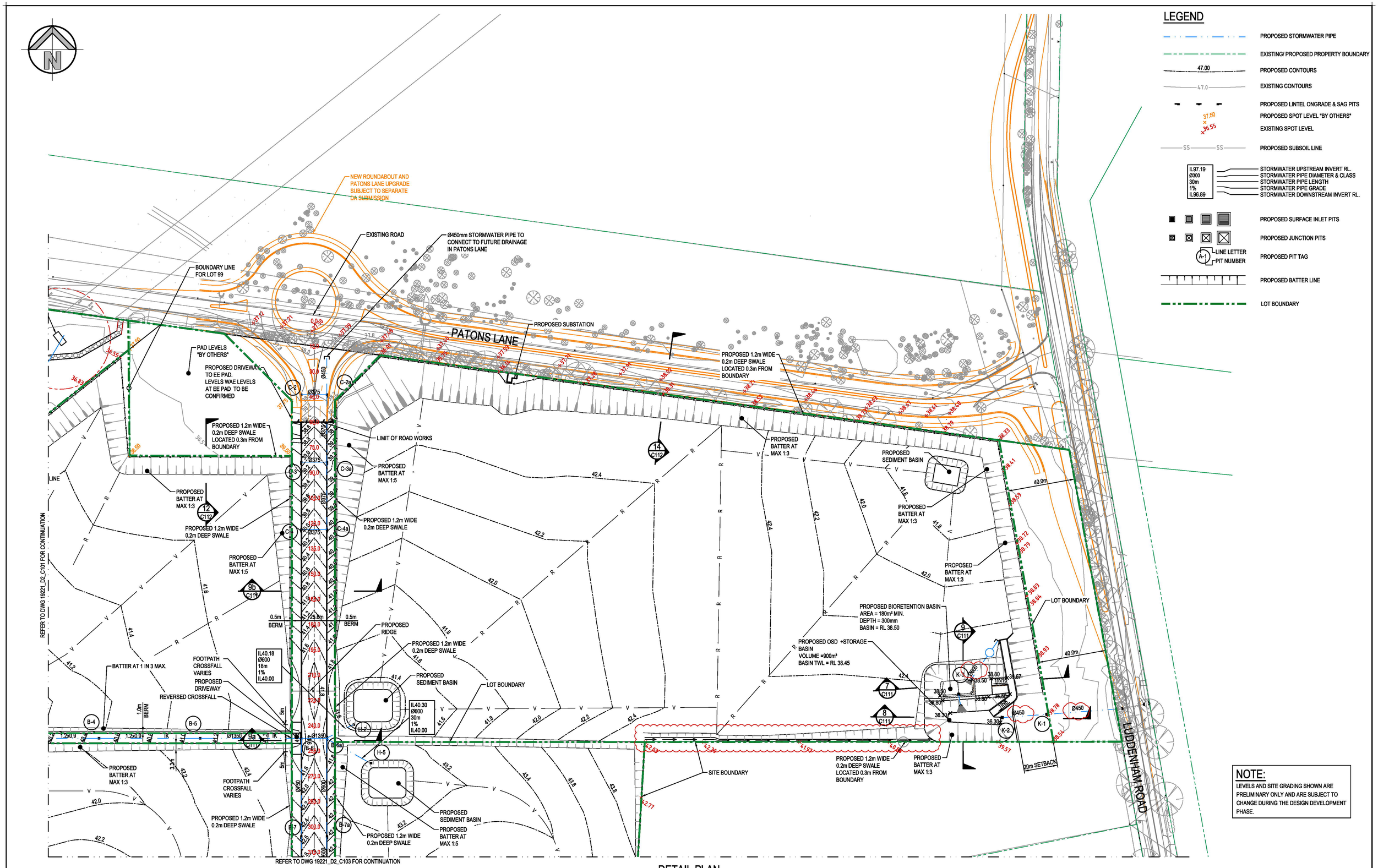
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: DETAIL PLAN
SHEET 1 OF 6

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:1000

Drawing number: 19221_D2_C101
Revision: 10



DETAIL PLAN

SCALE: 1:1000

SCALE 1:1000

NOTE:
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SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR DA ONLY	LC	NH	01.03.2024					
06	ISSUED FOR DA ONLY	AFe	NH	12.10.2023					
05	ISSUED FOR PRELIMINARY	LC	NH	06.09.2023					
04	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023	11	ISSUED FOR DA ONLY	NH	NH	05.11.2024
03	ISSUED FOR REVIEW	NH	NH	08.04.2023	10	ISSUED FOR DA ONLY	MS	NH	24.09.2024
02	ISSUED FOR REVIEW	NH	NH	27.03.2023	09	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
01	ISSUED FOR REVIEW	NH	NH	27.03.2023	08	ISSUED FOR DA ONLY	AFe	NH	15.03.2024

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: DETAIL PLAN
SHEET 2 OF 6

Drawn	Designed	Date
I.Khachab	N.Heaziewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heaziewod	A.Francis	1:1000

Drawing number: 19221_D2_C102
Revision: 11

REFER TO DWG 19221_D2_C102 FOR CONTINUATION

REFER TO DWG 19221_D2_C104 FOR CONTINUATION

REFER TO DWG 19221_D2_C106 FOR CONTINUATION

0.2m DEEP SWALE

MAX 1:5

PROPOSED BATTER AT MAX 1:5

0.5m BERM

25.6m

0.5m BERM

PROPOSED 1.2m WIDE 0.2m DEEP SWALE

SITE BOUNDARY

IL43.24
Ø600
24m
1%
IL43.00

PROPOSED BATTER AT MAX 1:3

PROPOSED SEDIMENT BASIN

PROPOSED BATTER AT MAX 1:5

PROPOSED 1.2m WIDE 0.2m DEEP SWALE

IL44.20
Ø600
20m
1%
IL44.00

PROPOSED BATTER AT MAX 1:5

PROPOSED BATTER AT MAX 1:3

PROPOSED 1.2m WIDE 0.2m DEEP SWALE

PROPOSED SEDIMENT BASIN

SITE BOUNDARY

IL46.20
Ø450
20m
1%
IL46.00

PROPOSED SEDIMENT BASIN

PROPOSED BATTER AT MAX 1:5

PROPOSED 1.2m WIDE 0.2m DEEP SWALE

PROPOSED BATTER AT MAX 1:3

SITE BOUNDARY

LEGEND

- PROPOSED STORMWATER PIPE
- EXISTING/ PROPOSED PROPERTY BOUNDARY
- 47.00 — PROPOSED CONTOURS
- 47.0 — EXISTING CONTOURS
- PROPOSED LINTEL ONGRADE & SAG PITS
- 37.50 × 36.55 — PROPOSED SPOT LEVEL *"BY OTHERS"* / EXISTING SPOT LEVEL
- SS SS — PROPOSED SUBSOIL LINE
- IL97.19 / Ø300 / 30m / 1% / IL96.89 — STORMWATER UPSTREAM INVERT RL. / STORMWATER PIPE DIAMETER & CLASS / STORMWATER PIPE LENGTH / STORMWATER PIPE GRADE / STORMWATER DOWNSTREAM INVERT RL.
- PROPOSED SURFACE INLET PITS
- PROPOSED JUNCTION PITS
- A-1 — LINE LETTER / PIT NUMBER — PROPOSED PIT TAG
- PROPOSED BATTER LINE
- LOT BOUNDARY

NOTE:
LEVELS AND SITE GRADING SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.

0 20 40 60 80 100m
20 15 10 5
SCALE 1:1000

DETAIL PLAN
SCALE: 1:1000

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR DA ONLY	MS	NH	24.09.2024
06	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
05	ISSUED FOR DA ONLY	MB	NH	01.03.2024
04	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
03	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023
02	ISSUED FOR REVIEW	NH	NH	08.04.2023
01	ISSUED FOR REVIEW	NH	NH	27.03.2023
09	ISSUED FOR DA ONLY	NH	NH	16.12.2024
08	ISSUED FOR DA ONLY	NH	NH	12.11.2024

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: DETAIL PLAN
SHEET 3 OF 6

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:1000

Drawing number: 19221_D2_C103
Revision: 09

REFER TO DWG 19221_D2_C101 FOR CONTINUATION

EXISTING TRANSGRID TOWER

60m EXCLUSION ZONE

PROPOSED 3m WIDE UNSEALED ACCESS ROAD FOR TRANSGRID MAINTENANCE

PROPOSED BATTER AT MAX 1:3

PROPOSED 3m WIDE AND 0.375m DEEP SWALE

PROPOSED SEDIMENT BASIN

SITE BOUNDARY

PROPOSED BATTER AT MAX 1:3

PROPOSED 3m WIDE AND 0.375m DEEP SWALE

PROPOSED SEDIMENT BASIN

PROPOSED BATTER AT MAX 1:3

SITE BOUNDARY

PROPOSED BATTER AT MAX 1:3

REFER TO DWG 19221_D2_C105 FOR CONTINUATION

REFER TO DWG 19221_D2_C103 FOR CONTINUATION

LEGEND

- PROPOSED STORMWATER PIPE
- EXISTING/ PROPOSED PROPERTY BOUNDARY
- 47.00 PROPOSED CONTOURS
- 47.0 EXISTING CONTOURS
- PROPOSED LINTEL ONGRADE & SAG PITS
- 37.50 PROPOSED SPOT LEVEL *BY OTHERS*
- 36.55 EXISTING SPOT LEVEL
- SS SS PROPOSED SUBSOIL LINE
- IL97.19 / Ø300 / 30m / 1% / IL96.89 — STORMWATER UPSTREAM INVERT RL. / STORMWATER PIPE DIAMETER & CLASS / STORMWATER PIPE LENGTH / STORMWATER PIPE GRADE / STORMWATER DOWNSTREAM INVERT RL.
- PROPOSED SURFACE INLET PITS
- PROPOSED JUNCTION PITS
- A-1 — LINE LETTER / PIT NUMBER — PROPOSED PIT TAG
- PROPOSED BATTER LINE
- LOT BOUNDARY

0 20 40 60 80 100m

20 15 10 5

SCALE 1:1000

DETAIL PLAN

SCALE: 1:1000

NOTE:
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FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR DA ONLY	MB	NH	01.03.2024
06	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
05	ISSUED FOR PRELIMINARY	LC	NH	02.10.2023
04	ISSUED FOR PRELIMINARY	LC	NH	06.09.2023
03	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023
02	ISSUED FOR REVIEW	NH	NH	06.04.2023
01	ISSUED FOR REVIEW	NH	NH	27.03.2023
10	ISSUED FOR DA ONLY	MS	NH	24.06.2024
09	ISSUED FOR DA ONLY	AFe	NH	30.08.2024

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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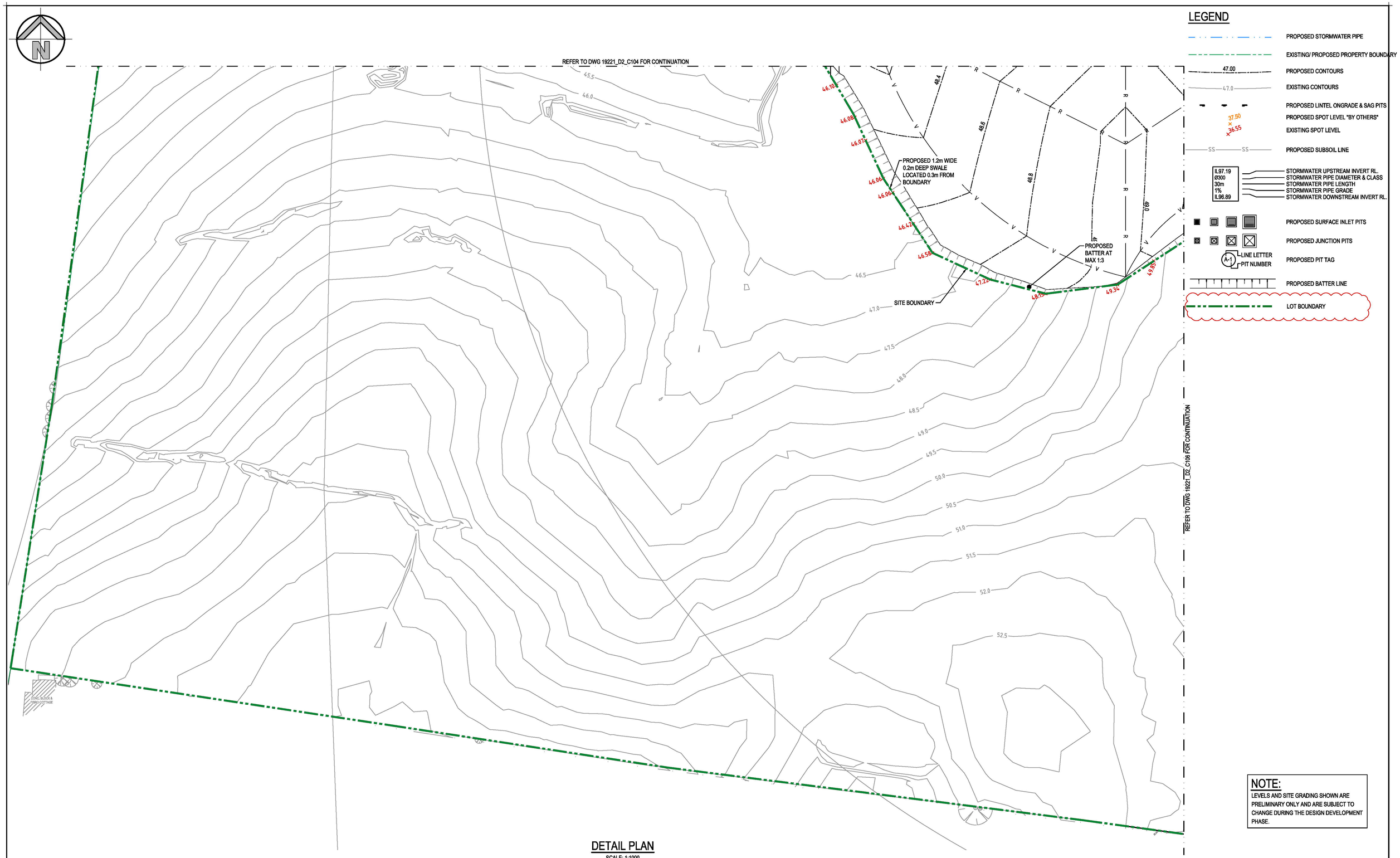
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: DETAIL PLAN
SHEET 4 OF 6

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:1000

Drawing number: 19221_D2_C104
Revision: 10



DETAIL PLAN

SCALE: 1:1000

0 20 40 60 80 100m

20 15 10 5

SCALE 1:1000

NOTE:

LEVELS AND SITE GRADING SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.

FOR DA ONLY

SURVEY INFORMATION

SURVEYED BY WATSDON BUCHAN

DATUM: A.H.D.

ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR DA ONLY	MS	NH	24.09.2024
06	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
05	ISSUED FOR DA ONLY	MB	NH	01.03.2024
04	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
03	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023
02	ISSUED FOR REVIEW	NH	NH	08.04.2023
01	ISSUED FOR REVIEW	NH	NH	27.03.2023

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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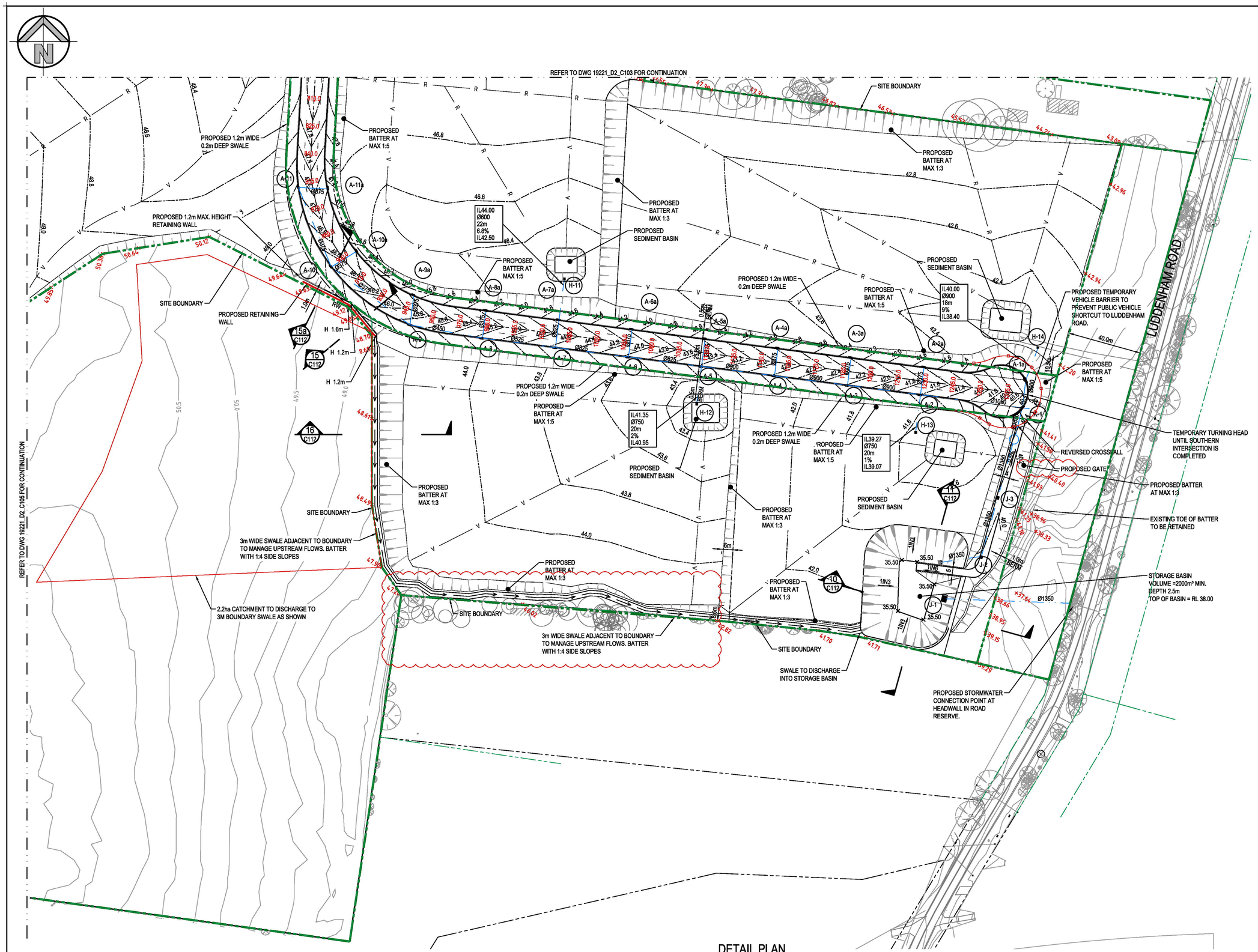
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HILLS

Title: DETAIL PLAN
SHEET 5 OF 6

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:1000

Drawing number: 19221_D2_C105

Revision: 07



DETAIL PLAN

SCALE: 1:1000

LEGEND

- PROPOSED STORMWATER PIPE
- EXISTING/ PROPOSED PROPERTY BOUNDARY
- PROPOSED CONTOURS (47.00)
- EXISTING CONTOURS (47.0)
- PROPOSED LINTEL ONGRADE & SAG PITS
- PROPOSED SPOT LEVEL "BY OTHERS" (37.50 × 36.55)
- EXISTING SPOT LEVEL
- PROPOSED SUBSOIL LINE (SS)
- STORMWATER UPSTREAM INVERT RL. (IL97.19)
- STORMWATER PIPE DIAMETER & CLASS (Ø300)
- STORMWATER PIPE LENGTH (30m)
- STORMWATER PIPE GRADE (1%)
- STORMWATER DOWNSTREAM INVERT RL. (IL96.89)
- PROPOSED SURFACE INLET PITS
- PROPOSED JUNCTION PITS
- PROPOSED PIT TAG (A-1 = LINE LETTER / PIT NUMBER)
- PROPOSED BATTER LINE
- PROPOSED TEMPORARY VEHICLE BARRIER
- LOT BOUNDARY

NOTE:
LEVELS AND SITE GRADING SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR DA ONLY	AFe	NH	15.03.2024
06	ISSUED FOR DA ONLY	AFe	NH	01.03.2024
05	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
04	ISSUED FOR PRELIMINARY	LC	NH	08.09.2023
03	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023
02	ISSUED FOR REVIEW	NH	NH	08.04.2023
01	ISSUED FOR REVIEW	NH	NH	27.03.2023
12	ISSUED FOR DA ONLY	NH	NH	16.12.2024
11	ISSUED FOR DA ONLY	NH	NH	12.11.2024
10	ISSUED FOR DA ONLY	MS	NH	01.11.2024
09	ISSUED FOR DA ONLY	MS	NH	24.09.2024
08	ISSUED FOR DA ONLY	AFe	NH	30.08.2024

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE
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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

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DRAWING TO BE PRINTED IN COLOUR

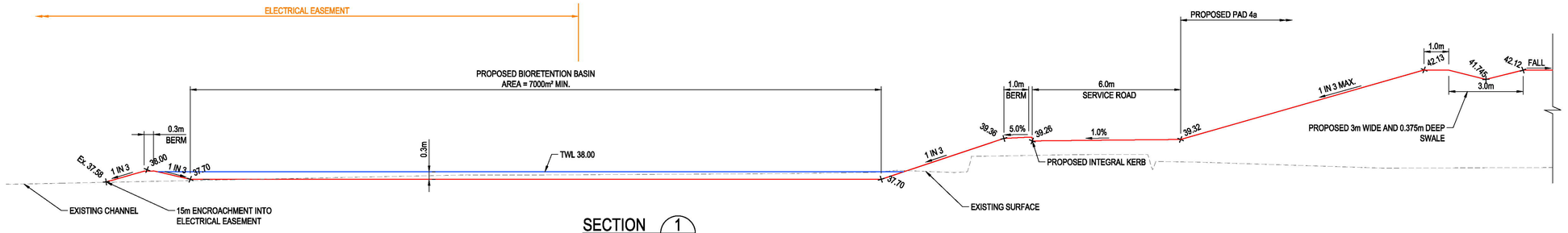
henry&hymas

Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

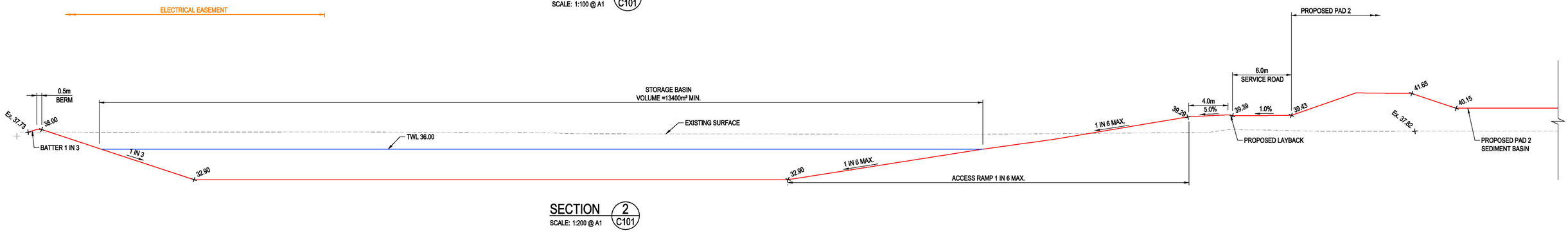
Title: DETAIL PLAN
SHEET 6 OF 6

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:1000

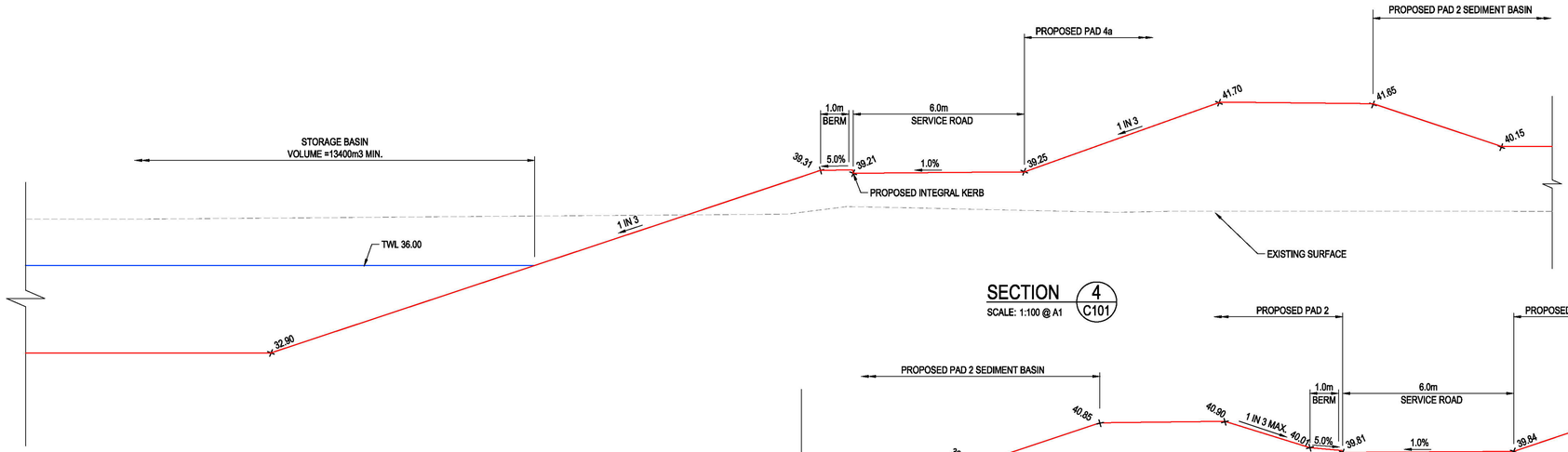
Drawing number: 19221_D2_C106
Revision: 12



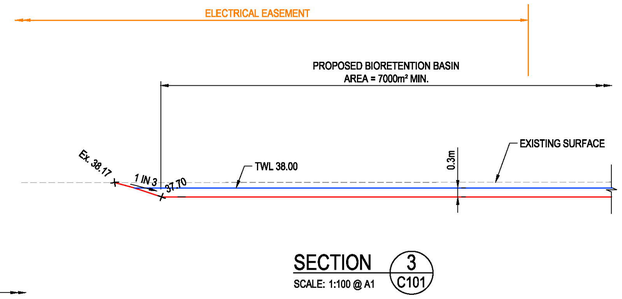
SECTION 1 / C101
SCALE: 1:100 @ A1



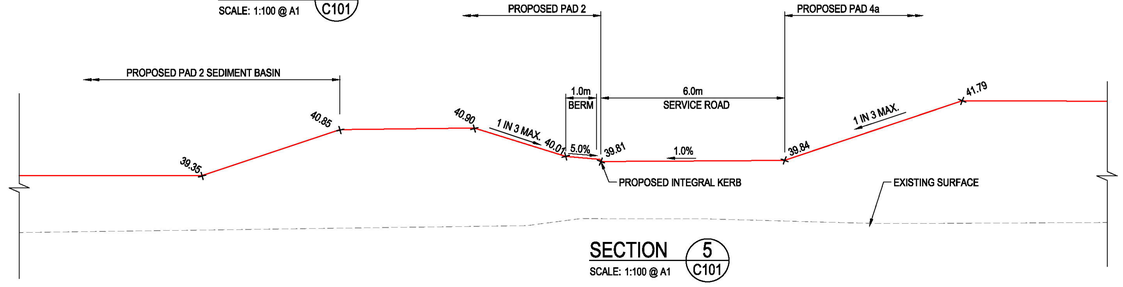
SECTION 2 / C101
SCALE: 1:200 @ A1



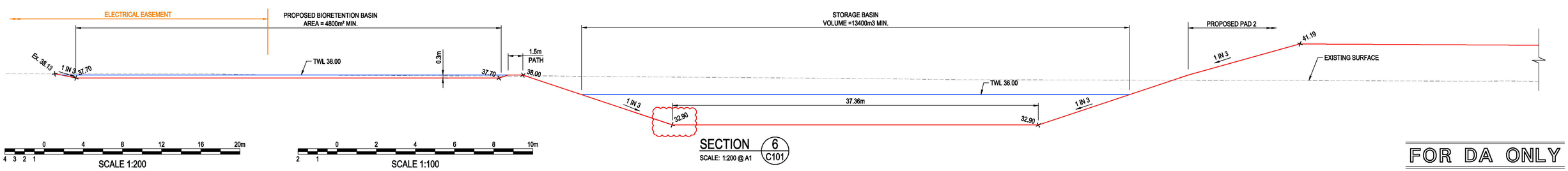
SECTION 4 / C101
SCALE: 1:100 @ A1



SECTION 3 / C101
SCALE: 1:100 @ A1



SECTION 5 / C101
SCALE: 1:100 @ A1



SECTION 6 / C101
SCALE: 1:200 @ A1

0 4 8 12 16 20m
4 3 2 1
SCALE 1:200

0 2 4 6 8 10m
2 1
SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR DA ONLY	NH	NH	30.08.2024					
04	ISSUED FOR DA ONLY	LC	NH	01.03.2024					
03	ISSUED FOR DA ONLY	AFe	NH	12.10.2023					
02	ISSUED FOR PRELIMINARY	LC	NH	08.09.2023					
01	ISSUED FOR REVIEW	LC	NH	27.03.2023					

Client
HB & B PROPERTY PTY LTD
Architect
NETTLETONTRIBE

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www.henryandhymas.com.au
henry&hymas

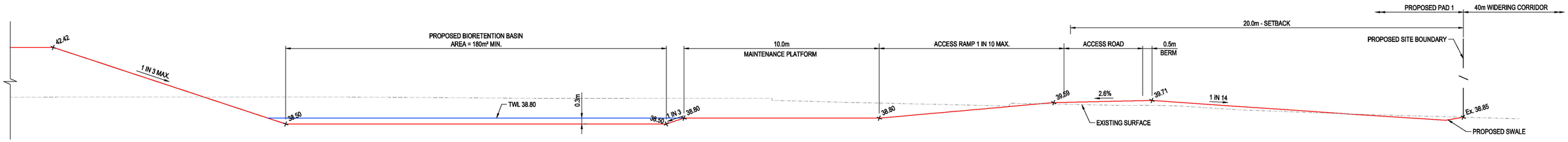
Project
PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
SITE SECTIONS
SHEET 1 OF 5

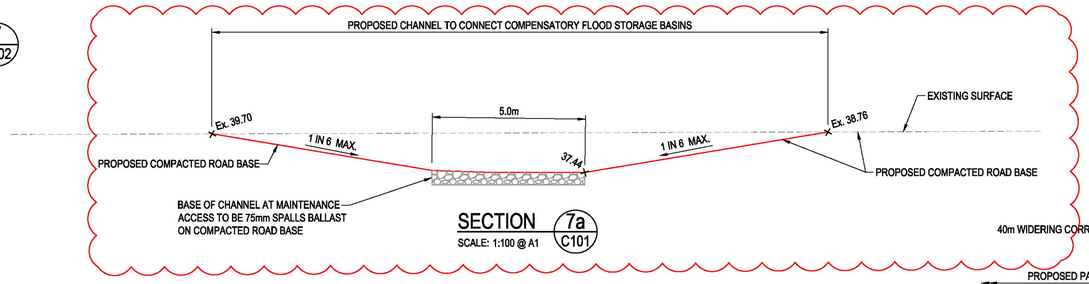
Drawn	Designed	Date
I.Khachab	N.Heazlewod	JAN 2023
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS SHOWN

Drawing number
19221_D2_C110

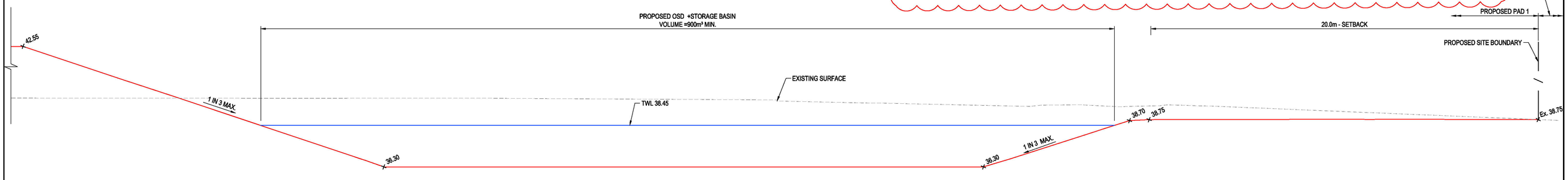
Revision
05



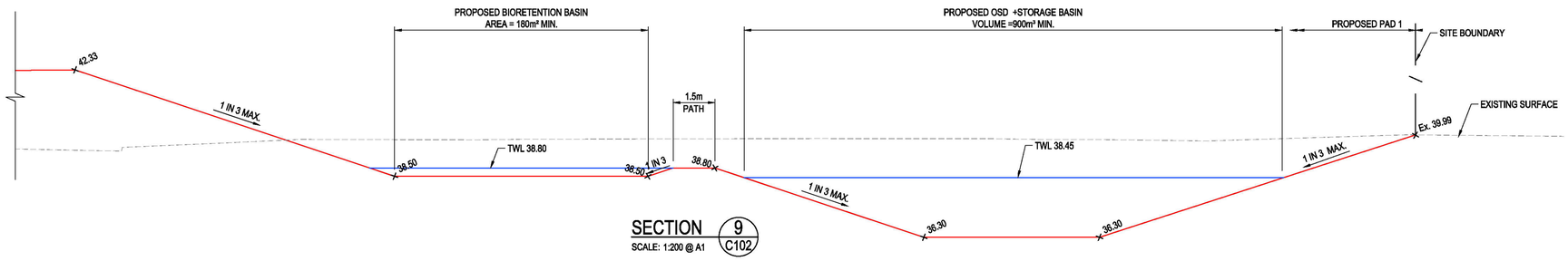
SECTION 7 (C102)
SCALE: 1:100 @ A1



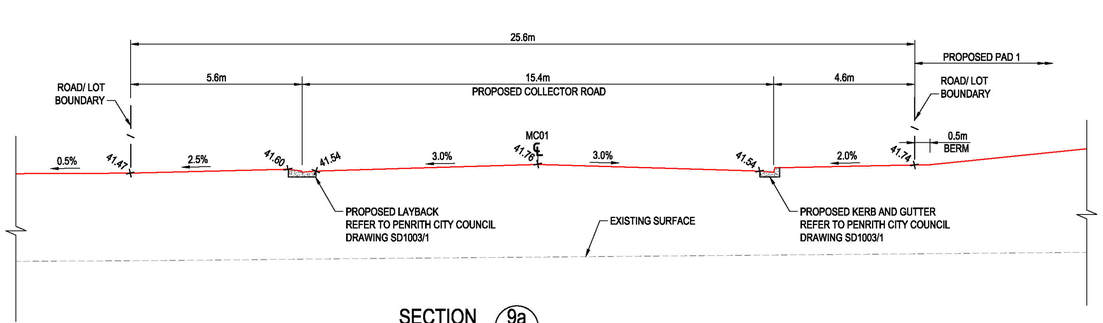
SECTION 7a (C101)
SCALE: 1:100 @ A1



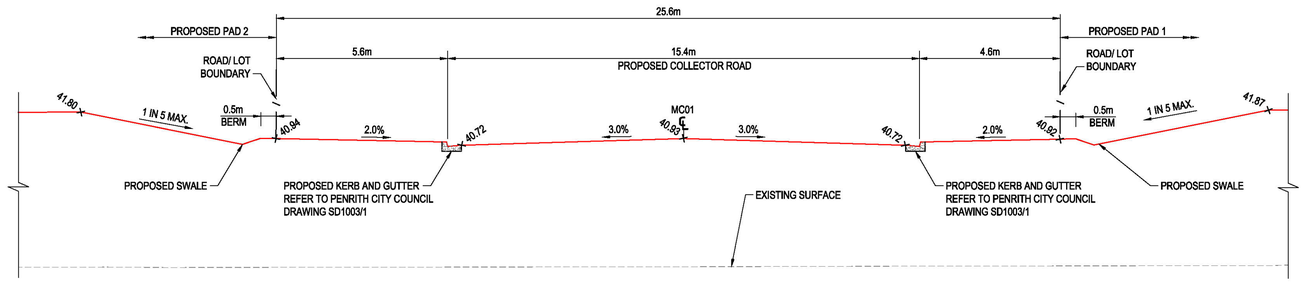
SECTION 8 (C102)
SCALE: 1:100 @ A1



SECTION 9 (C102)
SCALE: 1:200 @ A1



SECTION 9a (C102)
SCALE: 1:100 @ A1



SECTION 9b (C102)
SCALE: 1:100 @ A1

0 4 8 12 16 20m
4 3 2 1
SCALE 1:200

0 2 4 6 8 10m
2 1
SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
04	ISSUED FOR DA ONLY	LC	NH	01.03.2024
03	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
02	ISSUED FOR PRELIMINARY	LC	NH	06.09.2023
01	ISSUED FOR REVIEW	LC	NH	27.03.2023

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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henry&hymas

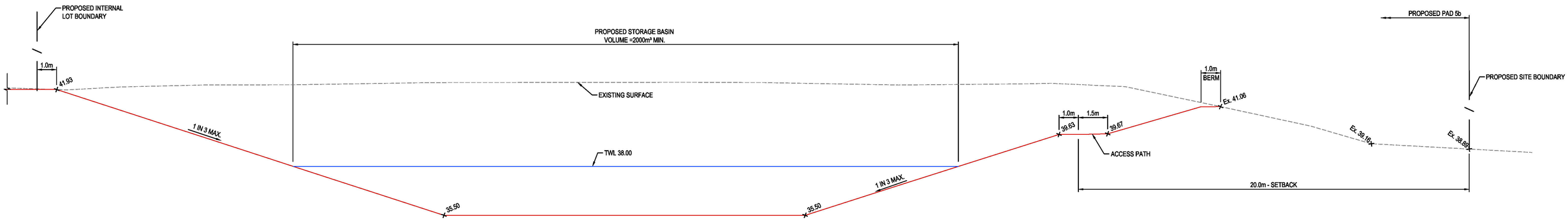
Project
PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
SITE SECTIONS
SHEET 2 OF 5

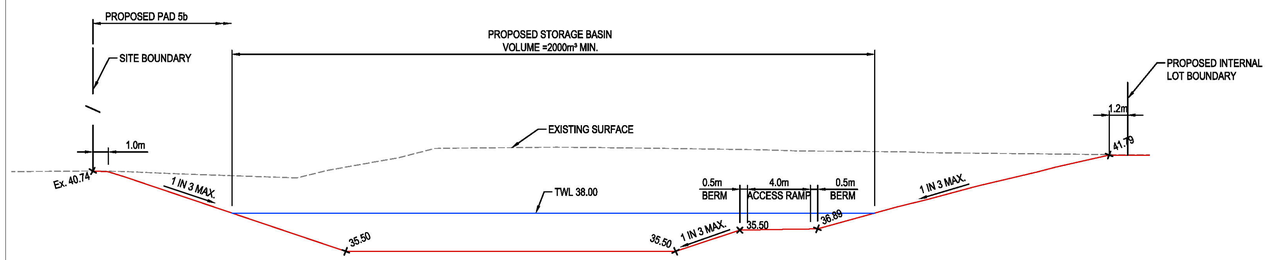
Drawn	Designed	Date
I.Khachab	N.Heazlewod	JAN 2023
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS SHOWN

Drawing number
19221_D2_C111

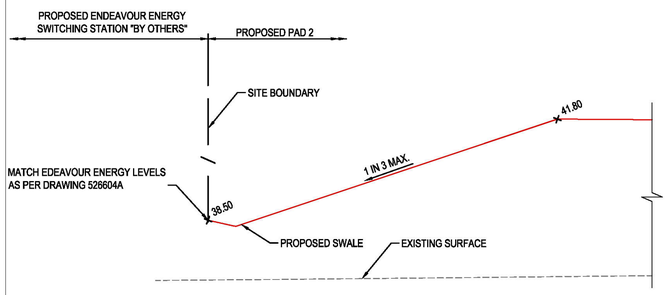
Revision
05



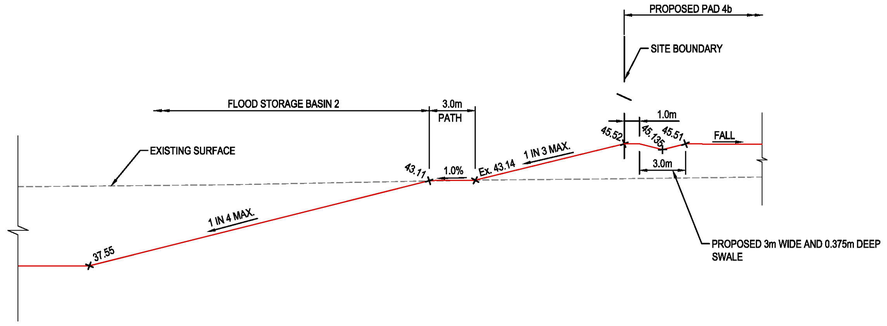
SECTION 10 (C106)
SCALE: 1:100 @ A1



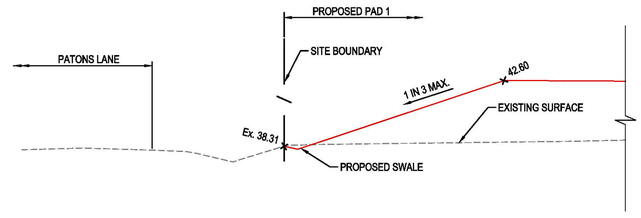
SECTION 11 (C106)
SCALE: 1:200 @ A1



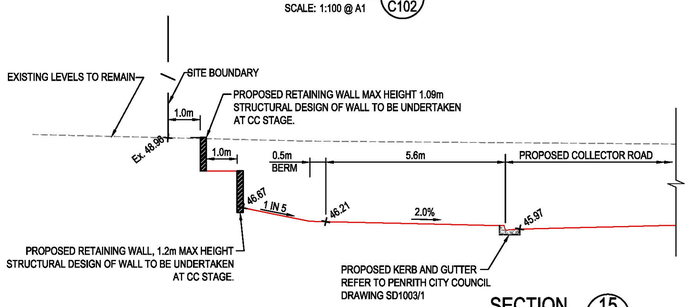
SECTION 12 (C102)
SCALE: 1:100 @ A1



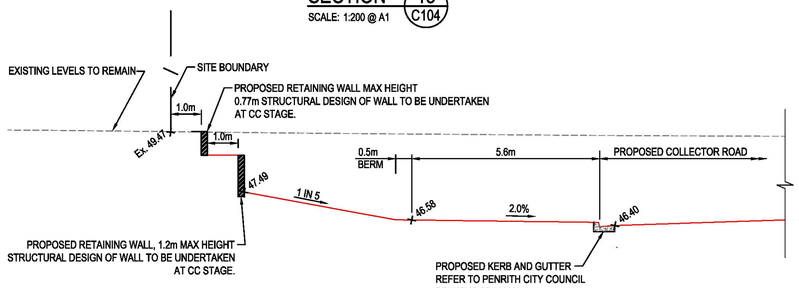
SECTION 13 (C104)
SCALE: 1:200 @ A1



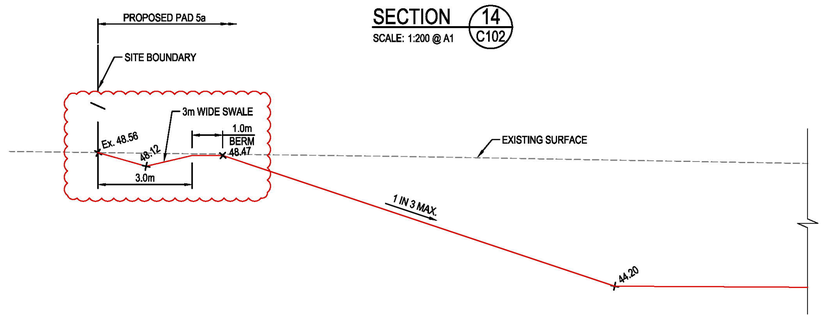
SECTION 14 (C102)
SCALE: 1:200 @ A1



SECTION 15 (C106)
SCALE: 1:100 @ A1



SECTION 15a (C106)
SCALE: 1:100 @ A1



SECTION 16 (C106)
SCALE: 1:100 @ A1

0 4 8 12 16 20m
4 3 2 1
SCALE 1:200

0 2 4 6 8 10m
2 1
SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
06	ISSUED FOR DA ONLY	NH	NH	12.11.2024
05	ISSUED FOR DA ONLY	NH	NH	01.11.2024
04	ISSUED FOR DA ONLY	LC	NH	01.03.2024
03	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
02	ISSUED FOR PRELIMINARY	LC	NH	06.09.2023
01	ISSUED FOR REVIEW	LC	NH	27.03.2023

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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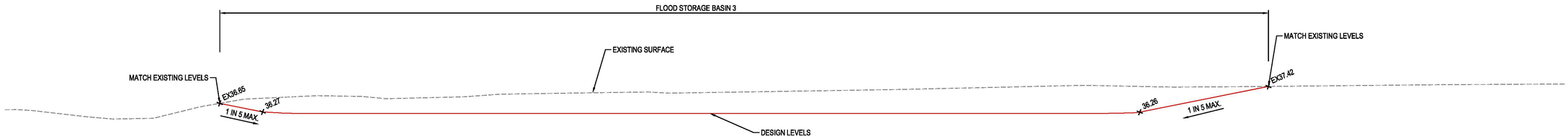
Email email@hhconsult.com.au
Web www.henryandhymas.com.au
henry&hymas

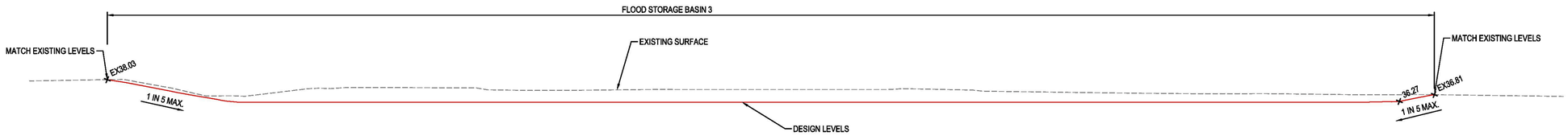
Project: PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HILLS
Title: SITE SECTIONS
SHEET 3 OF 5

Drawn	Designed	Date
I.Khachab	N.Heazlewod	JAN 2023
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS SHOWN

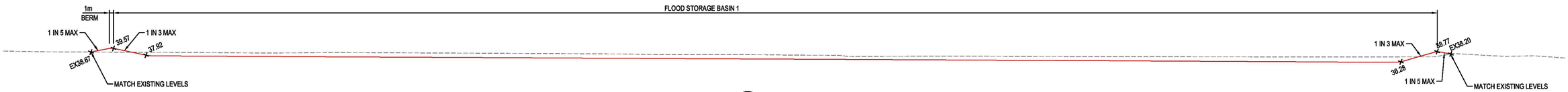
Drawing number: 19221_D2_C112
Revision: 06



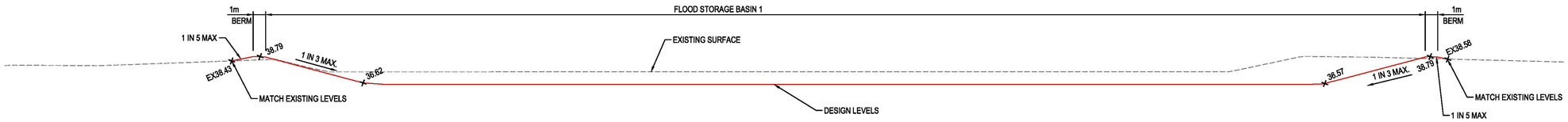
SECTION A
SCALE: 1:100 @ A1
C101



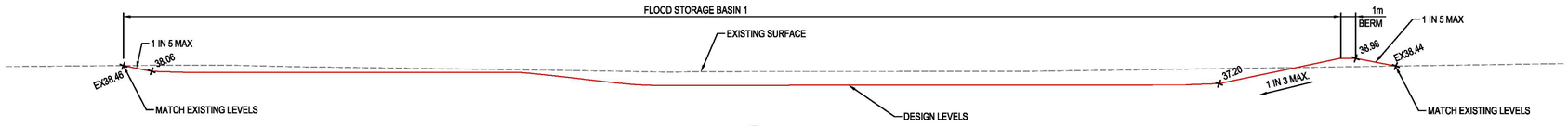
SECTION B
SCALE: 1:200 @ A1
C101



SECTION C
SCALE: 1:500 @ A1
C101



SECTION D
SCALE: 1:200 @ A1
C101



SECTION E
SCALE: 1:200 @ A1
C101

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

0 4 8 12 16 20m
4 3 2 1
SCALE 1:200

0 2 4 6 8 10m
2 1
SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	SC	NH	12.10.2023

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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henry&hymas

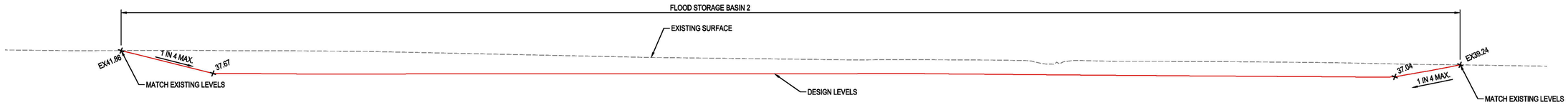
Project
PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
BASIN SECTIONS
SHEET 4 OF 5

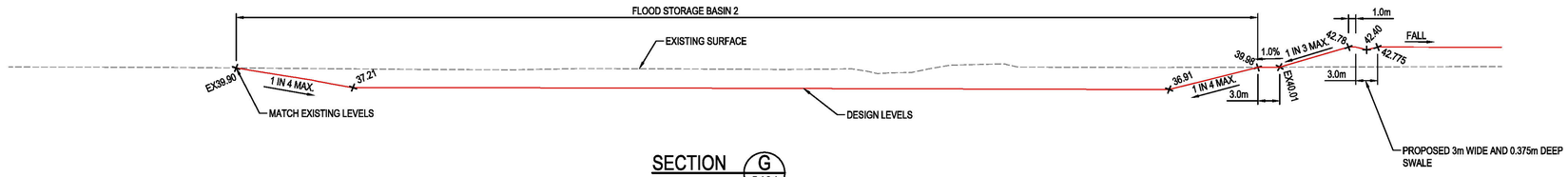
Drawn	Designed	Date
I.Khachab	N.Heazlewod	JAN 2023
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS SHOWN

Drawing number
19221_D2_C113

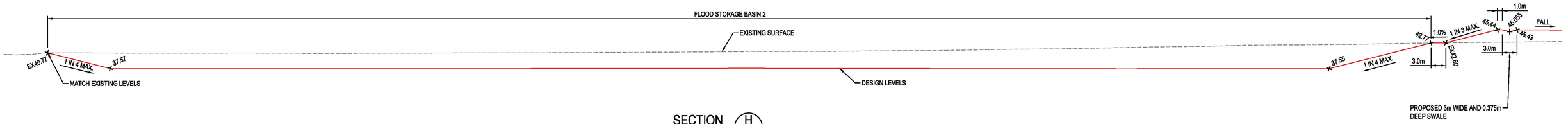
Revision
01



SECTION F C104
SCALE: 1:400 @ A1



SECTION G C104
SCALE: 1:400 @ A1



SECTION H C104
SCALE: 1:400 @ A1

0 8 16 24 32 40m
8 6 4 2
SCALE 1:400

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	SC	NH	12.10.2023

Client
HB & B PROPERTY PTY LTD
Architect
NETTLETONTRIBE

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Facsimile +61 2 9417 8337
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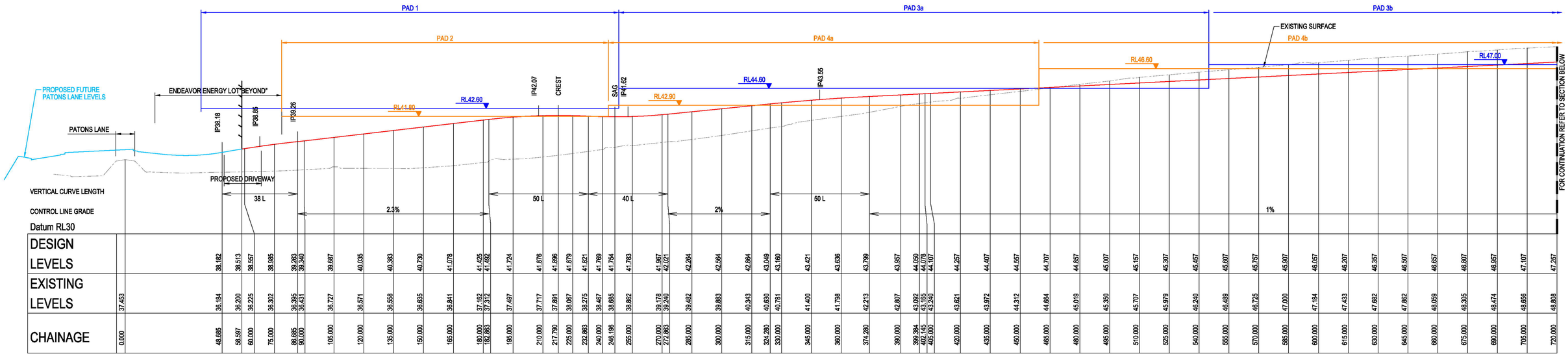
Web www.henryandhymas.com.au
henry&hymas

Project
PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS
Title
BASIN SECTIONS
SHEET 5 OF 5

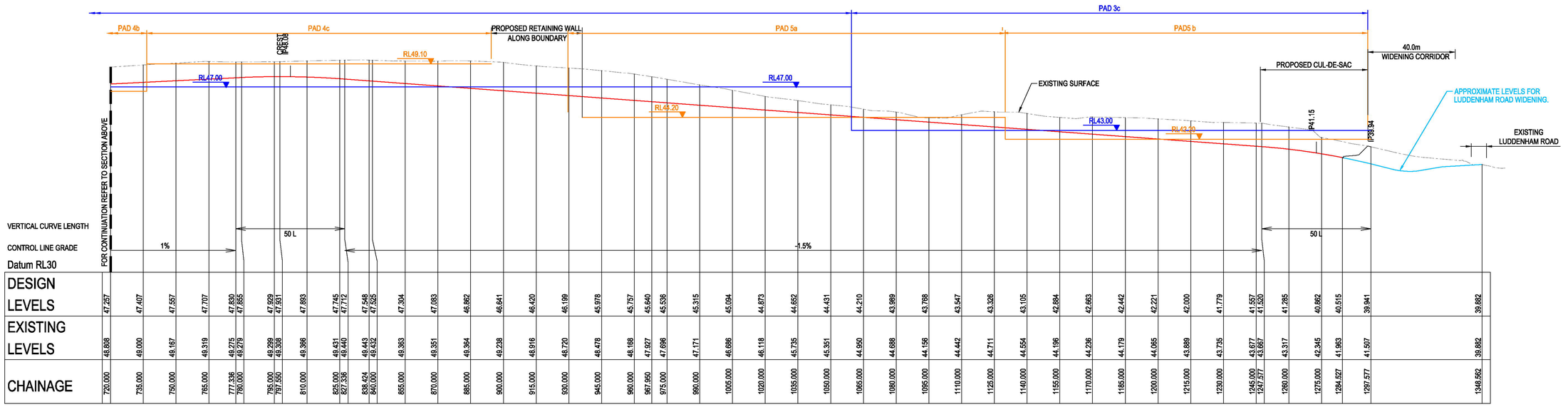
Drawn	Designed	Date
I.Khachab	N.Heazlewod	JAN 2023
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS SHOWN

Drawing number
19221_D2_C114
Revision
01



ACCESS ROAD CL 1 LONGITUDINAL SECTION

HORIZONTAL SCALE 1:1000 @ A0
VERTICAL SCALE 1:200 @ A0



ACCESS ROAD CL 1 LONGITUDINAL SECTION - CONTINUATION

HORIZONTAL SCALE 1:1000 @ A0
VERTICAL SCALE 1:200 @ A0

0 4 8 12 16 20m
4 3 2 1
SCALE 1:200

0 20 40 60 80 100m
20 15 10 5
SCALE 1:1000

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	LC	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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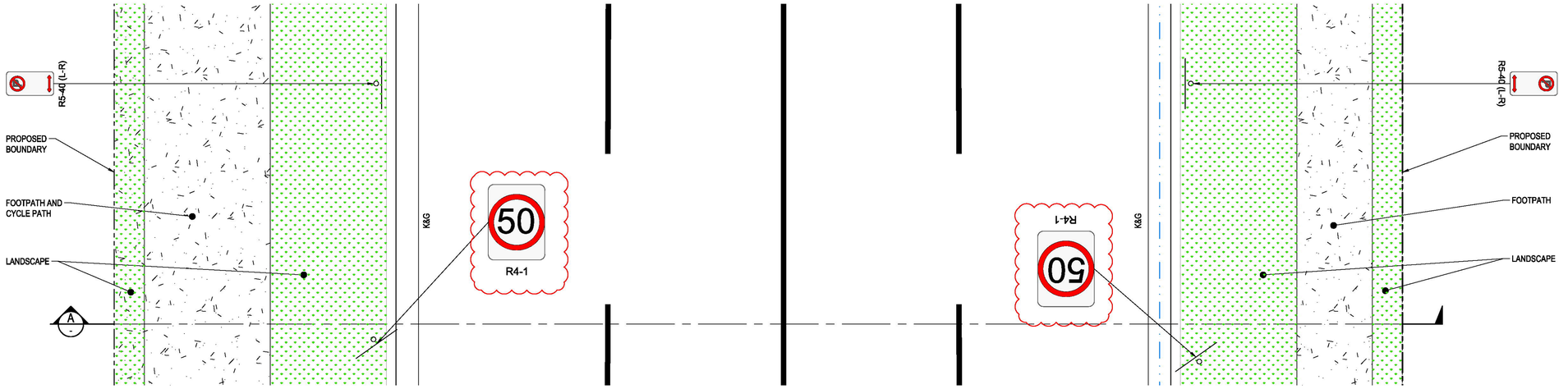
henry&hymas

Project: PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS
Title: ROAD LONGITUDINAL SECTION

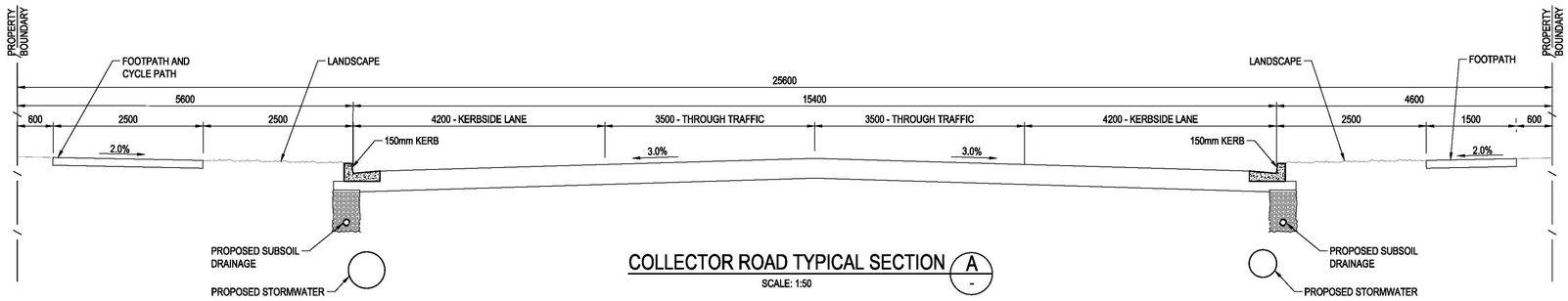
Drawn	Designed	Date
I.Khachab	N.Heazlewod	JAN 2023
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS SHOWN

Drawing number: 19221_D2_C120
Revision: 03



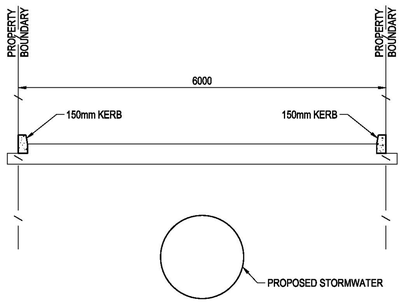
TYPICAL LINEMARKING AND SIGNPOSTING PLAN

SCALE: 1:50



COLLECTOR ROAD TYPICAL SECTION A

SCALE: 1:50



SERVICE ROAD TYPICAL

SCALE: 1:50

0 1000 2000 3000 4000 5000mm

1000 600 200

SCALE 1:50

FOR DA ONLY

SURVEY INFORMATION

SURVEYED BY WATSDON BUCHAN

DATUM: A.H.D.

ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR DA ONLY	MS	NH	24.09.2024
04	ISSUED FOR DA ONLY	MS	NH	02.08.2024
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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henry&hymas

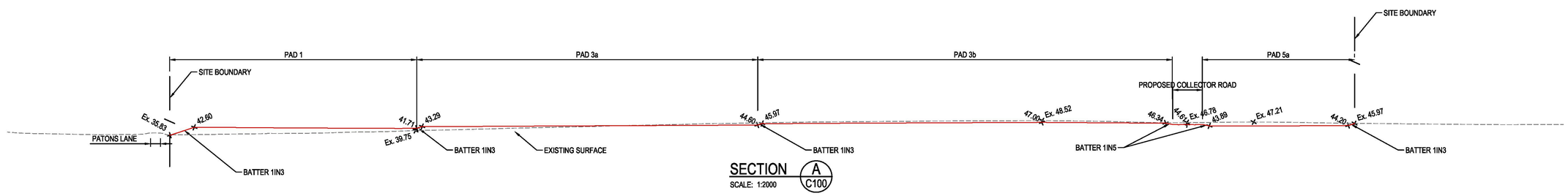
Project: PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: TYPICAL ROAD SECTIONS AND LINEMARKING PLAN

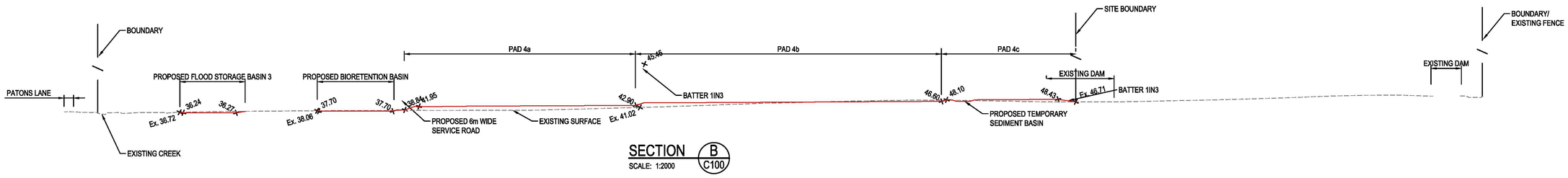
Drawn	Designed	Date
I.Khachab	N.Heazlewod	JAN 2023
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:50

Drawing number: 19221_D2_C130

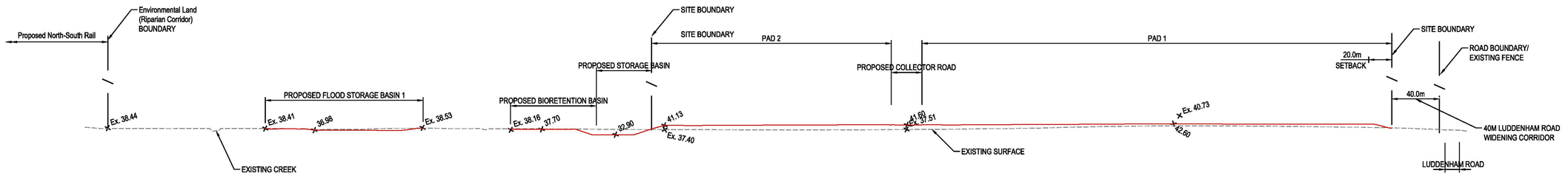
Revision: 04



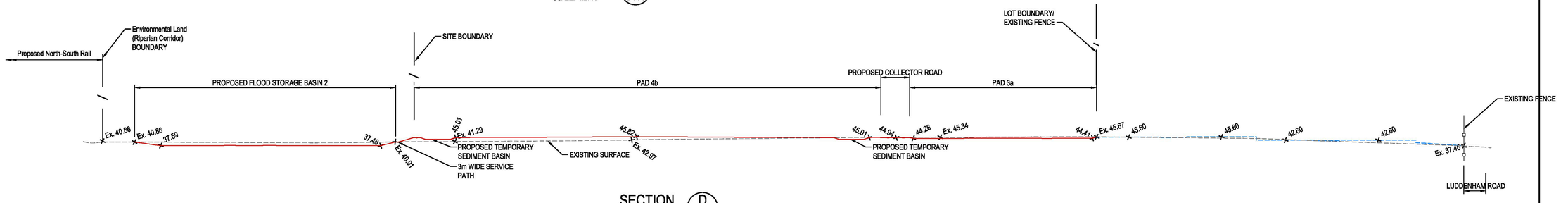
SECTION A
SCALE: 1:2000
C100



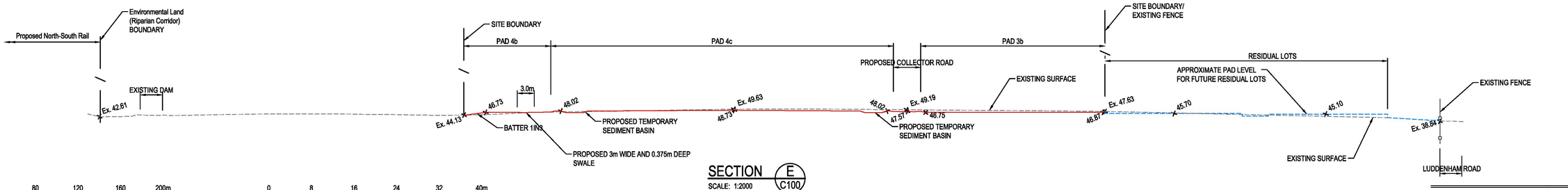
SECTION B
SCALE: 1:2000
C100



SECTION C
SCALE: 1:2000
C100



SECTION D
SCALE: 1:2000
C100



SECTION E
SCALE: 1:2000
C100

0 40 80 120 160 200m
40 30 20 10
SCALE 1:2000

0 8 16 24 32 40m
8 6 4 2
SCALE 1:400

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
03	ISSUED FOR DA ONLY	LC	NH	19.03.2024
02	ISSUED FOR DA ONLY	LC	NH	13.03.2024
01	ISSUED FOR DA ONLY	AFe	NH	12.10.2023

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

Project
PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
OVERALL SITE SECTIONS
SHEET 1 OF 3

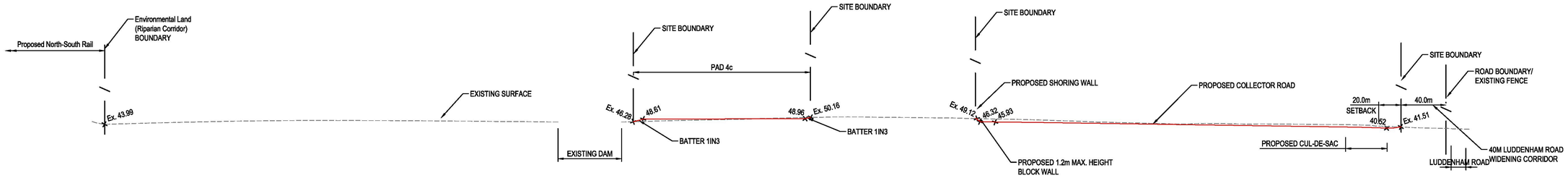
Drawn	Designed	Date
I.Khachab	N.Heazlewod	JAN 2023
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS SHOWN

Drawing number
19221_D2_C140

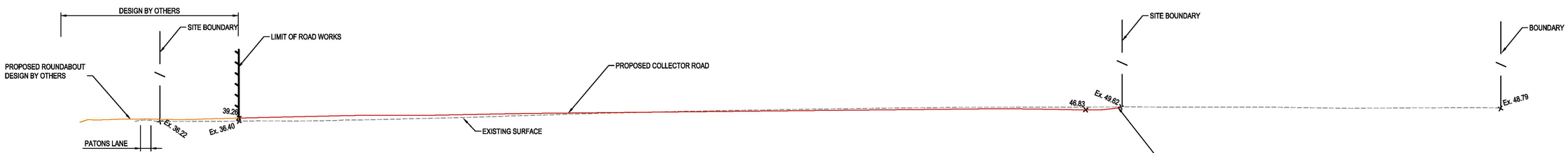
Revision
04



SECTION F
SCALE: 1:2000
C100



SECTION G
SCALE: 1:2000
C100



SECTION H
SCALE: 1:2000
C100

0 40 80 120 160 200m
40 30 20 10
SCALE 1:2000

0 8 16 24 32 40m
8 6 4 2
SCALE 1:400

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
02	ISSUED FOR DA ONLY	LC	NH	19.03.2024
01	ISSUED FOR DA ONLY	LC	NH	13.03.2024

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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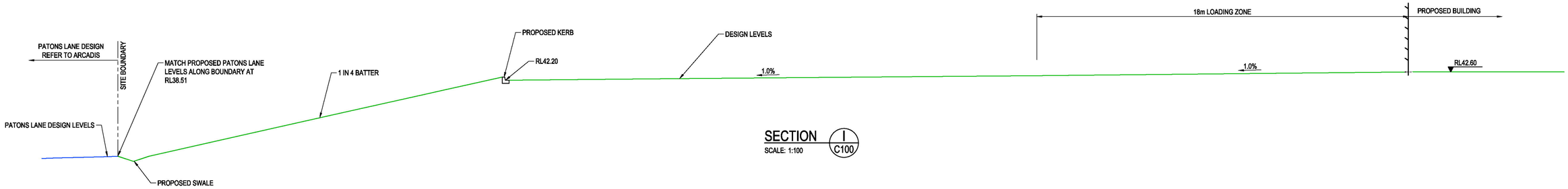
Project: PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

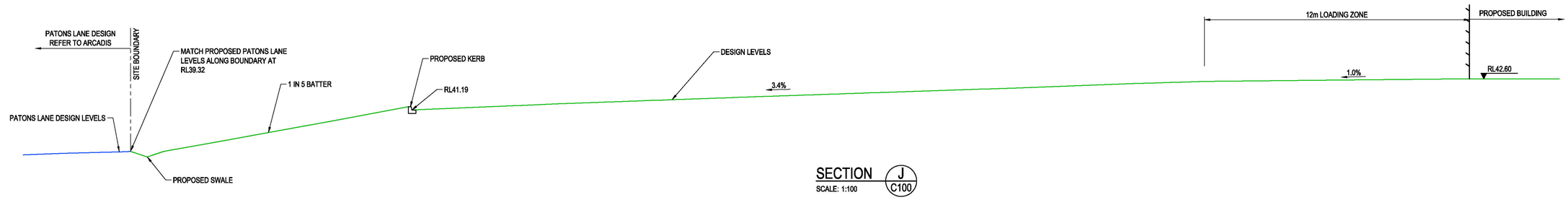
Title: OVERALL SITE SECTIONS
SHEET 2 OF 3

Drawn	Designed	Date
I.Khachab	N.Heazlewod	JAN 2023
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS SHOWN

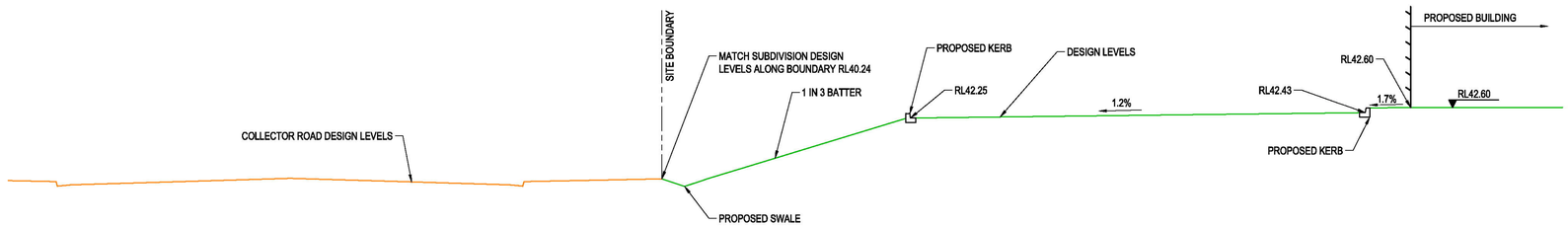
Drawing number: 19221_D2_C141
Revision: 03



SECTION I
SCALE: 1:100 C100



SECTION J
SCALE: 1:100 C100



SECTION K
SCALE: 1:100 C100

NOTE:
1. LEVELS IN BLUE ARE PROPOSED LEVELS OF PATONS LANE. DESIGN BY OTHERS.
2. LEVELS IN GREEN ARE APPROXIMATE FINAL DESIGN LEVELS FOR FUTURE DEVELOPMENT ON PAD 1.

0 2 4 6 8 10m
2 1
SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	AFe	NH	30.06.2024

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

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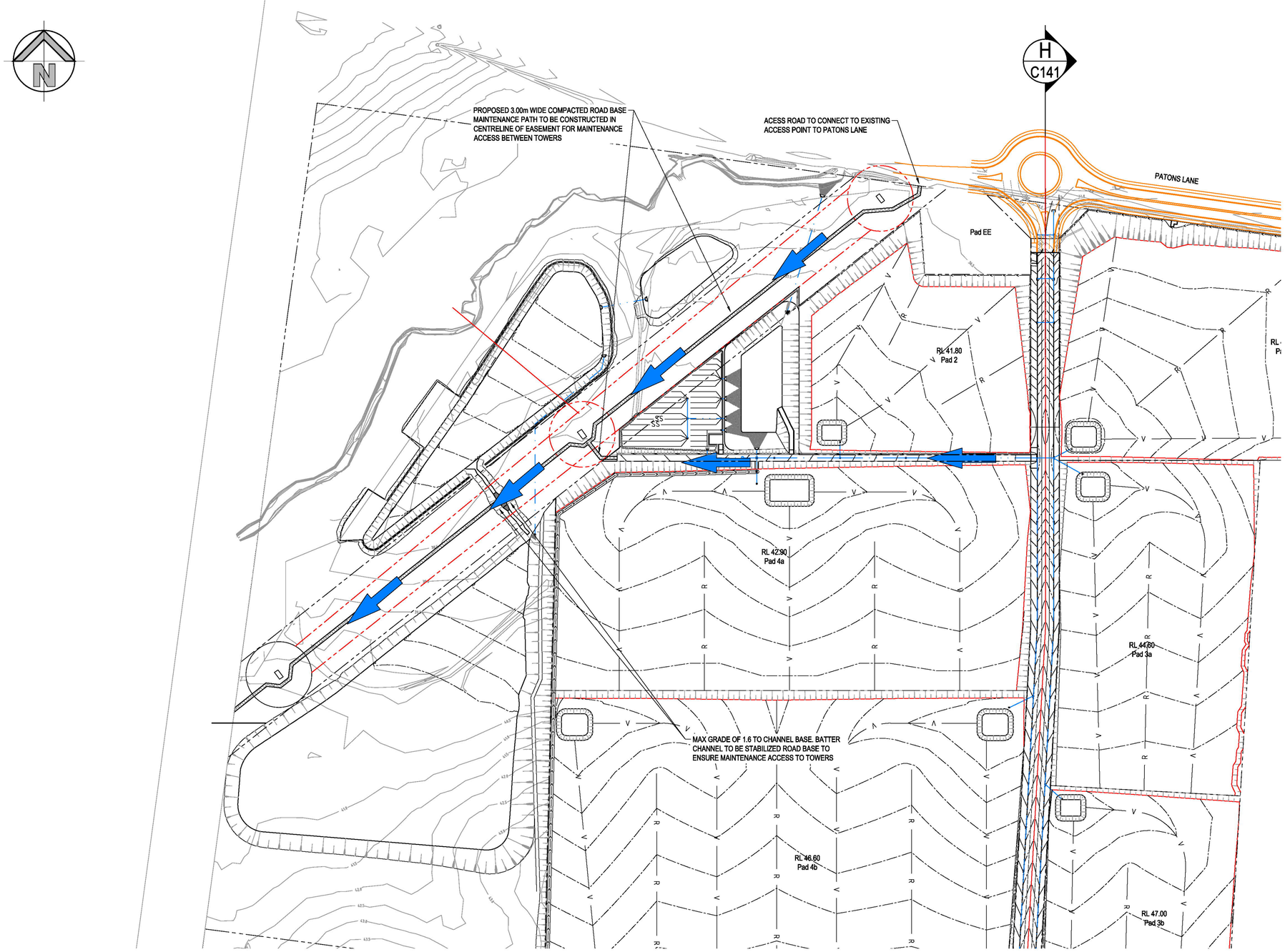
Project: PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: OVERALL SITE SECTIONS
SHEET 3 OF 3

Drawn	Designed	Date
A.Fernandes	N.Heazlewod	AUG 2024
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS SHOWN

Drawing number: 19221_D2_C142
Revision: 01



LEGEND

TRANSGRID MAINTENANCE ACCESS ROUTE

PROPOSED ROAD BASE

TRANSGRID WORKS PLAN

SCALE: 1:2000

NOTE:
LEVELS AND SITE GRADING SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.

0 40 80 120 160 200m

40 30 20 10

SCALE 1:2000

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	AFe	NH	30.08.2024

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

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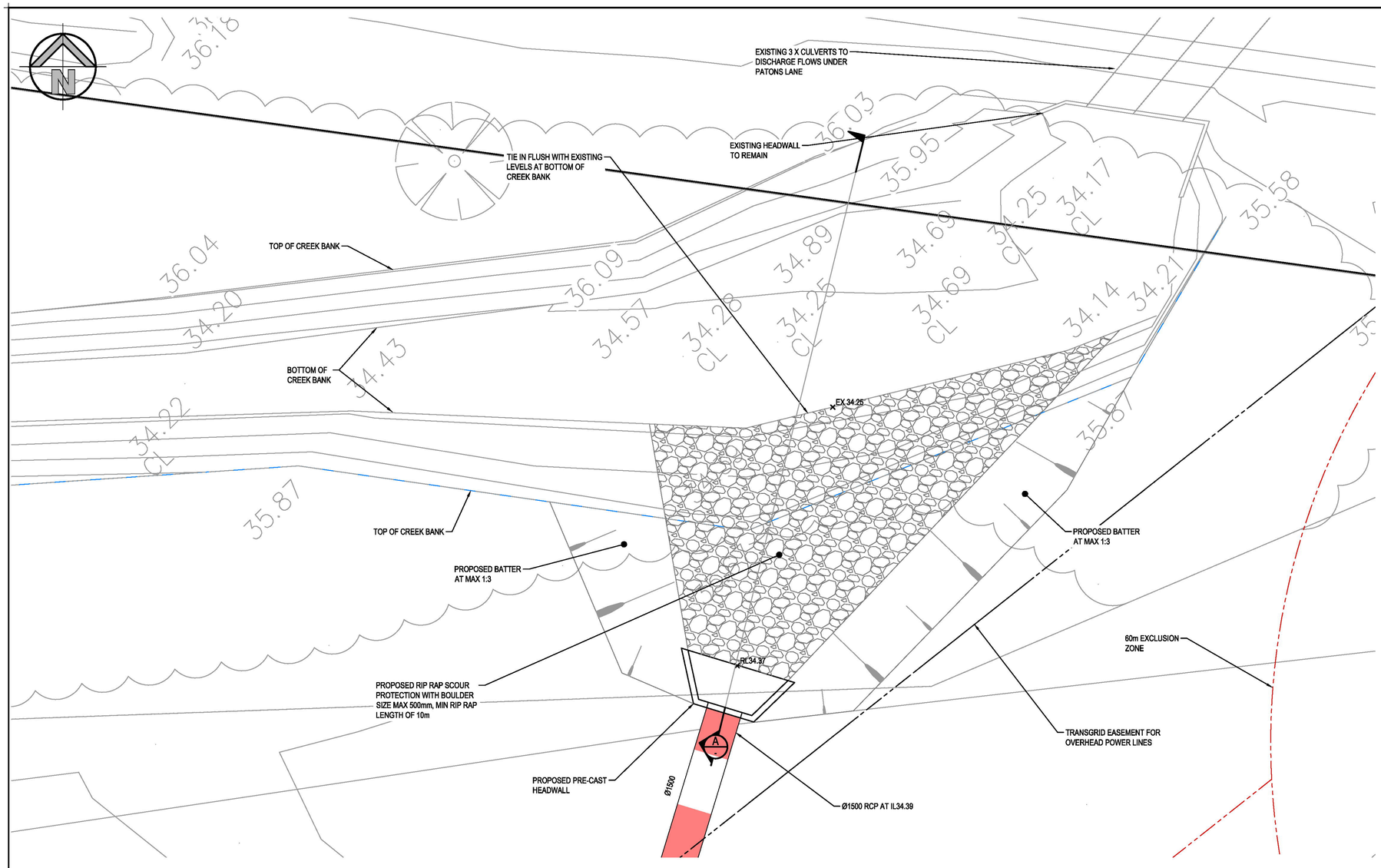
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
TRANSGRID WORKS PLAN

Drawn	Designed	Date
A.Fernandes	N.Heazlewod	AUG 2024
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:2000

Drawing number
19221_D2_C150

Revision
01

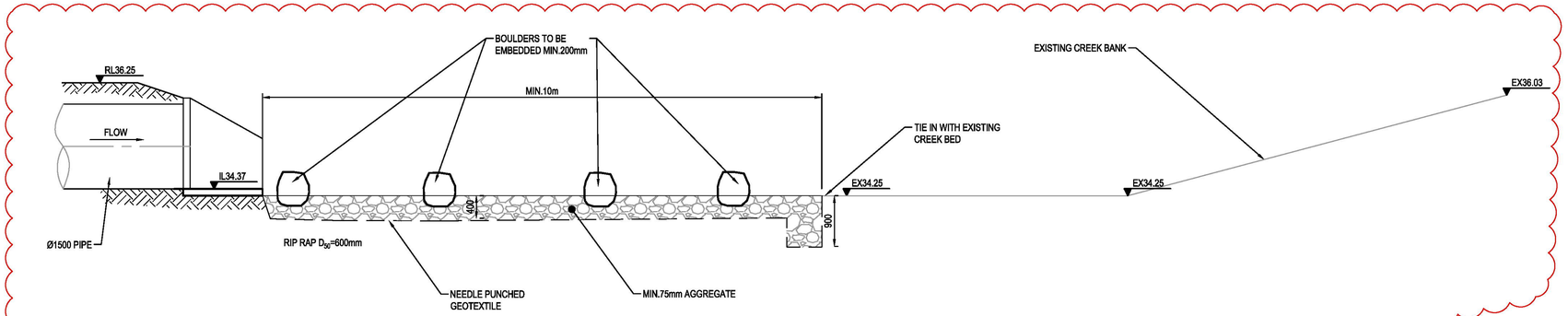


HEADWALL AND SCOUR PROTECTION PLAN

SCALE: 1:100

LEGEND

- PROPOSED STORMWATER PIPE
- PROPOSED BOUNDARY
- TRANSGRID EXCLUSION ZONE
- 47.00 — PROPOSED CONTOURS
- 47.0 — EXISTING CONTOURS
- PROPOSED LINTEL ONGRADE & SAG PITS
- 37.50 × 36.55 — PROPOSED SPOT LEVEL "BY OTHERS" / EXISTING SPOT LEVEL
- SS — SS — PROPOSED SUBSOIL LINE
- IL97.19 / Ø300 / 30m / 1% / IL96.89 — STORMWATER UPSTREAM INVERT RL. / STORMWATER PIPE DIAMETER & CLASS / STORMWATER PIPE LENGTH / STORMWATER PIPE GRADE / STORMWATER DOWNSTREAM INVERT RL.
- PROPOSED SURFACE INLET PITS
- PROPOSED JUNCTION PITS
- A-1 — LINE LETTER / PIT NUMBER — PROPOSED PIT TAG
- PROPOSED BATTER LINE



SECTION A–A

SCALE: 1:50

NOTE:

- LEVELS SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.
- BOULDERS AND AGGREGATE IN SCOUR PROTECTION TO BE LAID ON MORTAR BED TO REDUCE CHANCE OF SCOUR.

0 2 4 6 8 10m

SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	MS	NH	24.09.2024
01	ISSUED FOR DA ONLY	NH	NH	30.08.2024

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: NORTH-WEST OUTLET PLAN

Drawn	Designed	Date
I.Khachab	N.Heazlewod	AUG 2024
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:100

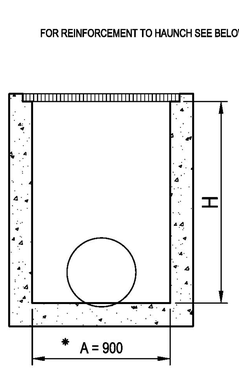
Drawing number: 19221_D2_C160

Revision: 02

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.

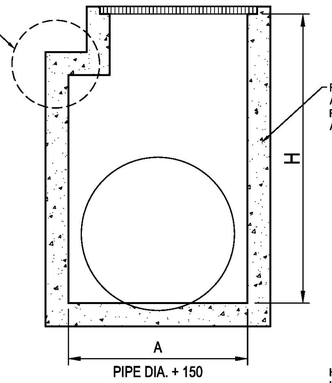
1. SELECT PIT CHAMBER USING THE STEPS BELOW:
2. SELECT PIT CHAMBER SIZE DEPENDING ON THE PIPE DIAMETERS.
3. CHECK PIT CHAMBER SIZE TO SATISFY DEPTH TO INVERT REQUIREMENTS.
   CHECK PIT CHAMBER DIMENSIONS TO SATISFY THE SKEW ANGLE IN THE TABLE.



SECTION
NTS

*A = 600 FOR PIPES UP TO 375 DIA.

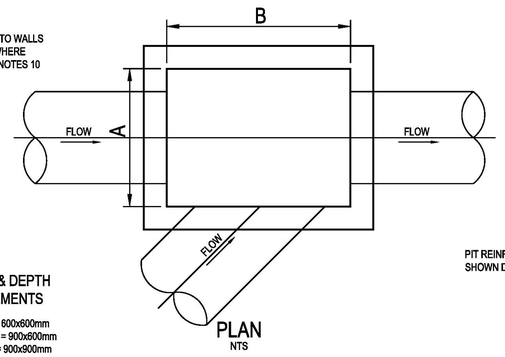
1 PIT CHAMBER DIMENSIONS FOR PIPES UP TO 600 DIA.



SECTION
NTS

1 PIT CHAMBER FOR PIPES GREATER THAN 600 DIA.

FOR B = 600mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 225mm
FOR B = 900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 375mm
FOR B = 1200mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 600mm
FOR B = 1500mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 825mm
FOR B = 1900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 1050mm

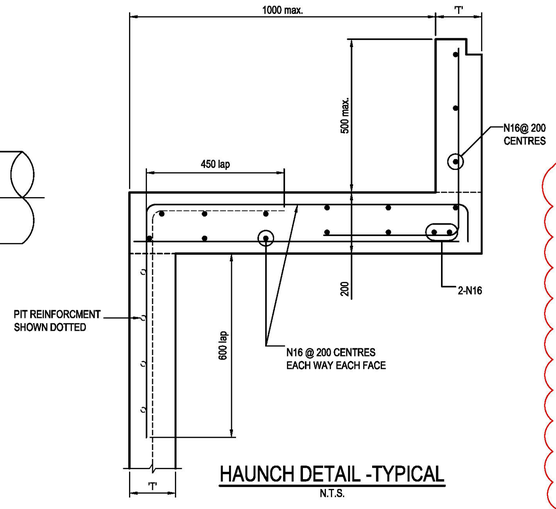


PLAN
NTS

3 PIT CHAMBER FOR SIDE ENTRY ON SKEW

2 PIT SIZE & DEPTH REQUIREMENTS

H = 0-900mm - AxB = 600x600mm
H = 900-1200mm - AxB = 900x600mm
H = >1200mm - AxB = 900x900mm



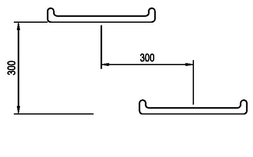
HAUNCH DETAIL -TYPICAL
N.T.S.

PIT LID AND HEADWALL SCHEDULE

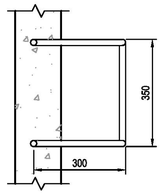
PIT/STRUCTURE NUMBER	DESCRIPTION
B-6, B-7, B-8, B-9, B-10, B-11, B-12, B-13, B-14, B-15, B-16, B-17, B-18, B-6a, B-7a, B-8a, B-9a, B-10a, B-11a, B-12a, B-13a, B-14a, B-15a, B-16a, B-17a, B-18a, C-2, C-3, C-4, C-2a, C-2a, C-3a, C-4a, A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, A-1a, A-2a, A-3a, A-4a, A-5a, A-6a, A-7a, A-8a, A-9a, A-10a, A-11a, B-0	PROPOSED 1.8m KERB INLET PIT IN ACCORDANCE WITH PENRITH CITY COUNCIL'S REQUIREMENTS.
D-1, E-1, E-2, E-3, E-4, E-5, E-6, E-7, E-8, H-2, H-3, H-4, H-5, H-6, H-7, H-8, H-11, H-12, H-13, H-14, K-1, K-2, K-3	PROPOSED INLET PIT WITH 900x900 HINGED HEAVY DUTY CLASS "D" GRATED LID IN ACCORDANCE WITH PENRITH CITY COUNCIL'S REQUIREMENTS.
B-0	PROPOSED INLET PIT WITH 1200x1200 HINGED HEAVY DUTY CLASS "D" GRATED LID IN ACCORDANCE WITH PENRITH CITY COUNCIL'S REQUIREMENTS.
B-2, B-3, B-4, B-5, J-2, J-3	PROPOSED INLET PIT WITH 1500x1500 HINGED HEAVY DUTY CLASS "D" GRATED LID IN ACCORDANCE WITH PENRITH CITY COUNCIL'S REQUIREMENTS.
B-9, J-1	PROPOSED INLET CUSTOM PIT WITH 2.4m x 3.6m GRATED LID WITHIN BASIN.
G-1, G-2, G-3, G-4, E-8, E-10, E-11, E-12, E-13, K-4, K-5	PROPOSED PRE-CAST HEADWALL

NOTE:

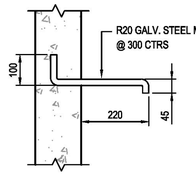
ALL INLET PITS TO BE FITTED WITH OCEAN PROTECT PIT BASKET FOR WATER QUALITY TREATMENT PURPOSES.



ELEVATION

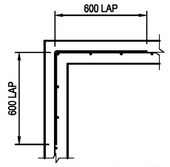


PLAN

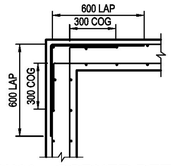


SECTION

TYPICAL STEP IRON DETAIL
SCALE 1:10



150 WALL - CORNER DETAIL
SCALE 1:20

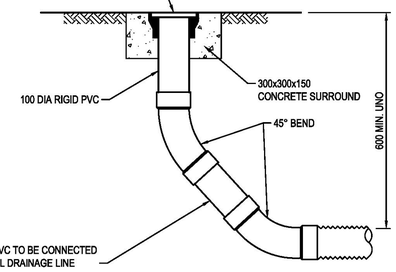


200 WALL - CORNER DETAIL
SCALE 1:20

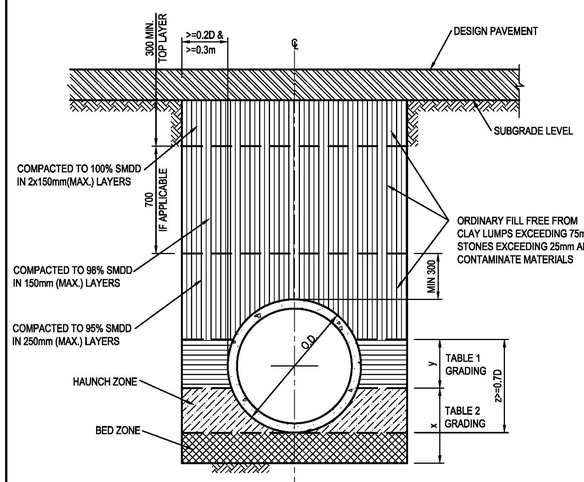
TABLE 1	
SIEVE SIZE (MM)	WEIGHT PASISNG (%)
75.0	100
9.5	100 TO 50
2.36	100 TO 30
0.60	50 TO 15
0.075	25 TO 0

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

LIGHT DUTY IN LANDSCAPED AND PEDESTRIAN AREAS HEAVY DUTY IN VEHICULAR PAVEMENTS. AIR TIGHT CAST IRON OR BRASS SCREW OR BOLT DOWN CAP.



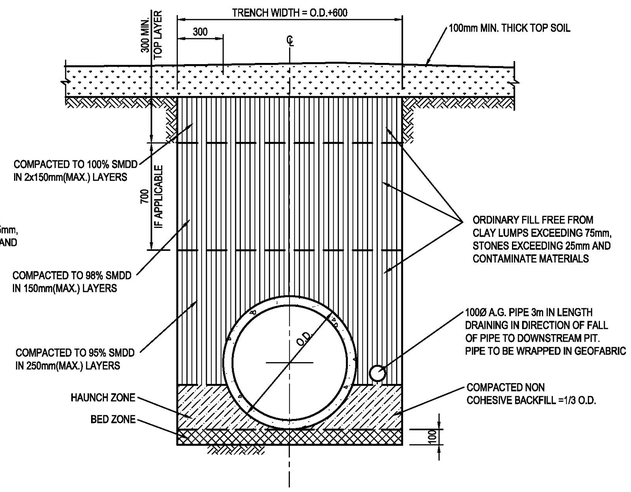
FLUSHING POINT (FP)
SCALE 1:10
NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED



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

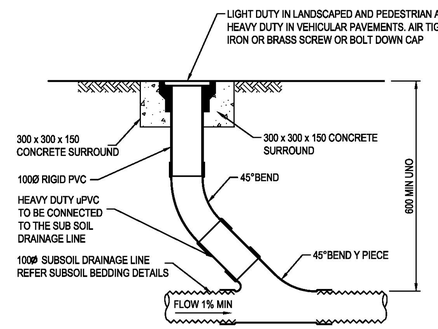


PIPE TRENCH INSTALLATION IN LANDSCAPE AREAS

(H1 & H2 SUPPORT)
SCALE 1:20

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

LIGHT DUTY IN LANDSCAPED AND PEDESTRIAN AREAS
HEAVY DUTY IN VEHICULAR PAVEMENTS. AIR TIGHT CAST IRON OR BRASS SCREW OR BOLT DOWN CAP



INTERMEDIATE RISER (IR)
SCALE 1:10
NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED

FOR DA ONLY

0 400 800 1200 1600 2000mm
400 200
SCALE 1:20

0 200 400 600 800 1000mm
200 100
SCALE 1:10

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

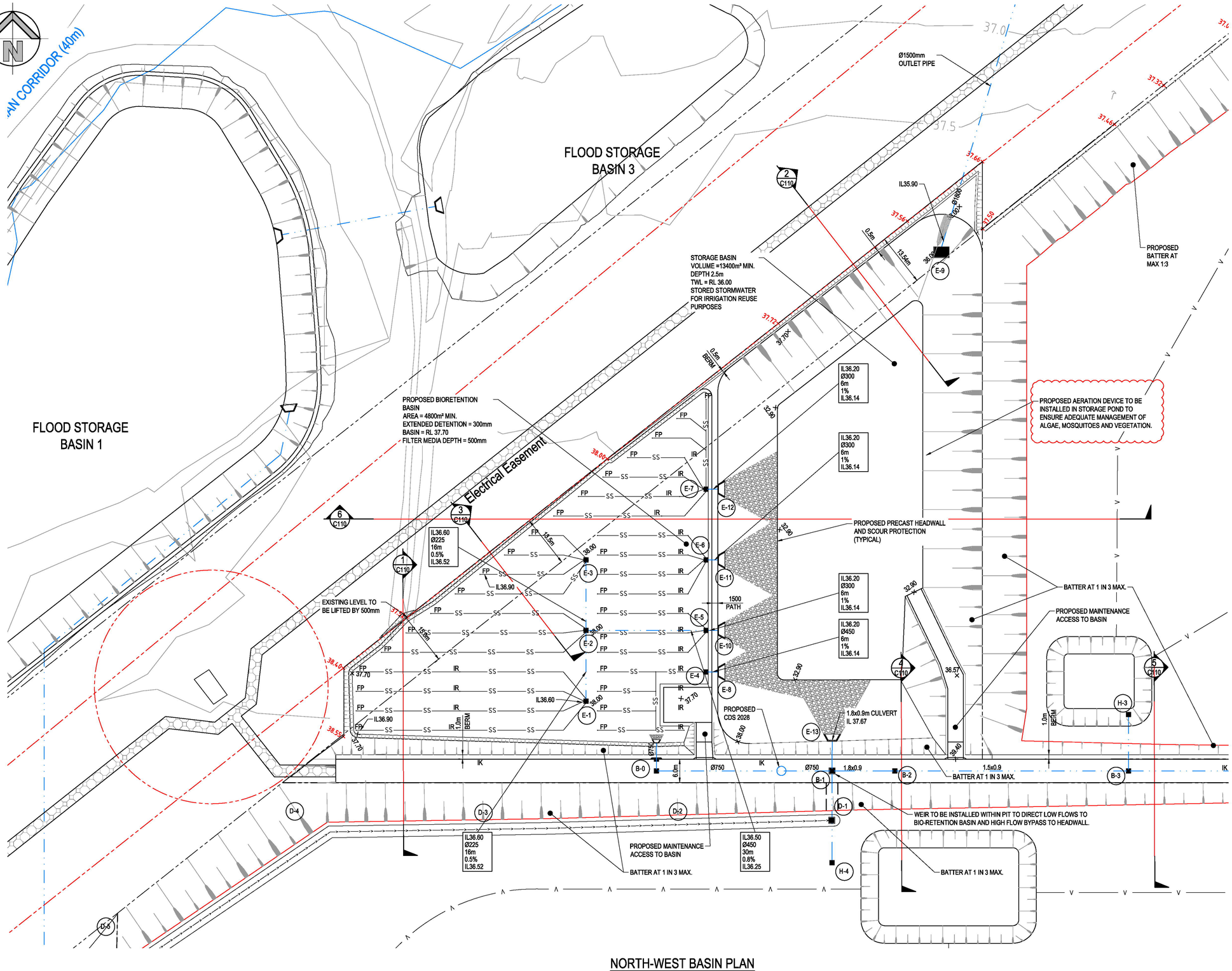
henry&hymas

Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: STORMWATER MISCELANEOUS DETAILS AND PIT LID SCHEDULE

Drawn	Designed	Date
M.Pereira	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number: 19221_D2_C200
Revision: 04



NORTH-WEST BASIN PLAN

SCALE: 1:500

0 10 20 30 40 50m

10 8 6 4 2

SCALE 1:500

NOTE:

- ALL SUBSOIL PIPES TO FALL AT MIN 0.5%.
- FLUSHING POINTS TO BE PROVIDED AT UPSTREAM END OF ALL SUBSOIL RUNS.
- INTERMEDIATE RISERS TO BE INSTALLED EVERY 30m.

NOTE:

LEVELS AND SITE GRADING SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.

FOR DA ONLY

SURVEY INFORMATION

SURVEYED BY WATSDON BUCHAN

DATUM: A.H.D.

ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
06	ISSUED FOR DA ONLY	NH	NH	12.02.2025
05	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
04	ISSUED FOR DA ONLY	AFe	NH	15.03.2024
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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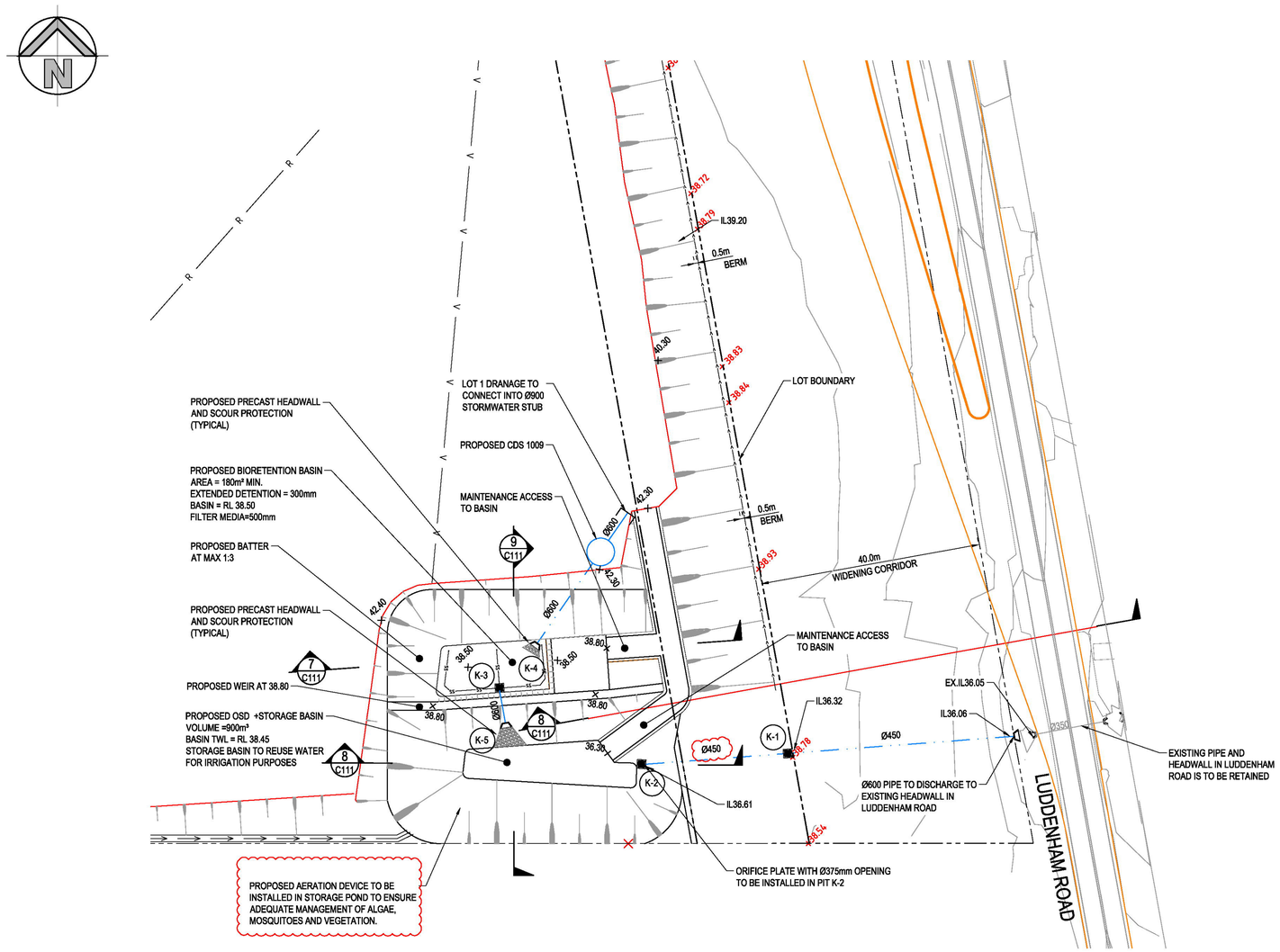
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: NORTH-WEST BASIN PLAN

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:500

Drawing number: 19221_D2_C201

Revision: 06



NORTH-EAST BASIN PLAN

SCALE: 1:500

0 10 20 30 40 50m

10 8 6 4 2

SCALE 1:500

NOTE:
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SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR DA ONLY	NH	NH	12.02.2025
06	ISSUED FOR DA ONLY	MS	NH	24.09.2024
05	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
04	ISSUED FOR DA ONLY	AFe	NH	15.03.2024
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client
HB & B PROPERTY PTY LTD

Architect
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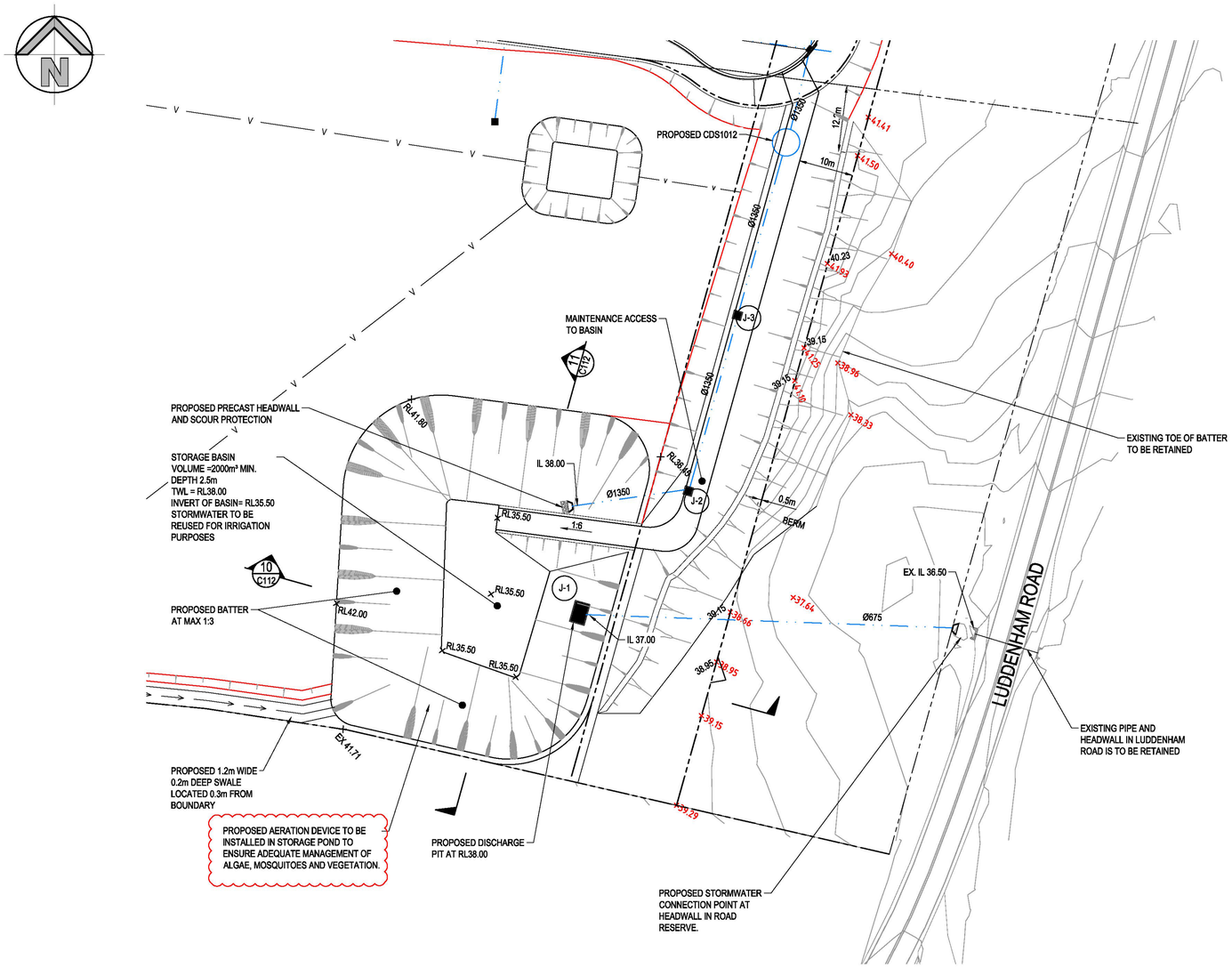
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
NORTH-EAST BASIN PLAN

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:500

Drawing number
19221_D2_C202

Revision
07



SOUTH-EAST BASIN PLAN

SCALE: 1:500

NOTE:
LEVELS AND SITE GRADING SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR DA ONLY	NH	NH	12.02.2025
06	ISSUED FOR DA ONLY	MS	NH	24.09.2024
05	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
04	ISSUED FOR DA ONLY	AFe	NH	14.03.2024
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client
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Architect
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Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
SOUTH-EAST BASIN PLAN

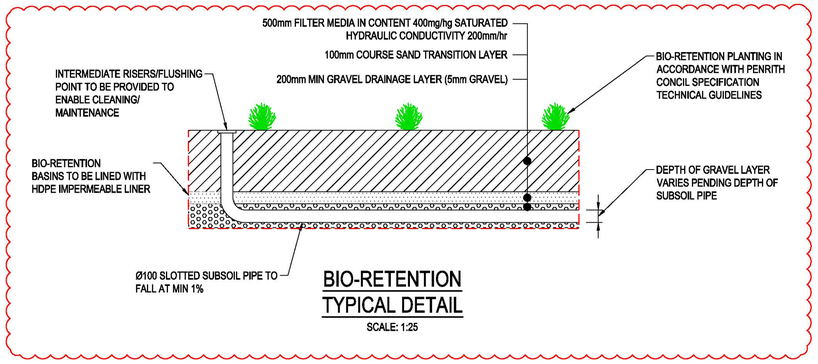
Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:500

Drawing number
19221_D2_C203

Revision
07

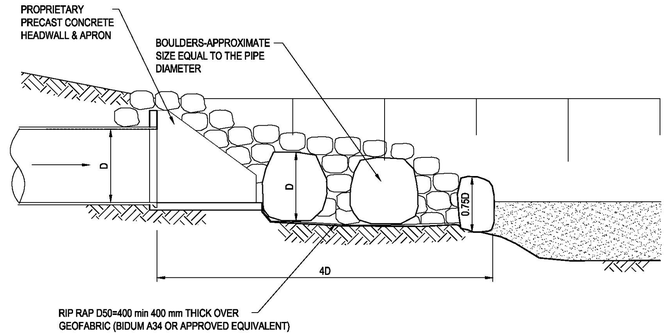
BIO-RETENTION BASIN NOTES

- BIO-RETENTION BASIN TO BE IN ACCORDANCE WITH PERINTH COUNCIL WSUD GUIDELINES.
- NO SUBMERGED ZONE REQUIRED AS THE BASIN WILL BE IRRIGATED IN PERPETUITY.
- APPROXIMATE 8 PLANTS PER SQUARE METRE.
- 300mm EXTENDED DETENTION
- POSSIBLE SPECIES IN BASIN:(TO BE DOCUMENTED AT FUTURE STAGE)
- BLADY GRASS
- KNOBBY CLUB RUSH
- COMMON RUSH
- GREY TUSSOCK GRASS
- KANGAROO GRASS
- BLUE FLAX-LILY
- TUSSOCK SEDGE



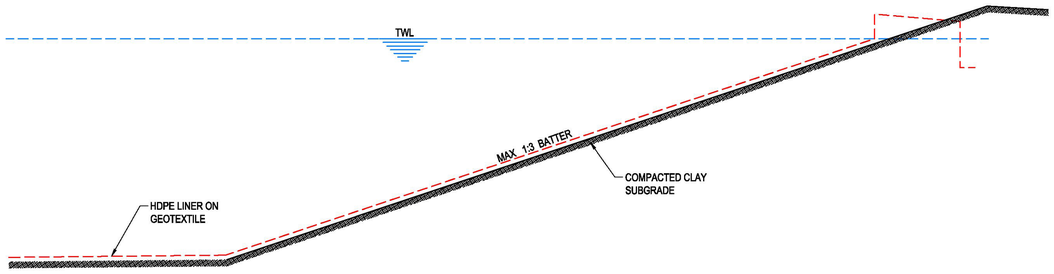
BIO-RETENTION TYPICAL DETAIL

SCALE: 1:25



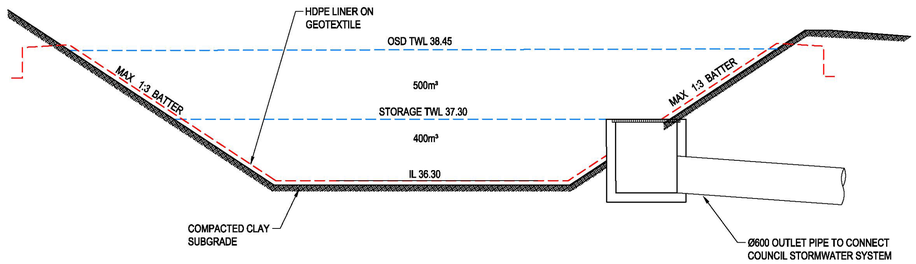
SCOUR PROTECTION TYPICAL DETAIL

SCALE 1:50



STORAGE POND TYPICAL DETAIL

SCALE: 1:50



COMBINED DETENTION AND STORAGE BASIN TYPICAL DETAIL

SCALE: 1:50

0 500 1000 1500 2000 2500mm
500 300 100
SCALE 1:25

0 1000 2000 3000 4000 5000mm
1000 600 200
SCALE 1:50

NOTE:
LEVELS AND SITE GRADING SHOWN ARE PRELIMINARY ONLY AND ARE SUBJECT TO CHANGE DURING THE DESIGN DEVELOPMENT PHASE.

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

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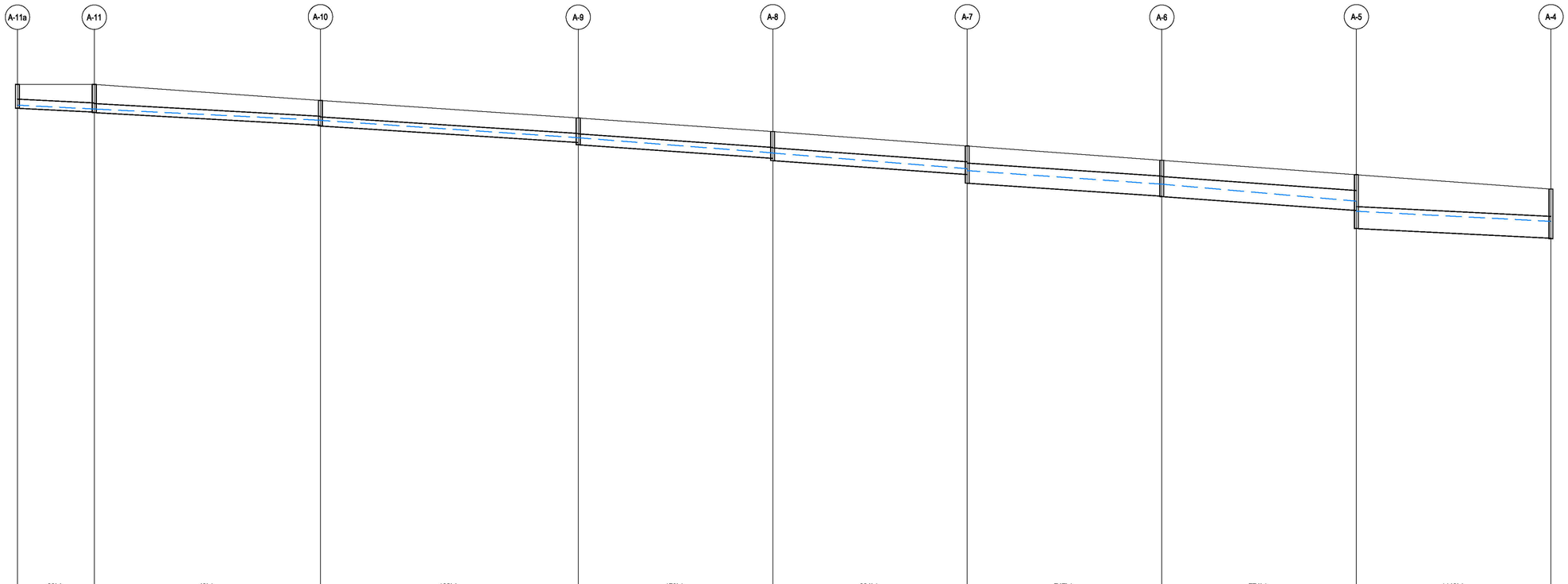
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: BASIN TYPICAL DETAILS

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number: 19221_D2_C204
Revision: 04



Flow (L/s)	23L/s	43L/s	102L/s	170L/s	221L/s	747L/s	771L/s	1448L/s
Pipe Size & Class	Ø375 RCP	Ø375 RCP	Ø375 RCP	Ø450 RCP	Ø525 RCP	Ø825 RCP	Ø825 RCP	900mm
Grade (%)	1.00%	1.12%	1.28%	1.40%	1.43%	1.32%	1.43%	1.00%

Datum R.L Datum El. 20

H.G.L. LEVELS 1 in 100 YEAR ARI	46.188	46.029	46.029	45.569	45.563	44.850	44.848	44.226	44.221	43.578	43.498	42.942	42.942	42.245	41.829	41.416	41.415
SURFACE R.L.	47.04		47.04	46.38		45.66		45.10		44.51		43.92		43.33		42.74	
INVERT R.L.	46.060	45.902	45.880	45.359	45.330	44.652	44.560	44.000	43.910	43.338	42.980	42.450	42.430	41.858	41.120	40.720	40.700
PIPE CHAINAGE	0		15.79		62.29		115.29		155.29		195.29		235.29		275.29		315.29

REFER TO DWG 19221_D2_C211 FOR CONTINUATION

LINE A - A-11a-TO A-4

SCALE: H 1:500 /V 1:100

0 2 4 6 8 10m
2 1
SCALE 1:100

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	AFe	NH	01.03.2024
02	ISSUED FOR DA ONLY	MS	NH	17.10.2023
01	ISSUED FOR DA ONLY	AFe	NH	12.10.2023

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

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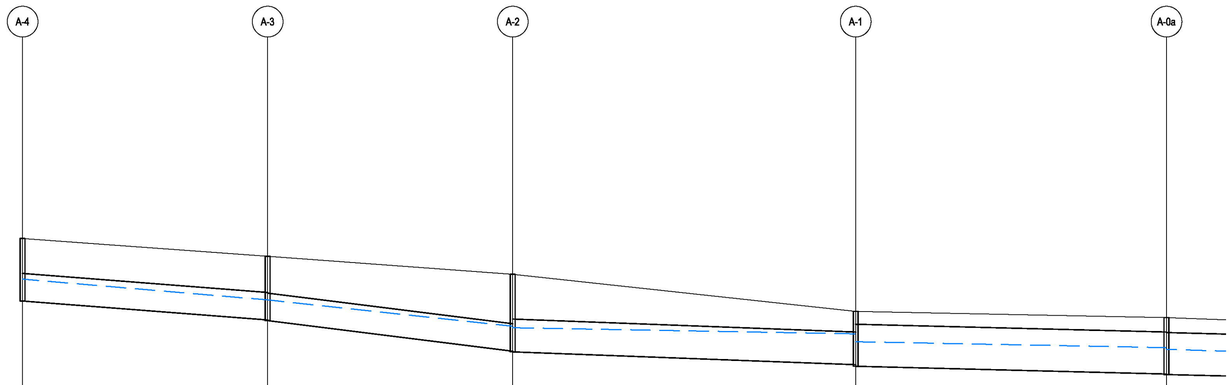
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: STORMWATER LONGITUDINAL SECTIONS
SHEET 1 OF 8

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number: 19221_D2_C210
Revision: 03

REFER TO DWG 19221_D2_C210 FOR CONTINUATION



Flow (L/s)	1469L/s	1490L/s	1506L/s	2303L/s	
Pipe Size & Class	Ø900 RCP	Ø900 RCP	Ø1050 RCP	Ø1350 RCP	
Grade (%)	1.55%	2.50%	0.75%	0.50%	
Datum R.L Datum El. 20					
H.G.L. LEVELS 1 in 100 YEAR ARI	41.415 / 40.736	40.795 / 39.878	39.826 / 39.630	39.371 / 39.178	39.120
SURFACE R.L.	42.74	42.16	41.57	40.38	40.16
INVERT R.L.	40.700 / 40.080	40.060 / 39.050	39.040 / 38.620	38.570 / 38.316	38.300
PIPE CHAINAGE	315.29	355.29	395.29	451.29	502.01

LINE A - A-4 TO OSD CONTINUATION

SCALE: H 1:500 /V 1:100

0 2 4 6 8 10m
2 1
SCALE 1:100

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	AFe	NH	01.03.2024
02	ISSUED FOR DA ONLY	MS	NH	17.10.2023
01	ISSUED FOR DA ONLY	AFe	NH	12.10.2023

Client
HB & B PROPERTY PTY LTD
Architect
NETTLETONTRIBE

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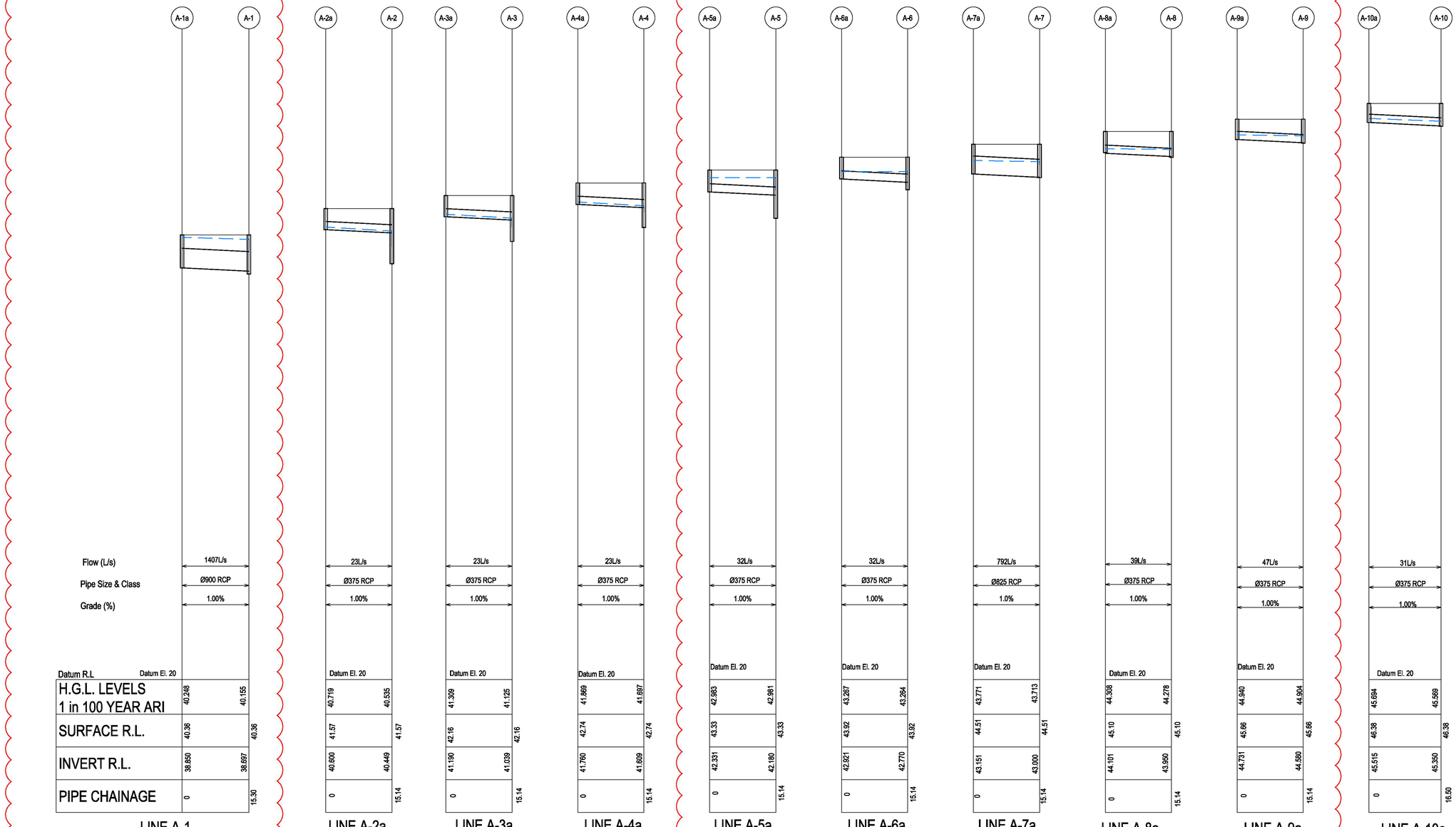
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
STORMWATER LONGITUDINAL SECTIONS
SHEET 2 OF 8

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number 19221_D2_C211
Revision 03



LINE A-1
SCALE: H 1:500 /V 1:100

LINE A-2a
SCALE: H 1:500 /V 1:100

LINE A-3a
SCALE: H 1:500 /V 1:100

LINE A-4a
SCALE: H 1:500 /V 1:100

LINE A-5a
SCALE: H 1:500 /V 1:100

LINE A-6a
SCALE: H 1:500 /V 1:100

LINE A-7a
SCALE: H 1:500 /V 1:100

LINE A-8a
SCALE: H 1:500 /V 1:100

LINE A-9a
SCALE: H 1:500 /V 1:100

LINE A-10a
SCALE: H 1:500 /V 1:100

0 2 4 6 8 10m
2 1
SCALE 1:100

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	MS	NH	30.08.2024
03	ISSUED FOR DA ONLY	MS	NH	01.03.2024
02	ISSUED FOR DA ONLY	MS	NH	17.10.2023
01	ISSUED FOR DA ONLY	AFe	NH	12.10.2023

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

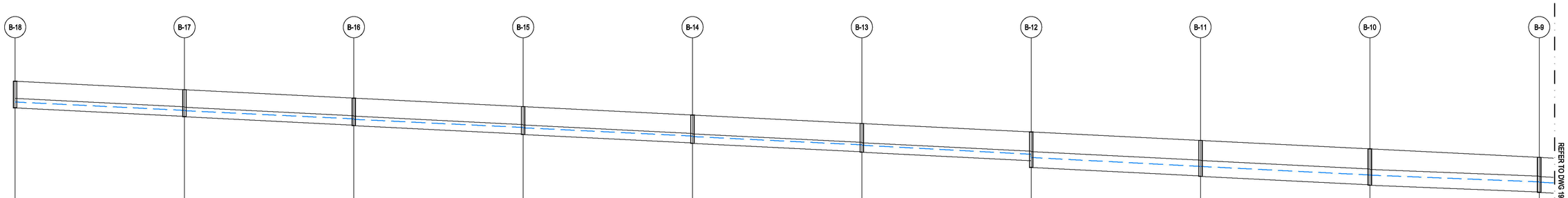
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HILLS

Title
STORMWATER LONGITUDINAL SECTIONS
SHEET 3 OF 8

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number
19221_D2_C212

Revision
04



REFER TO DWG 19221_D2_C214 FOR CONTINUATION

Flow (L/s)	169L/s	170L/s	184L/s	207L/s	214L/s	228L/s	595L/s	614L/s	614L/s
Pipe Size & Class	Ø450 RCP	Ø450 RCP	Ø450 RCP	Ø450 RCP	Ø450 RCP	Ø450 RCP	Ø750 RCP	Ø750 RCP	Ø750 RCP
Grade (%)	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	0.80%

Datum R.L Datum El. 20

H.G.L. LEVELS 1 in 100 YEAR ARI	46.261	45.862	45.848	45.460	45.440	45.054	45.038	44.649	44.623	44.231
	45.862	45.848	45.460	45.440	45.054	45.038	44.649	44.623	44.231	44.214
SURFACE R.L.	47.24	46.84	46.44	46.04	45.64	45.24	44.84	44.44	44.04	43.64
INVERT R.L.	45.980	45.580	45.560	45.160	45.140	44.740	44.720	44.320	44.300	43.900
	45.580	45.560	45.160	45.140	44.740	44.720	44.320	44.300	43.900	43.880
PIPE CHAINAGE	0	40.00	80.00	120.00	160.00	200.00	240.00	280.00	320.00	360.00

H.G.L. LEVELS 1 in 100 YEAR ARI	43.796	43.634	43.210	43.210	42.805	42.802	42.480	42.467		
	43.634	43.210	43.210	42.805	42.802	42.480	42.467			
SURFACE R.L.	44.84	44.44	44.04	43.64						
INVERT R.L.	43.480	43.160	42.760	42.740	42.340	42.320	42.000	41.980		
	43.160	42.760	42.740	42.340	42.320	42.000	41.980			
PIPE CHAINAGE	240.00	280.00	320.00	360.00						

LINE B - B-18 TO B-9

SCALE: H 1:500 /V 1:100

0 20 40 60 80 100m
20 15 10 5
SCALE 1:1000

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	MS	NH	17.10.2023
01	ISSUED FOR DA ONLY	AFe	NH	12.10.2023

Client
HB & B PROPERTY PTY LTD

Architect
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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

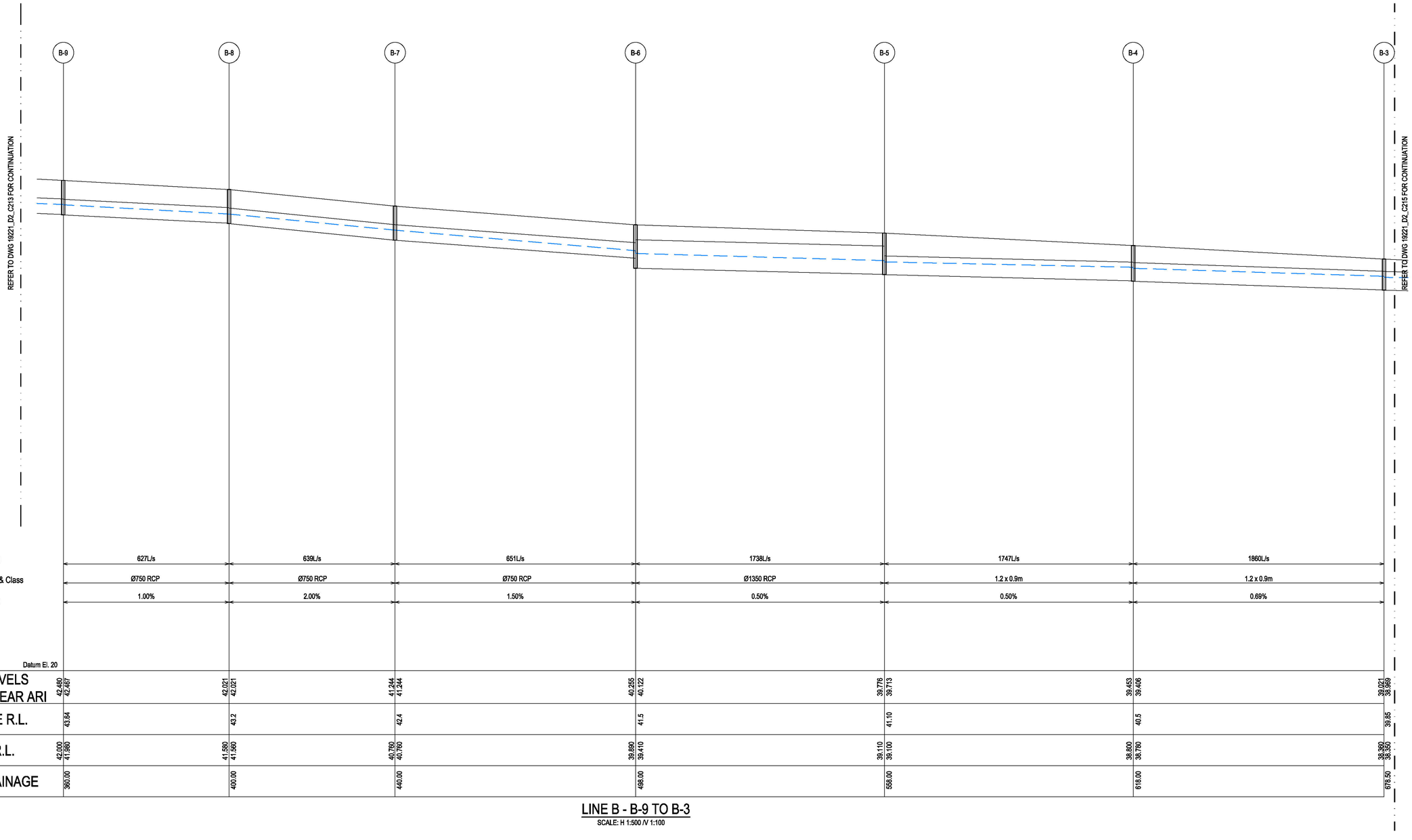
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
STORMWATER LONGITUDINAL SECTIONS
SHEET 4 OF 8

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number
19221_D2_C213

Revision
03



Flow (L/s)	627L/s	639L/s	651L/s	1738L/s	1747L/s	1860L/s
Pipe Size & Class	Ø750 RCP	Ø750 RCP	Ø750 RCP	Ø1350 RCP	1.2 x 0.9m	1.2 x 0.9m
Grade (%)	1.00%	2.00%	1.50%	0.50%	0.50%	0.69%

Datum R.L Datum El. 20

H.G.L. LEVELS 1 in 100 YEAR ARI	42.480	42.467	42.021	42.021	41.244	41.244	40.255	40.122	39.776	39.713	39.453	39.406	39.021	38.969
SURFACE R.L.	43.64		43.2		42.4		41.5		41.10		40.5		39.85	
INVERT R.L.	42.000	41.990	41.580	41.560	40.760	40.760	39.890	39.410	39.110	39.100	38.800	38.790	38.360	38.350
PIPE CHAINAGE	360.00		400.00		440.00		498.00		558.00		618.00		678.50	

LINE B - B-9 TO B-3

SCALE: H 1:500 /V 1:100

0 2 4 6 8 10m
2 1
SCALE 1:100

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	MS	NH	17.10.2023
01	ISSUED FOR DA ONLY	AFe	NH	12.10.2023

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

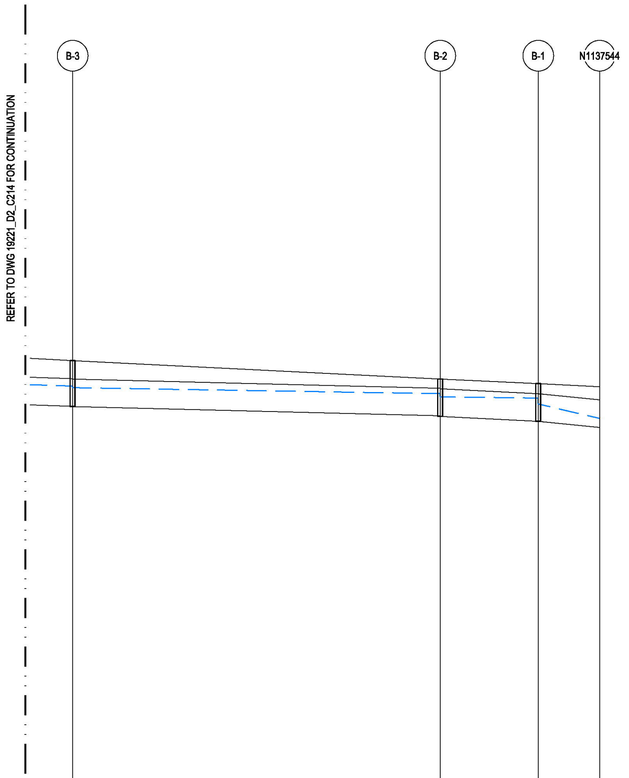
henry&hymas

Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: STORMWATER LONGITUDINAL SECTIONS
SHEET 5 OF 8

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

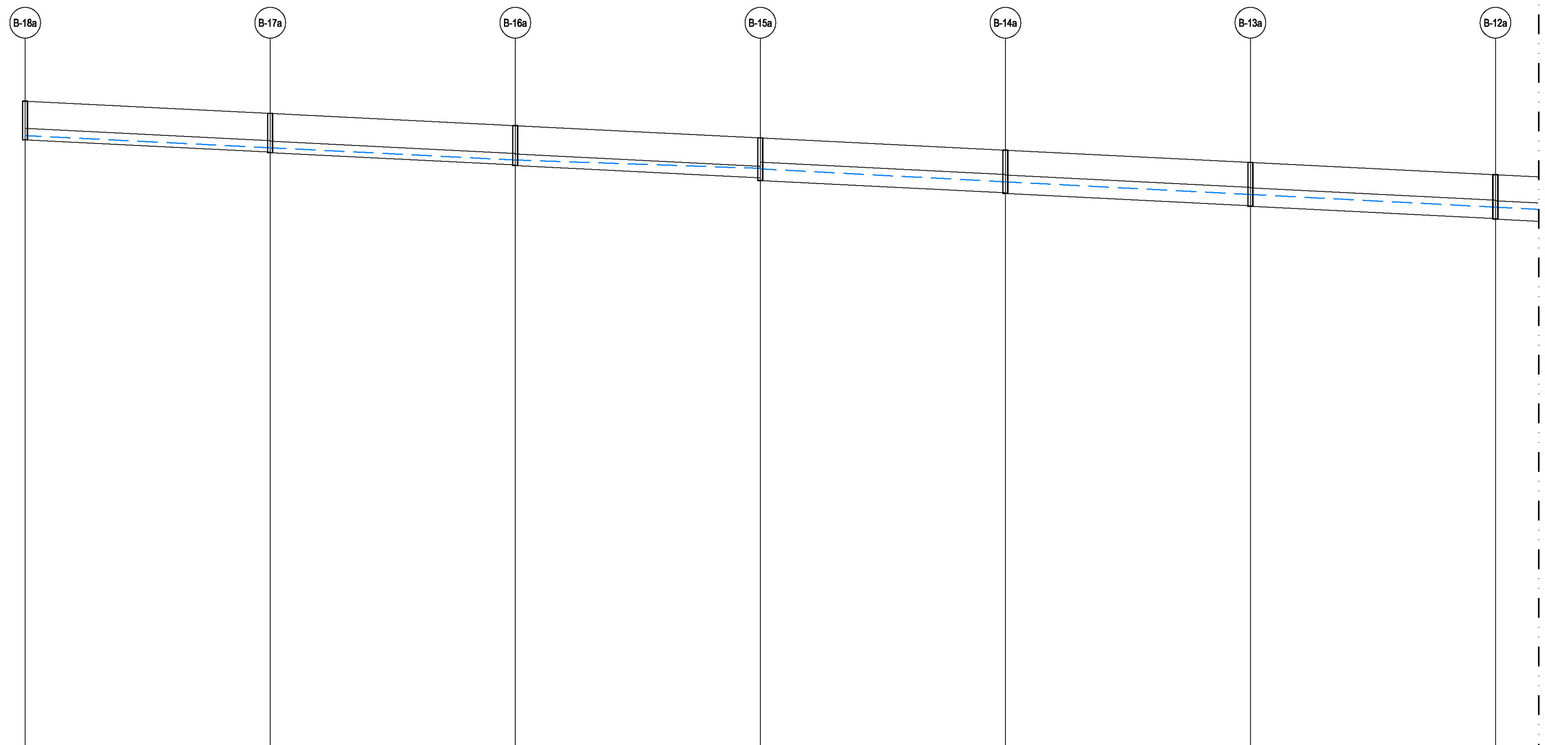
Drawing number: 19221_D2_C214
Revision: 03



Flow (L/s)	2006L/s	2003L/s	3195L/s	
Pipe Size & Class	1.5 x 0.9m	1.8 x 0.9m	2.4 x 0.9m	
Grade (%)	0.50%	1.00%	2.00%	
Datum R.L Datum El. 20				
H.G.L. LEVELS 1 in 100 YEAR ARI	39.021 / 38.969	38.773 / 38.666	38.632 / 37.885	38.436
SURFACE R.L.	39.85	39.25		39.1 / 39.0
INVERT R.L.	38.360 / 38.350	38.050 / 38.030	37.870 / 37.670	37.870
PIPE CHAINAGE	676.50	736.50		754.50 / 764.50

LINE B - B-3 TO N1137544

SCALE: H 1:500 /V 1:100



Flow (L/s)	26L/s	52L/s	72L/s	344L/s	351L/s	361L/s
Pipe Size & Class	Ø375 RCP	Ø375 RCP	Ø375 RCP	Ø375 RCP	Ø600 RCP	Ø600 RCP
Grade (%)	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Datum R.L Datum El. 20						
H.G.L. LEVELS 1 in 100 YEAR ARI	46.117	45.722 / 45.722	45.321 / 45.321	45.050 / 45.031	44.609 / 44.609	44.195 / 44.195	43.783 / 43.783
SURFACE R.L.	47.24	46.84	46.44	46.04	45.64	45.24	44.84
INVERT R.L.	45.980	45.580 / 45.560	45.160 / 45.140	44.740 / 44.650	44.250 / 44.230	43.830 / 43.810	43.410 / 43.390
PIPE CHAINAGE	0	40.00	80.00	120.00	160.00	200.00	240.00

LINE Ba - B-18a TO B-12a

SCALE: H 1:500 /V 1:100

0 2 4 6 8 10m

2 1

SCALE 1:100

0 10 20 30 40 50m

10 8 6 4 2

SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION

SURVEYED BY WATSDON BUCHAN

DATUM: A.H.D.

ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	MS	NH	17.10.2023
01	ISSUED FOR DA ONLY	AFe	NH	12.10.2023

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

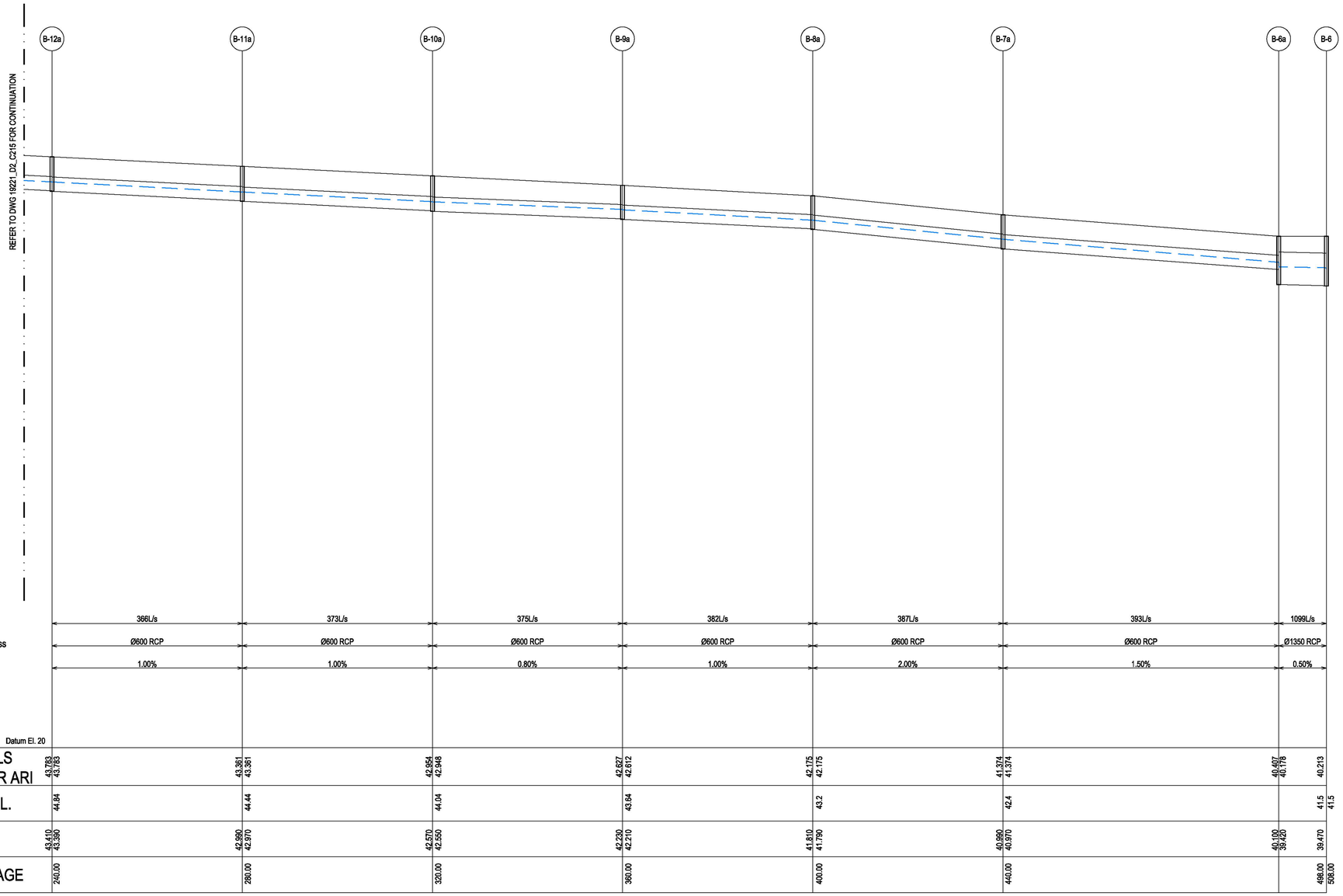
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: STORMWATER LONGITUDINAL SECTIONS
SHEET 6 OF 8

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number: 19221_D2_C215

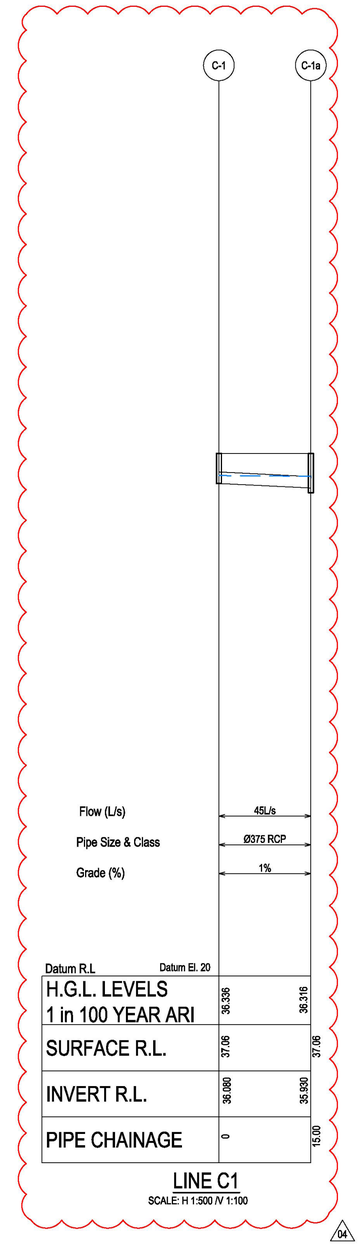
Revision: 03



Flow (L/s)	366L/s	373L/s	375L/s	382L/s	387L/s	393L/s	1099L/s
Pipe Size & Class	Ø600 RCP	Ø600 RCP	Ø600 RCP	Ø600 RCP	Ø600 RCP	Ø600 RCP	Ø1350 RCP
Grade (%)	1.00%	1.00%	0.80%	1.00%	2.00%	1.50%	0.50%
Datum R.L Datum El. 20							
H.G.L. LEVELS 1 in 100 YEAR ARI	43.783 43.783	43.361 43.361	42.954 42.948	42.627 42.612	42.175 42.175	41.374 41.374	40.407 40.176 40.213
SURFACE R.L.	44.84	44.44	44.04	43.84	43.2	42.4	41.5 41.5
INVERT R.L.	43.410 43.390	42.990 42.970	42.570 42.550	42.230 42.210	41.810 41.790	40.990 40.970	40.100 39.420 39.470
PIPE CHAINAGE	240.00	280.00	320.00	360.00	400.00	440.00	498.00 506.00

LINE Ba - B-12a TO B-6

SCALE: H 1:500 /V 1:100



Flow (L/s)	45L/s	
Pipe Size & Class	Ø375 RCP	
Grade (%)	1%	
Datum R.L Datum El. 20		
H.G.L. LEVELS 1 in 100 YEAR ARI	36.336	36.316
SURFACE R.L.	37.06	37.06
INVERT R.L.	36.060	35.930
PIPE CHAINAGE	0	15.00

LINE C1

SCALE: H 1:500 /V 1:100

04

0 20 40 60 80 100m
20 15 10 5
SCALE 1:1000

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	MS	NH	30.08.2024					
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024					
02	ISSUED FOR DA ONLY	MS	NH	17.10.2023					
01	ISSUED FOR DA ONLY	MP	NH	12.10.2023					

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

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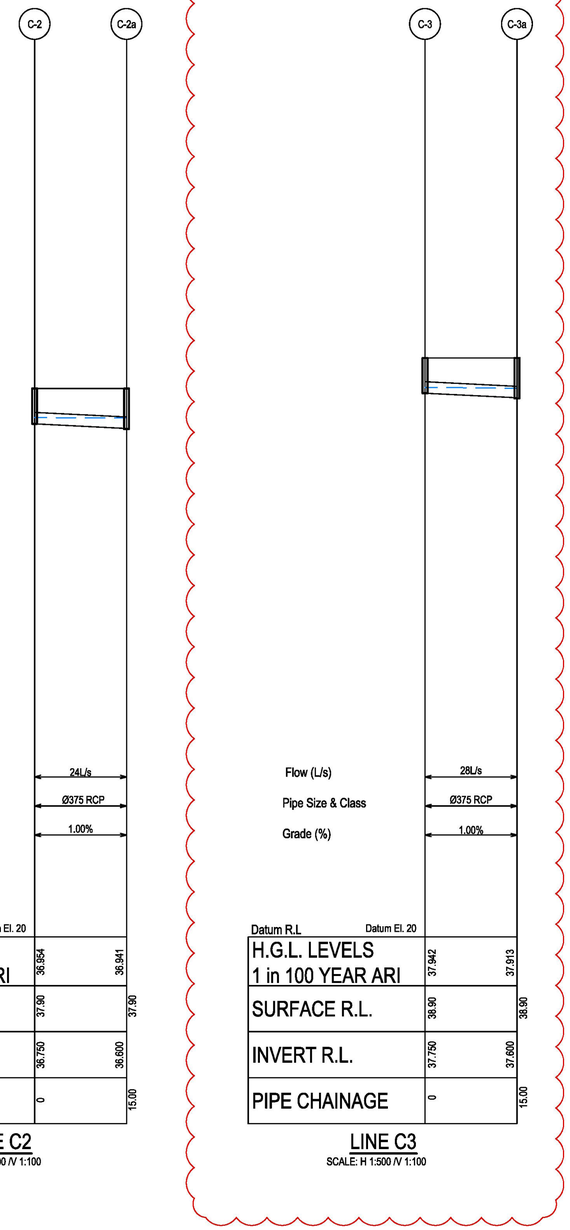
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
STORMWATER LONGITUDINAL SECTIONS
SHEET 7 OF 8

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number: 19221_D2_C216

Revision: 04



Flow (L/s)	24L/s	
Pipe Size & Class	Ø375 RCP	
Grade (%)	1.00%	
Datum R.L	Datum El. 20	
H.G.L. LEVELS 1 in 100 YEAR ARI	36.954	36.941
SURFACE R.L.	37.90	37.90
INVERT R.L.	36.750	36.600
PIPE CHAINAGE	0	15.00

LINE C2
SCALE: H 1:500 /V 1:100

Flow (L/s)	28L/s	
Pipe Size & Class	Ø375 RCP	
Grade (%)	1.00%	
Datum R.L	Datum El. 20	
H.G.L. LEVELS 1 in 100 YEAR ARI	37.942	37.913
SURFACE R.L.	38.90	38.90
INVERT R.L.	37.750	37.600
PIPE CHAINAGE	0	15.00

LINE C3
SCALE: H 1:500 /V 1:100

Flow (L/s)	42L/s	
Pipe Size & Class	Ø375 RCP	
Grade (%)	1.00%	
Datum R.L	Datum El. 20	
H.G.L. LEVELS 1 in 100 YEAR ARI	38.934	38.831
SURFACE R.L.	38.87	38.87
INVERT R.L.	38.750	38.600
PIPE CHAINAGE	0	15.00

LINE C4
SCALE: H 1:500 /V 1:100

Flow (L/s)	85L/s	138L/s	185L/s
Pipe Size & Class	Ø375 RCP	Ø375 RCP	Ø450 RCP
Grade (%)	2.00%	2.05%	2.43%
Datum R.L	Datum El. 20		
H.G.L. LEVELS 1 in 100 YEAR ARI	38.792	37.932 37.852	36.955 36.880 36.209 36.159
SURFACE R.L.	38.67	38.90	37.90 37.06
INVERT R.L.	38.580	37.780 37.580	36.760 36.580 35.824 35.780
PIPE CHAINAGE	0	40.00	80.00 112.00

LINE Ca
SCALE: H 1:500 /V 1:100

0 2 4 6 8 10m
2 1
SCALE 1:100

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
03	ISSUED FOR DA ONLY	MB	NH	01.03.2024
02	ISSUED FOR DA ONLY	MS	NH	17.10.2023
01	ISSUED FOR DA ONLY	AFe	NH	12.10.2023

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

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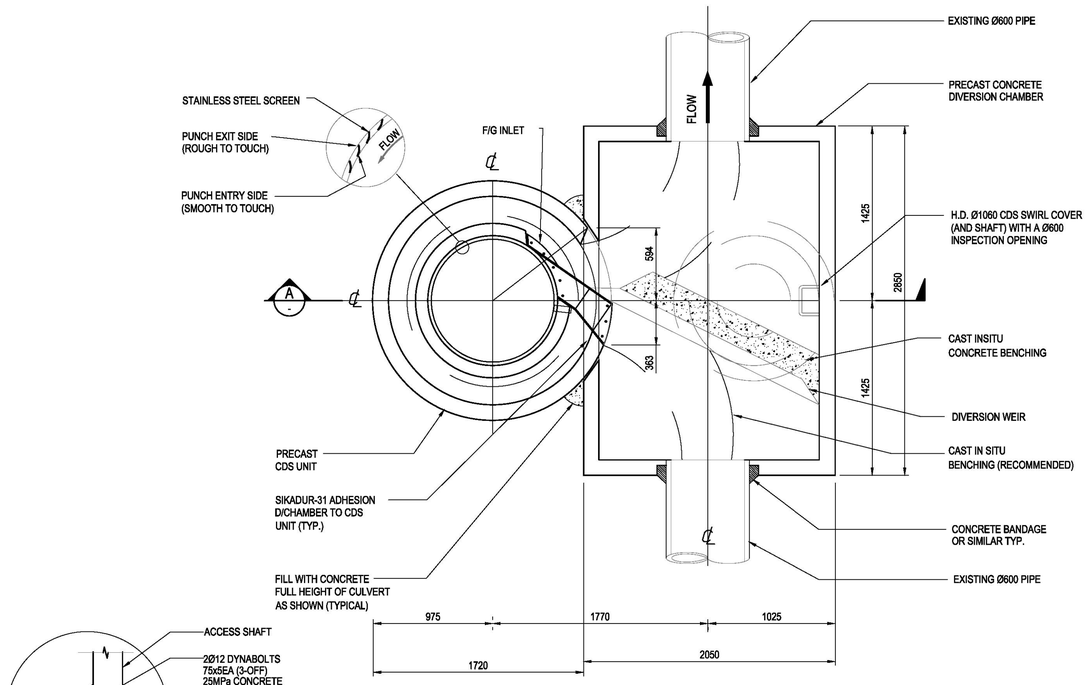
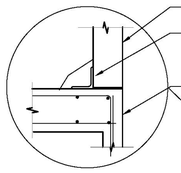
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
STORMWATER LONGITUDINAL SECTIONS
SHEET 8 OF 8

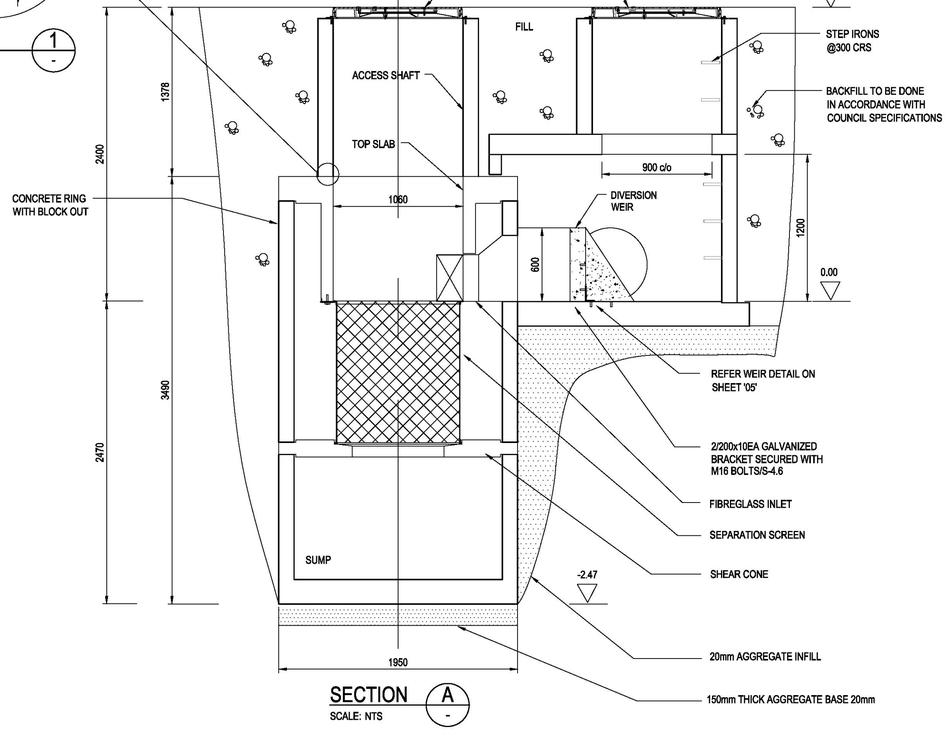
Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number: 19221_D2_C217
Revision: 04



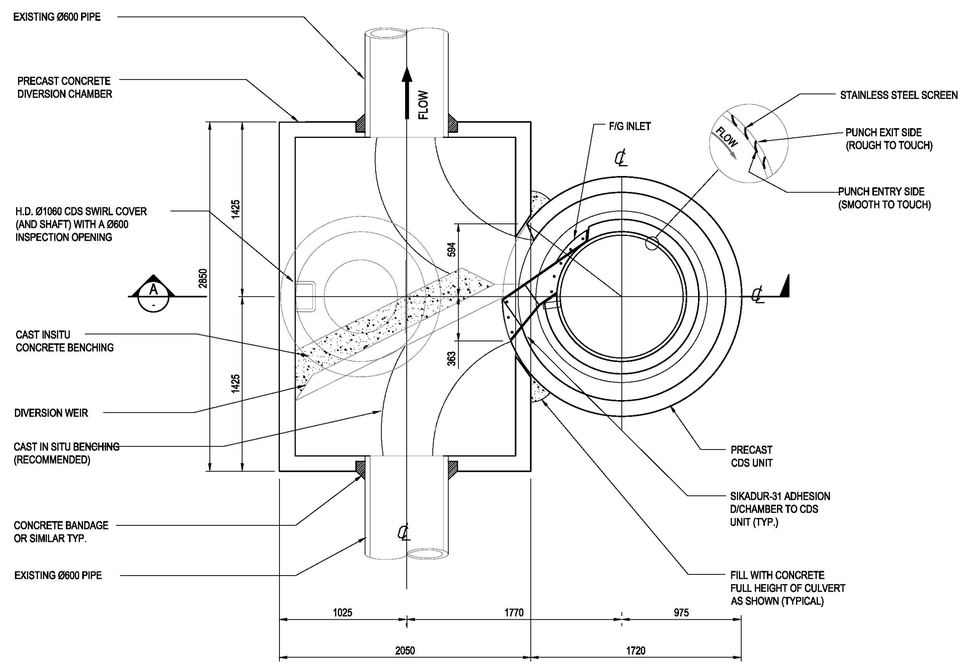


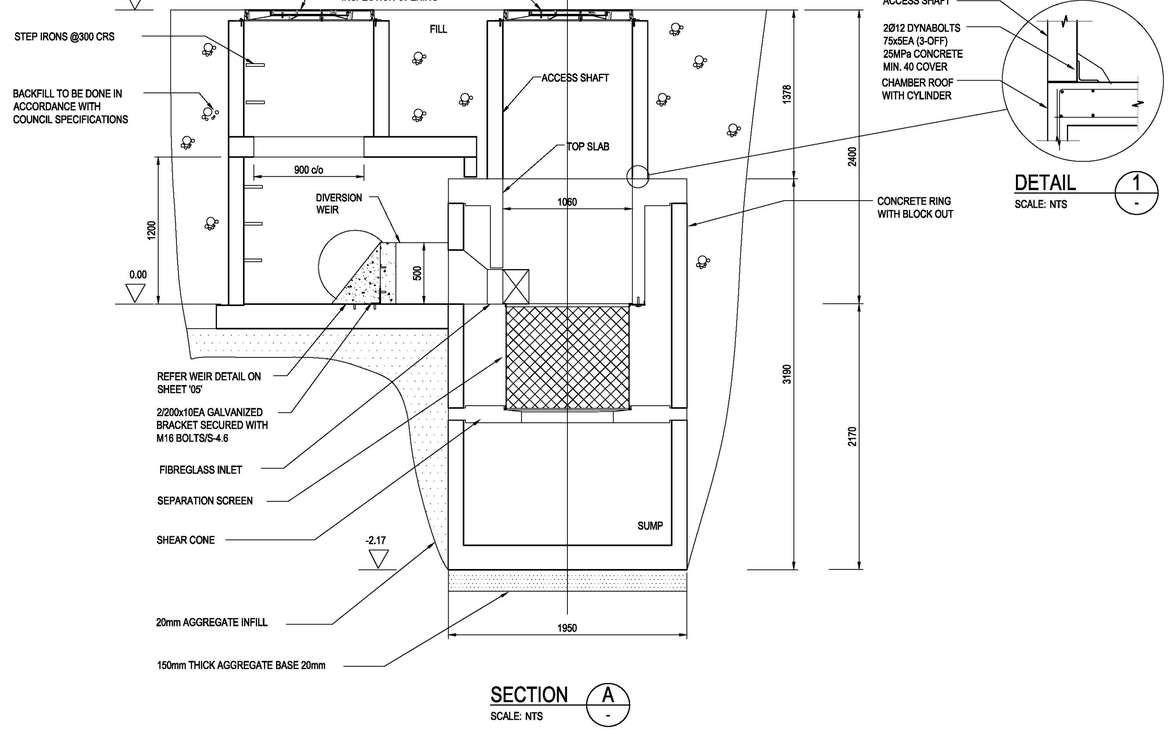
DETAIL 1
SCALE: NTS



SECTION A
SCALE: NTS

CDS UNIT 1012
N.T.S.





DETAIL 1
SCALE: NTS

SECTION A
SCALE: NTS

CDS UNIT 1009
N.T.S.

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	MS	NH	17.10.2023

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

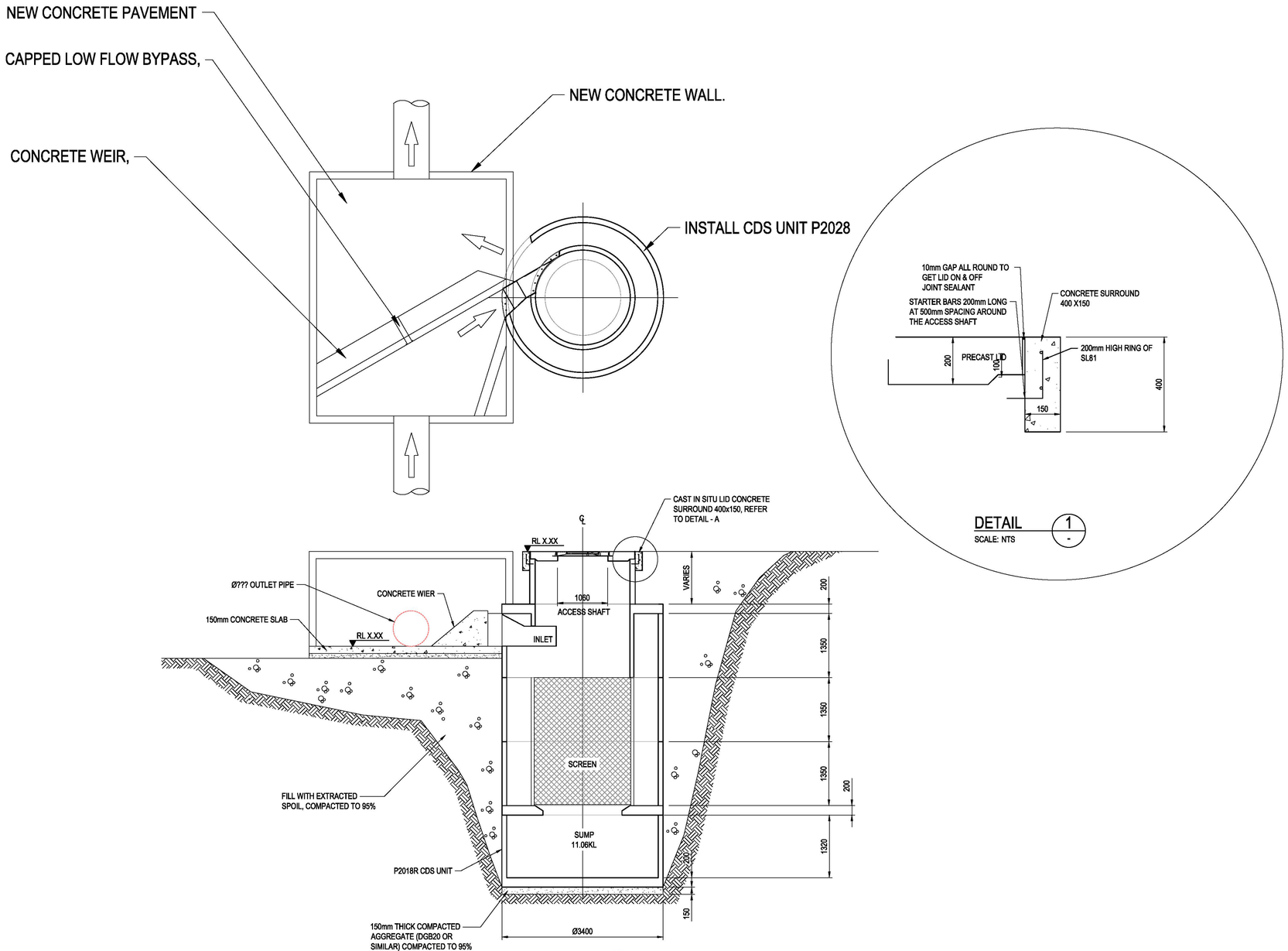
henry&hymas

Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: CDS UNIT TYPICAL DETAILS
SHEET 1 OF 2

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number: 19221_D2_C230
Revision: 01



FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	MS	NH	17.10.2023					

Client
HB & B PROPERTY PTY LTD

Architect
NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

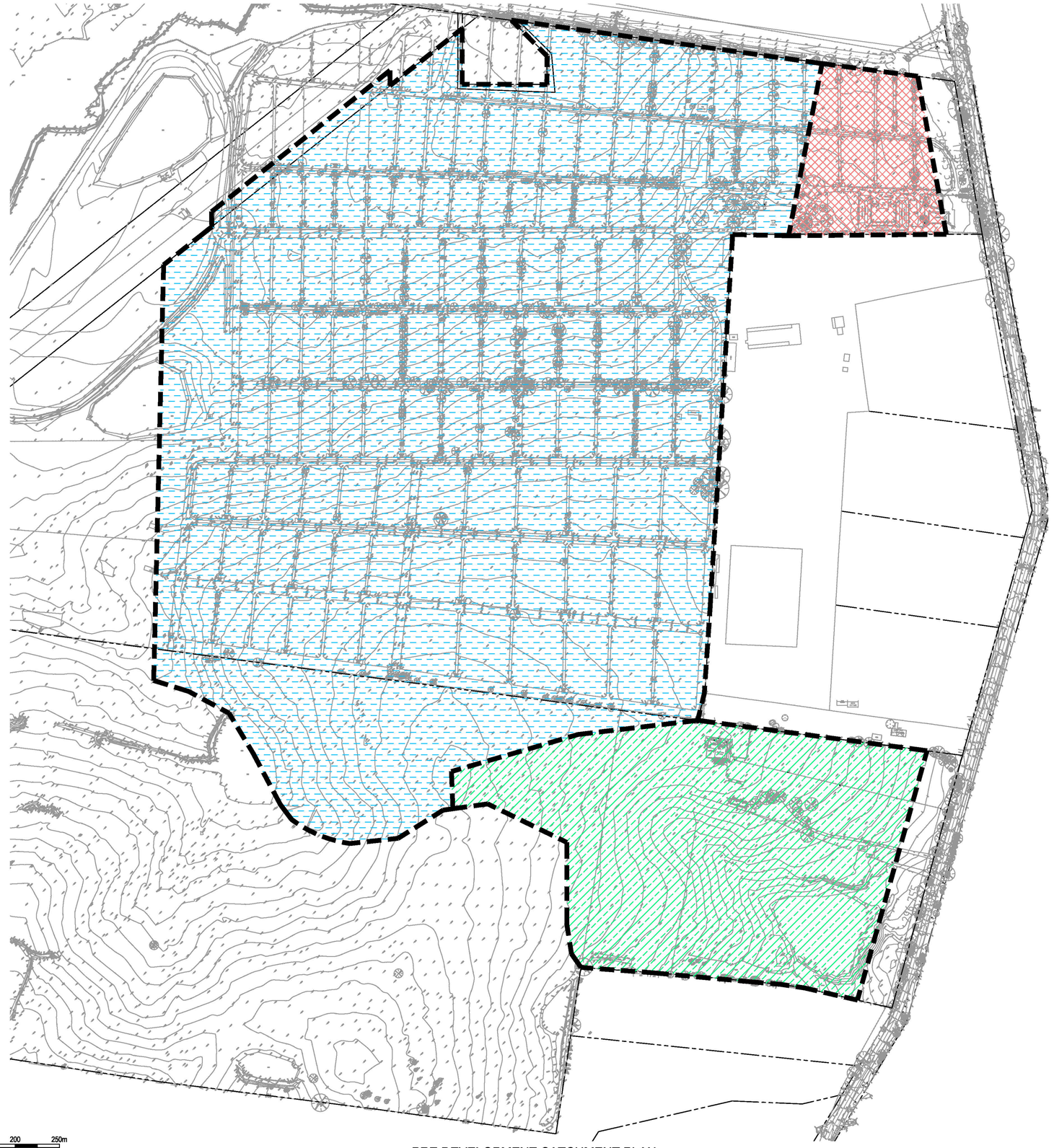
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
CDS UNIT TYPICAL DETAILS
SHEET 2 OF 2

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number
19221_D2_C231

Revision
01



TOTAL AREA = 63.62 ha

NORTH-WEST CATCHMENT
AREA = 49.59 ha

NORTH-EAST CATCHMENT
AREA = 2.68 ha

SOUTH-EAST CATCHMENT
AREA = 11.35 ha

0 50 10 150 200 250m
50 30 10
SCALE 1:2500

PRE DEVELOPMENT CATCHMENT PLAN

SCALE: 1:2500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
02	ISSUED FOR PRELIMINARY	MP	NH	24.09.2023
01	DRAFT	NH	NH	05.06.2023

Client
HB & B PROPERTY PTY LTD

Architect
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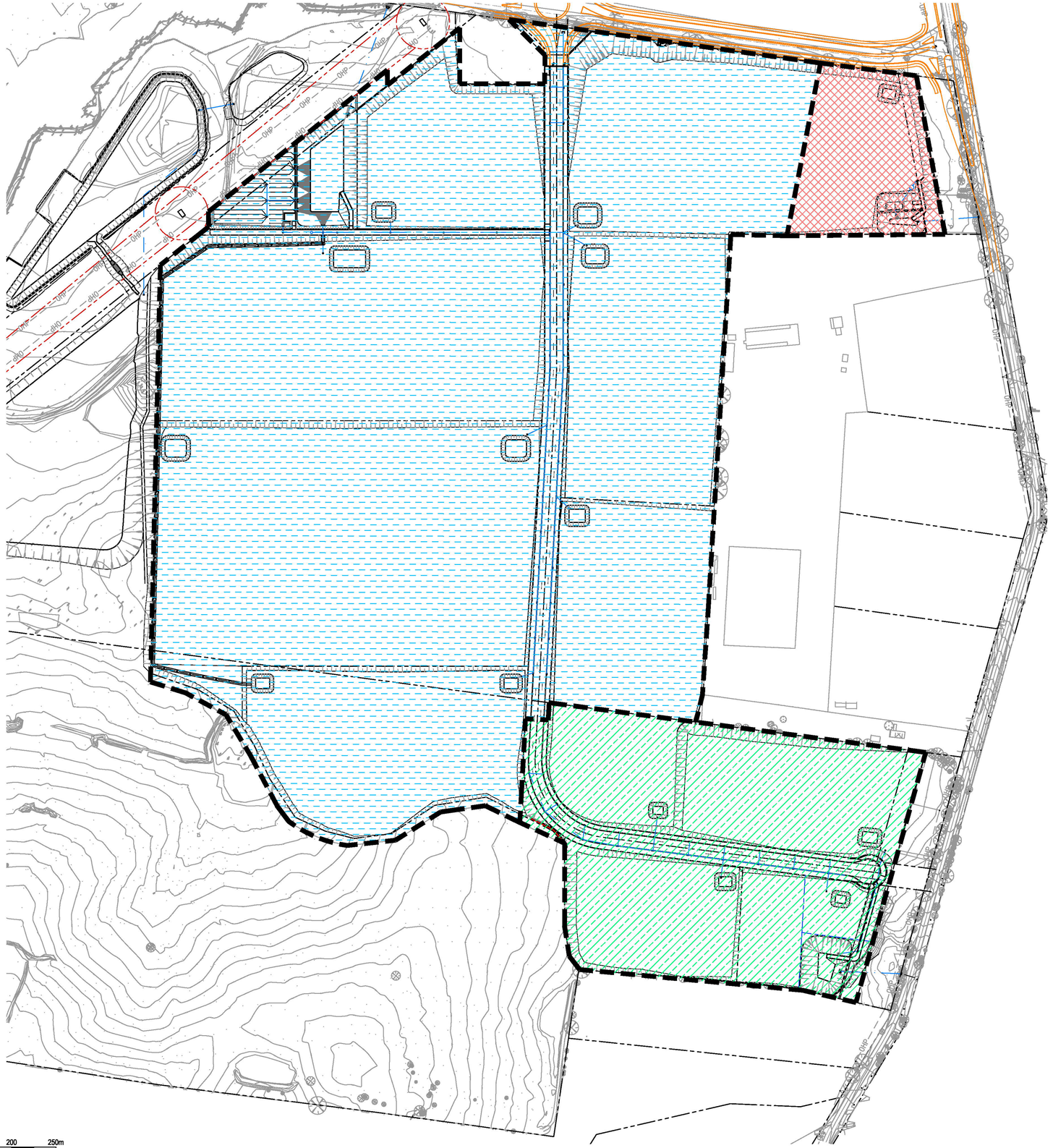
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
PRE DEVELOPMENT CATCHMENT PLAN

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:2500

Drawing number: 19221_D2_C250
Revision: 03



TOTAL AREA = 63.62 ha

NORTH-WEST CATCHMENT
AREA = 49.59 ha

NORTH-EAST CATCHMENT
AREA = 2.68 ha

SOUTH-EAST CATCHMENT
AREA = 11.35 ha

0 50 10 150 200 250m
50 30 10
SCALE 1:2500

PRE DEVELOPMENT CATCHMENT PLAN

SCALE: 1:2500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR DA ONLY	NH	NH	22.03.2024					
04	ISSUED FOR DA ONLY	AFe	NH	15.03.2024					
03	ISSUED FOR DA ONLY	AFe	NH	12.10.2023					
02	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023					
01	DRAFT	NH	NH	05.06.2023					

Client
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DRAWING TO BE PRINTED IN COLOUR

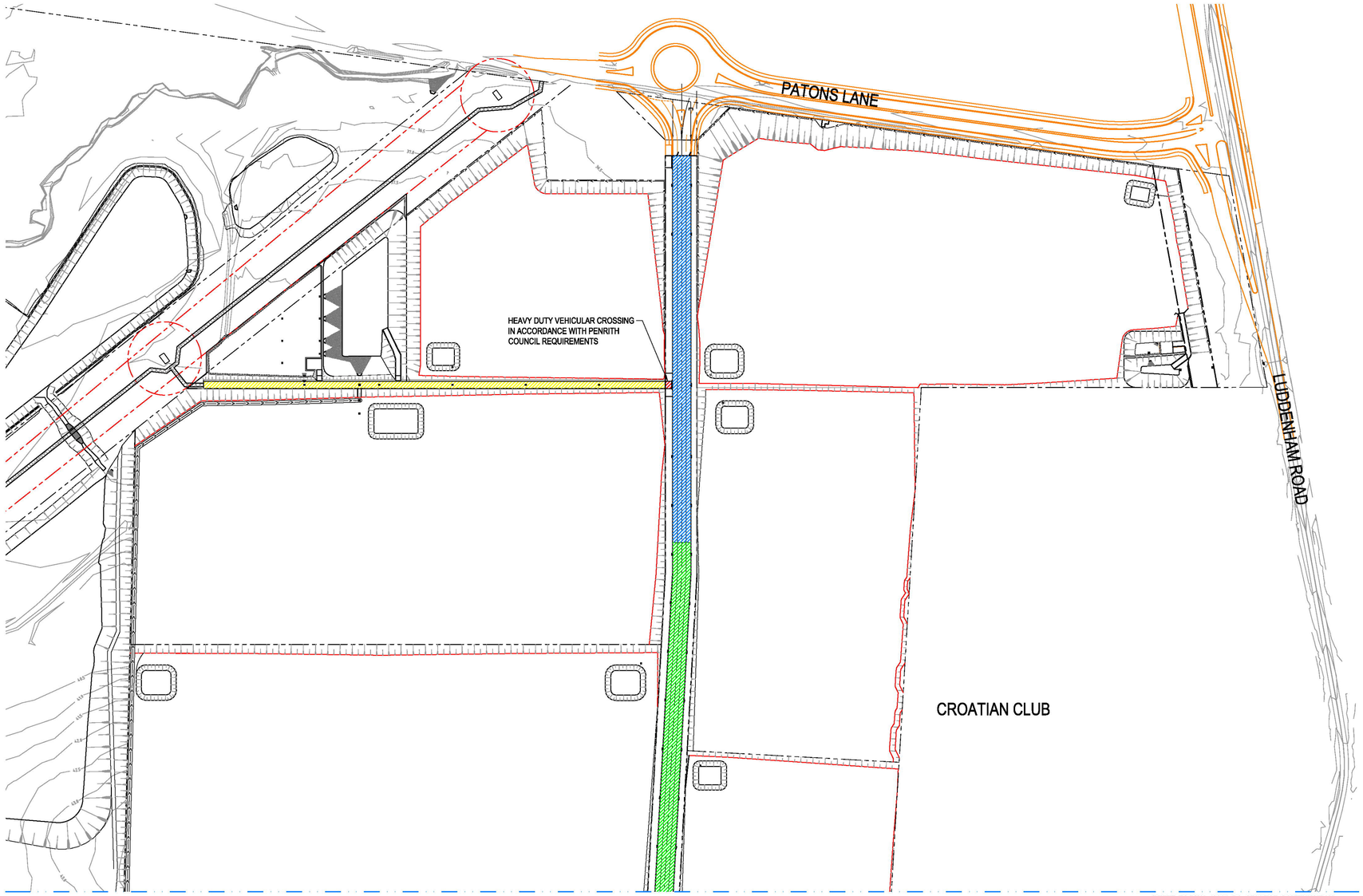
henry&hymas

Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
POST DEVELOPMENT CATCHMENT PLAN

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:2500

Drawing number: 19221_D2_C251
Revision: 05



PAVEMENT PLAN
SCALE: 1:2000

PAVEMENT LEGEND

PAVEMENT TYPE 1
COLLECTOR ROAD PAVEMENT
DESIGN ESA= $1x10^7$

- 50mm AC10
- 160mm DGB20
- 280mm DGS40
- IMPORTED FILL MATERIAL OVER EXISTING SUBGRADE. IMPORTED MATERIAL TO HAVE CBR AS PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS IN ORDER TO ACHIEVE EFFECTIVE CBR OF 5%

PAVEMENT TYPE 2
COLLECTOR ROAD PAVEMENT
DESIGN ESA= $1x10^7$

- 50mm AC10
- 160mm DGB20
- 440mm DGS40 OR SIMILAR
- EXISTING SUBGRADE TO BE LIME STABALISED TO 3% TO ACHIEVE EFFECTIVE CBR OF 3%

PAVEMENT TYPE 3
SERVICE ROAD PAVEMENT
DESIGN ESA= $2x10^5$

- 180mm 32MPa CONCRETE SLAB WITH TOP SL82 MESH (MIN 50mm COVER)
- 150mm DGB20
- COMPACTED SUBGRADE (ASSUMED CBR OF 2%)

PAVEMENT TYPE 4
HEAVY DUTY VEHICULAR CROSSING
DESIGN ESA= $2x10^5$

- 180mm 32MPa CONCRETE SLAB WITH TOP SL82 MESH (MIN 50mm COVER)
- 150mm DGB20
- COMPACTED SUBGRADE (ASSUMED CBR OF 2%)

PAVEMENT TYPE 5
FOOTPATH PAVEMENT

- 100mm 25MPa CONCRETE SLAB WITH CENTRAL SL72 MESH
- 30mm COMPACTED SAND BASE
- COMPACTED SUBGRADE (ASSUMED CBR OF 2%)

NOTE:
FINALISATION OF PAVEMENT DESIGN PENDING GEOTECH RECOMMENDATIONS AND PROPERTIES OF IMPORTED MATERIAL.

0 40 80 120 160 200m
40 30 20 10
SCALE 1:2000

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
03	ISSUED FOR DA ONLY	AFe	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.06.2023

Client
HB & B PROPERTY PTY LTD
Architect
NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

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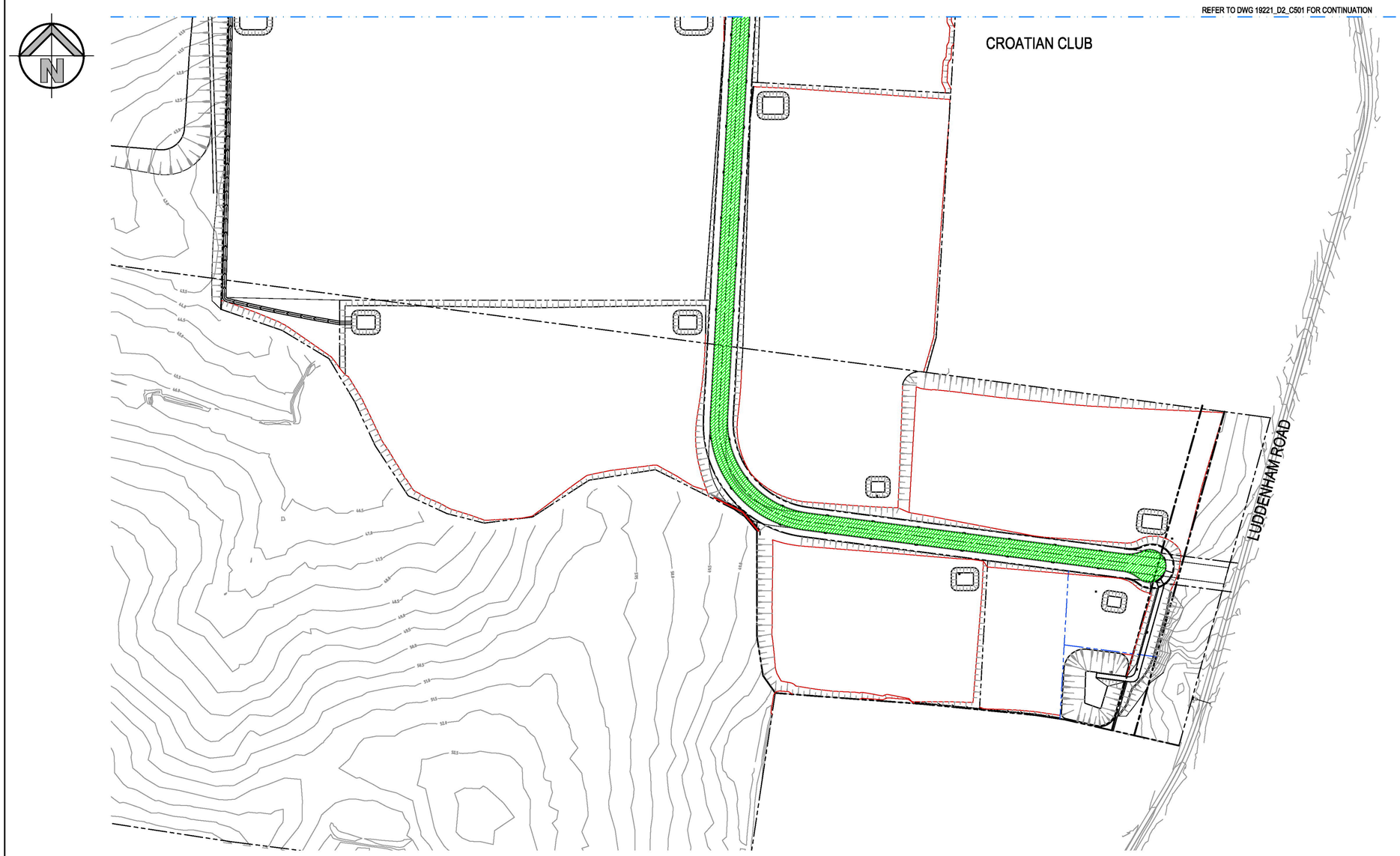
Project
PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title
PAVEMENT PLAN - SHEET 1 OF 2

Drawn	Designed	Date
M.Pereira	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:2000

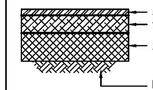
Drawing number: 19221_D2_C500
Revision: 04



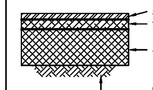
PAVEMENT PLAN
SCALE: 1:2000

PAVEMENT LEGEND

PAVEMENT TYPE 1
COLLECTOR ROAD PAVEMENT
DESIGN ESA= $1x10^7$



PAVEMENT TYPE 2
COLLECTOR ROAD PAVEMENT
DESIGN ESA= $1x10^7$

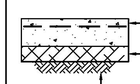


PAVEMENT TYPE 3
SERVICE ROAD PAVEMENT
DESIGN ESA= $2x10^5$

PAVEMENT TYPE 4
HEAVY DUTY VEHICULAR CROSSING
DESIGN ESA= $2x10^5$



PAVEMENT TYPE 5
FOOTPATH PAVEMENT



NOTE:
FINALISATION OF PAVEMENT DESIGN PENDING GEOTECH RECOMMENDATIONS AND PROPERTIES OF IMPORTED MATERIAL.

0 40 80 120 160 200m
40 30 20 10
SCALE 1:2000

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
03	ISSUED FOR DA ONLY	AFe	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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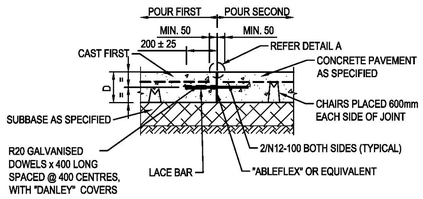
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: PAVEMENT PLAN - SHEET 2 OF 2

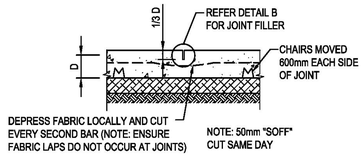
Drawn	Designed	Date
M.Pereira	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:2000

Drawing number: 19221_D2_C501
Revision: 04



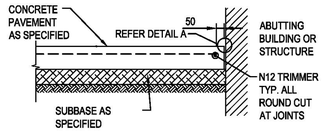
DOWELED EXPANSION JOINT (DEJ)

SCALE 1:20



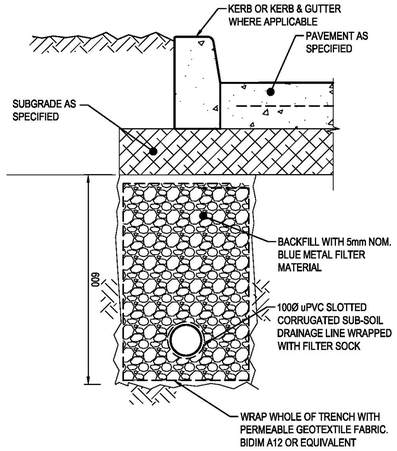
SAWN CUT JOINT (SC)

SCALE 1:20



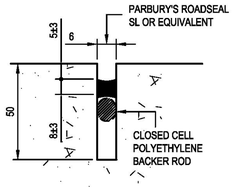
ISOLATION JOINT (IJ)

SCALE 1:20



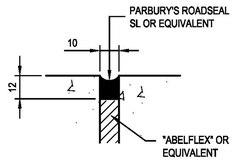
SUB-SOIL DRAIN DETAIL BELOW KERB

SCALE 1:10



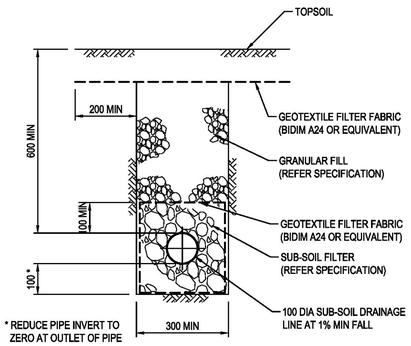
DETAIL B

N.T.S.



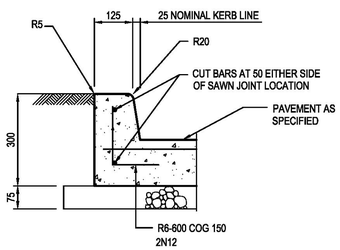
DETAIL A

N.T.S.



SUB-SOIL IN LANDSCAPED AREAS

SCALE 1:10



INTEGRAL KERB (IK)

SCALE 1:10

0 400 800 1200 1600 2000mm
400 200
SCALE 1:20

0 200 400 600 800 1000mm
200 100
SCALE 1:10

PLAN ID	MAXIMUM PIT PLAN DIMENSIONS
S	450mm x 450mm
M	600mm x 600mm
L	900mm x 900mm
XL	1200mm x 1200mm

DEPTH ID	BAG DEPTH	OVERALL DEPTH
1	170	270
2	300	450
3	600	700

		DEPTH ID		
		1	2	3
PLAN ID	S	■		
	M	■	■	
	L	■	■	■
	XL	■	■	■



GENERAL NOTES

1. THE MINIMUM CLEARANCE DEPENDS ON THE CONFIGURATION (SEE NOTE 2) AND THE LOCAL COUNCIL REQUIREMENTS.
2. CLEARANCE FOR ANY PIT WITHOUT AN INLET PIPE (ONLY USED FOR SURFACE FLOW) CAN BE AS LOW AS 50mm. FOR OTHER PITS, THE RECOMMENDED CLEARANCE SHOULD BE GREATER OR EQUAL TO THE PIPE OBVERT SO AS NOT TO INHIBIT HYDRAULIC CAPACITY.
3. OCEAN PROTECT PROVIDES TWO FILTRATION BAG TYPES:- 200 MICRON BAGS FOR HIGHER WATER QUALITY FILTERING AND A COARSE BAG FOR TARGETING GROSS POLLUTANTS.
4. DRAWINGS NOT TO SCALE.

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OCEAN PROTECT
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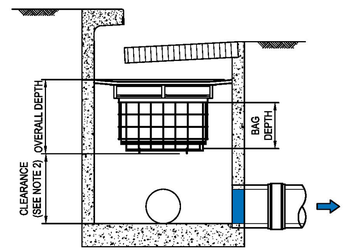
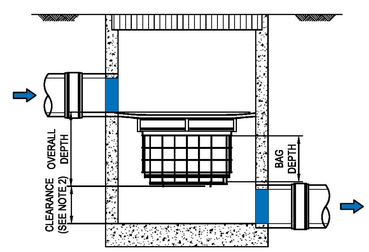
SPECIFICATION DRAWING



SURFACE FLOW CONFIGURATION

SCALE: 1:20



PIPE FLOW CONFIGURATION

SCALE: 1:20

NOTE:

TYPICAL FOR PAVEMENT DETAILS IN REGARDS TO WORKS IN THE COLLECTOR ROAD. REFER TO THE FOLLOWING STANDARD DRAWINGS IN PENRITH COUNCIL'S CIVIL WORKS ENGINEERING CONSTRUCTION SPECIFICATION:
KERB AND GUTTER - SD 1003
STANDARD FOOTPATH DETAILS - SD 1001
KERB RAMP - SD 1002
LAYBACK - SD 1003
KERB INLET PIT - SD 2001
SUBSOIL DRAIN - SD 2004

NOTE:

SUBSOIL DETAILS PIPES REQUIRED TO BE INSTALLED BEHIND ALL KERBS, OR BOTH SIDES OF THE ROAD, WITH MIN 1% FALL.

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA	MS	NH	17.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client: HB & B PROPERTY PTY LTD
Architect: NETTLETONTRIBE

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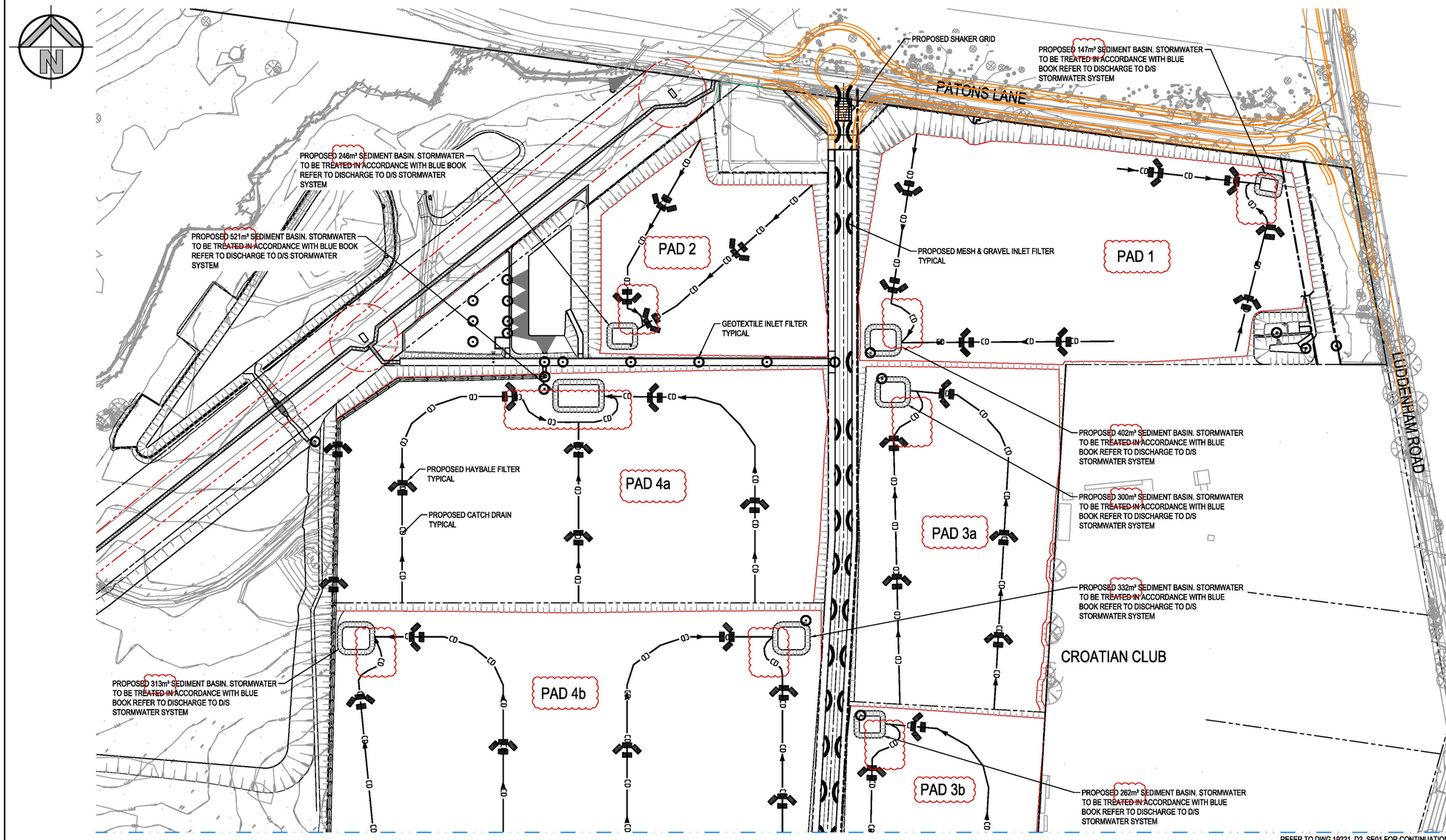
henry&hymas

Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: PAVEMENT TYPICAL DETAILS

Drawn	Designed	Date
M.Pereira	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number: 19221_D2_C502
Revision: 02



SEDIMENT AND EROSION CONTOL PLAN

SCALE: 1:2000

0 40 80 120 160 200m

40 30 20 10

SCALE 1:2000

LEGEND

- EXISTING BOUNDARY
- PROPOSED CATCH DIVERSION DRAIN
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED HAYBALE FILTER
- PROPOSED MESH & GRAVEL INLET FILTER
- GEOTEXTILE INLET FILTER
- PROPOSED SEDIMENT BASIN

SEDIMENT & EROSION CONTROL NOTES

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

SEDIMENT BASIN SIZING

PAD	AREA (ha)	SETTLING ZONE (m³)	SEDIMENT STORAGE ZONE (m³)	TOTAL SEDIMENT BASIN VOLUME (m³)
PAD 1 - EAST	2.67	117 m³	30 m³	147 m³
PAD 1 - WEST	5.689	351 m³	51 m³	402 m³
PAD 2	3.79	210 m³	36 m³	246 m³
PAD 3a	5.33	252 m³	48 m³	300 m³
PAD 3b - NORTH	4.12	216 m³	46 m³	262 m³
PAD 3b - SOUTH	2.03	138 m³	18 m³	156 m³
PAD 4a	9.04	408 m³	113 m³	521 m³
PAD 4b - WEST	6.095	255 m³	58 m³	313 m³
PAD 4c - WEST	2.84	168 m³	25 m³	193 m³
PAD 3c	3.32	174 m³	30 m³	204 m³
PAD 5a	2.65	156 m³	33 m³	189 m³
PAD 5b	1.974	135 m³	19 m³	154 m³
PAD 4b - EAST	6.13	255 m³	77 m³	332 m³
PAD 4c -EAST	2.39	141 m³	21 m³	162 m³

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR DA ONLY	MS	NH	24.09.2024
04	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
03	ISSUED FOR DA ONLY	AFe	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
01	ISSUED FOR PRELIMINARY	MP	NH	24.08.2023

Client: HB & B PROPERTY PTY LTD

Architect: NETTLETONTRIBE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

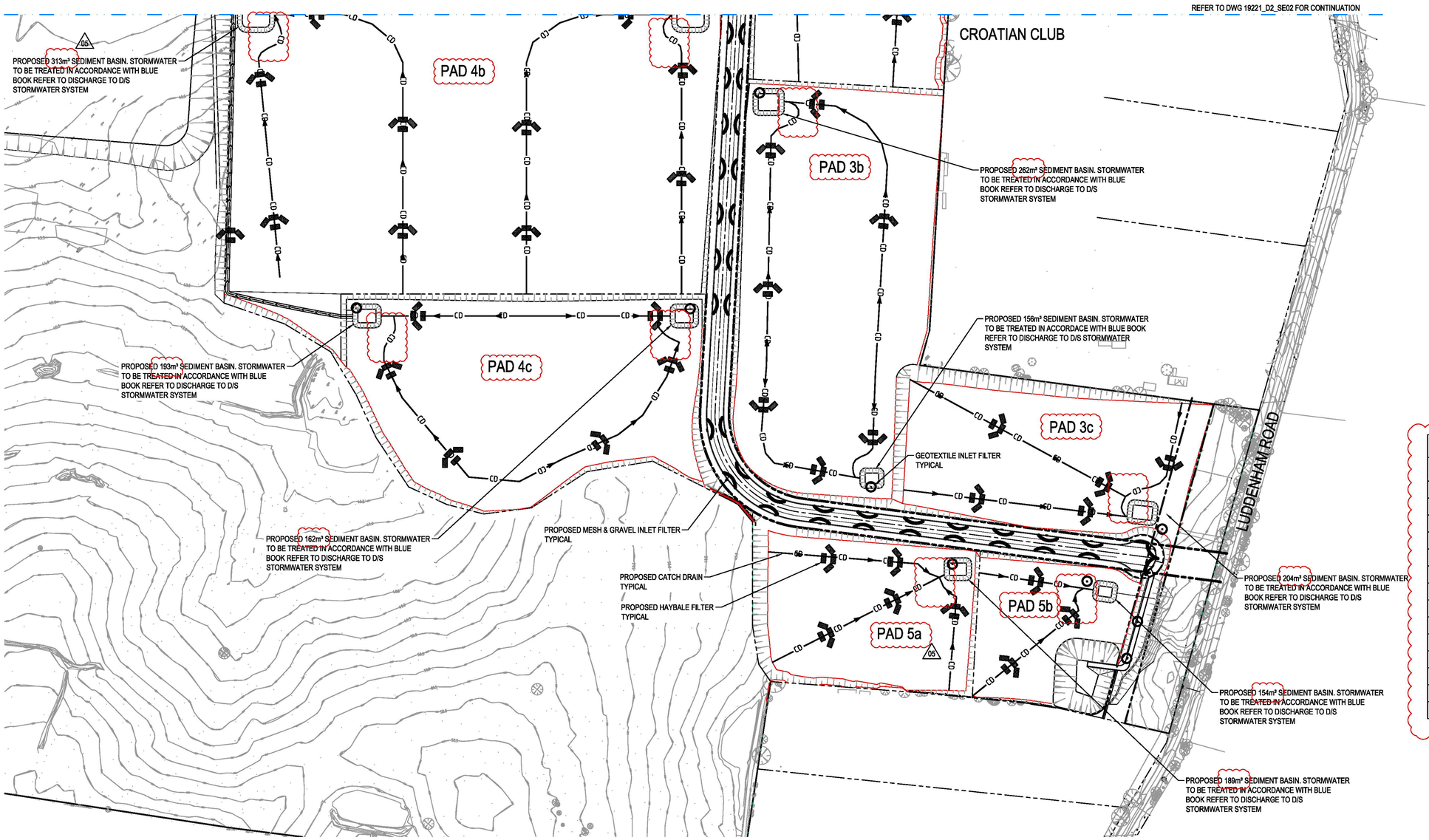
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: SEDIMENT AND EROSION CONTROL PLAN
SHEET 1 OF 2

Drawn	Designed	Date
M.Pereira	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:2000

Drawing number: 19221_D2_SE01

Revision: 05



LEGEND

- EXISTING BOUNDARY
- PROPOSED CATCH DIVERSION DRAIN
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED HAYBALE FILTER
- PROPOSED MESH & GRAVEL INLET FILTER
- GEOTEXTILE INLET FILTER
- PROPOSED SEDIMENT BASIN

SEDIMENT BASIN SIZING

PAD	AREA (ha)	SETTLING ZONE (m³)	SEDIMENT STORAGE ZONE (m³)	TOTAL SEDIMENT BASIN VOLUME (m³)
PAD 1 - EAST	2.67	117 m³	30 m³	147 m³
PAD 1 - WEST	5.689	351 m³	51 m³	402 m³
PAD 2	3.79	210 m³	36 m³	246 m³
PAD 3a	5.33	252 m³	48 m³	300 m³
PAD 3b - NORTH	4.12	216 m³	46 m³	262 m³
PAD 3b - SOUTH	2.03	138 m³	18 m³	156 m³
PAD 4a	9.04	408 m³	113 m³	521 m³
PAD 4b - WEST	6.095	255 m³	58 m³	313 m³
PAD 4c - WEST	2.84	168 m³	25 m³	193 m³
PAD 3c	3.32	174 m³	30 m³	204 m³
PAD 5a	2.65	156 m³	33 m³	189 m³
PAD 5b	1.974	135 m³	19 m³	154 m³
PAD 4b - EAST	6.13	255 m³	77 m³	332 m³
PAD 4c -EAST	2.39	141 m³	21 m³	162 m³

SEDIMENT AND EROSION CONTOL PLAN

SCALE: 1:2000

0 40 80 120 160 200m
40 30 20 10
SCALE 1:2000

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR DA ONLY	MS	NH	24.09.2024
04	ISSUED FOR DA ONLY	AFe	NH	30.08.2024
03	ISSUED FOR DA ONLY	AFe	NH	01.03.2024
02	ISSUED FOR DA ONLY	AFe	NH	12.10.2023
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DRAWING TO BE PRINTED IN COLOUR

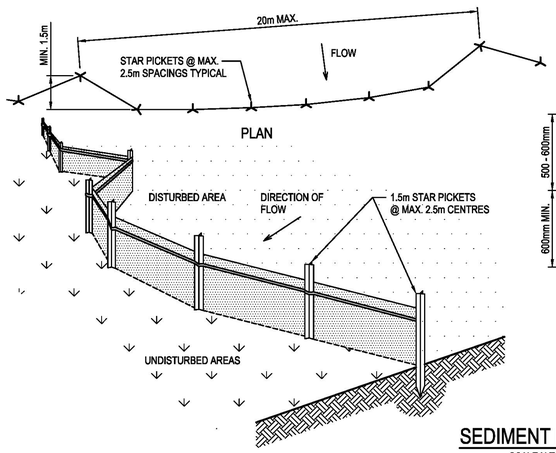
henry&hymas

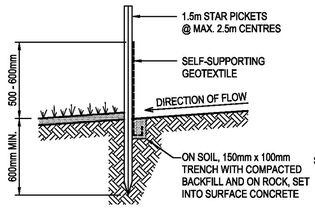
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: SEDIMENT AND EROSION CONTROL PLAN SHEET 2 OF 2

Drawn	Designed	Date
M.Pereira	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:2000

Drawing number: 19221_D2_SE02
Revision: 05





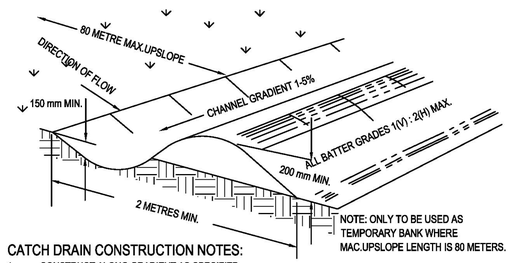
SECTION DETAIL

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. 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. 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. 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.

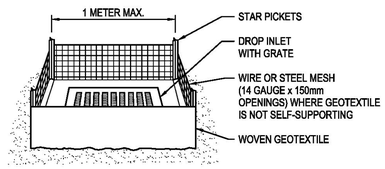


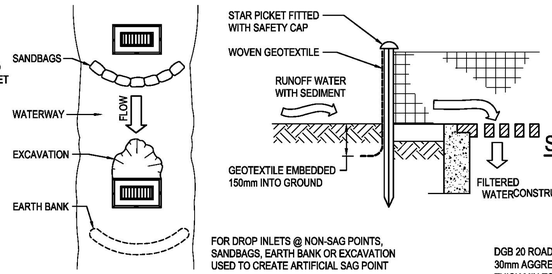
CATCH DRAIN CONSTRUCTION NOTES:

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 TEMPRORARY 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.



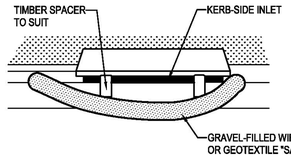


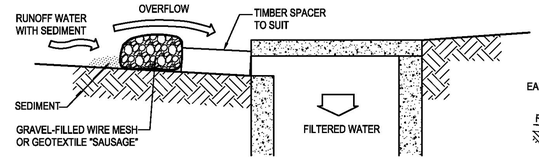
GEOTEXTILE INLET FILTER CONSTRUCTION NOTES:

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE.
2. PICKET SPACING TO BE MAXIMUM 1.0m.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILES UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER

SCALE N.T.S.



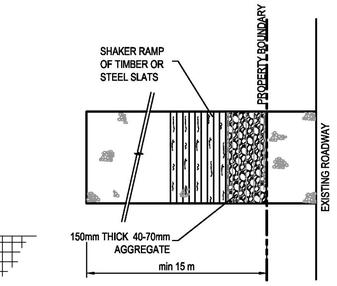


MESH & GRAVEL INLET FILTER CONSTRUCTION NOTES:

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

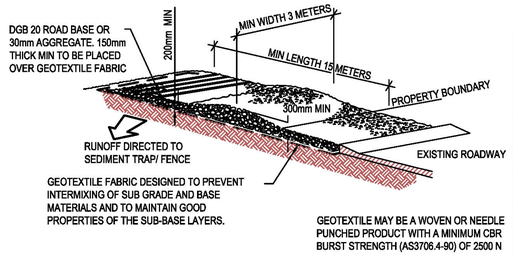
SCALE N.T.S.



PLAN

STABILISED SITE ACCESS WITH SHAKER RAMP

N.T.S.

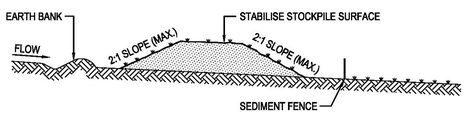


STABILISED SITE ACCESS WITH SHAKER RAMP

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.

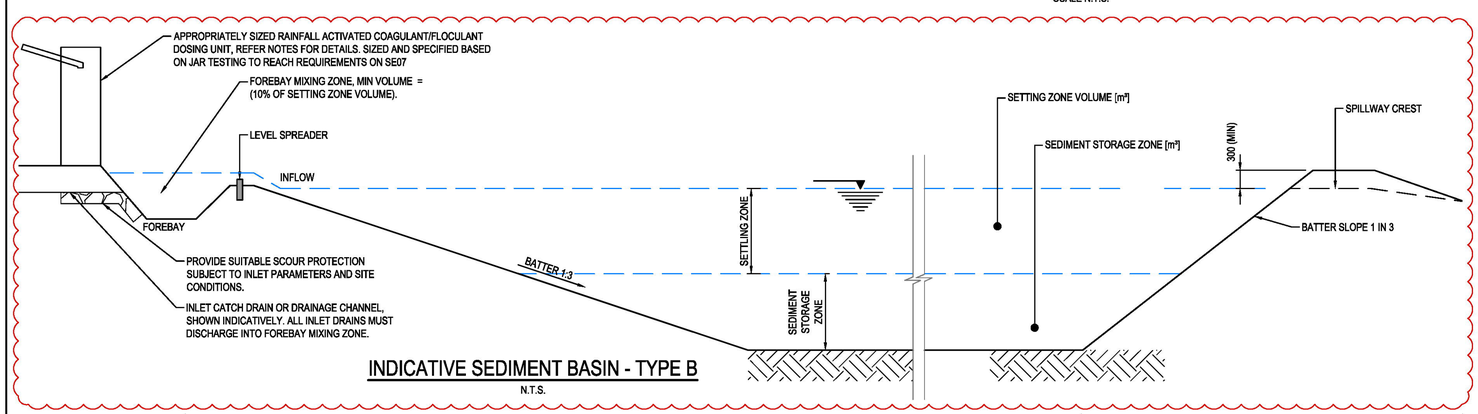


STOCKPILE CONSTRUCTION NOTES:

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.



INDICATIVE SEDIMENT BASIN - TYPE B

N.T.S.

SEDIMENT BASIN SIZING

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

SEDIMENT BASIN SIZING TYPE D SOILS	
VOLUMETRIC RUNOFF COEFFICIENT, CV	0.56
80TH PERCENTILE 5 DAY TOTAL RAINFALL DEPTH, R	27.4mm
CATCHMENT AREA, A	VARIES
SETTLING ZONE VOLUME (PER HECTARE) 10 CV A R	153.4 x A
DISTURBED CATCHMENT AREA	VARIES
R K LS P C	1.35 x Ls
SEDIMENT ZONE VOLUME (0.17 A (R K LS P C))/1.3	VARIES
TOTAL SEDIMENT BASIN VOLUME REQUIRED :	REFER TO SED01 AND SED 02

* (LANDCOM MANAGING URBAN STORMWATER MANUAL REFERENCE)

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

CONSTRAINT	VALUE	(SOURCE)*
RAINFALL EROSIVITY (R-FACTOR)	2000	APPENDIX B - MAP 10
LENGTH/SLOPE GRADIENT FACTOR, LS	VARIES	APPENDIX A - TABLE A1
SOIL ERODIBILITY (K-FACTOR)	0.038	(TABLE C19)
EROSION CONTROL PRACTICE FACTOR (P-FACTOR)	1.3	APPENDIX A - TABLE A2
COVER FACTOR (C-FACTOR)	1.0 (DURING EARTHWORKS)	APPENDIX A - FIGURE A5
CALCULATED SOIL LOSS, A (RUSLE EQUATION)	VARIES	A = R K LS P C
SOIL HYDROLOGIC GROUP	GROUP D	APPENDIX C TABLE 19
75th PERCENTILE 5-DAY RAINFALL EVENT	21.8mm	TABLE 6.3A

* (LANDCOM MANAGING URBAN STORMWATER MANUAL REFERENCE)

BASIN MANAGEMENT

1. THE CAPTURED STORMWATER IN THE SETTLING ZONE SHOULD BE DRAINED TO MEET THE MINIMUM STORAGE CAPACITY REQUIRED WITHIN A FIVE (5) DAY PERIOD FOLLOWING RAINFALL, PROVIDED THE ACCEPTABLE WATER QUALITY (NFR) AND TURBIDITY HAVE BEEN ACHIEVED.
2. CHEMICAL FLOCCULENT SUCH AS GYPSUM MAY BE DOSED TO AID SETTLING WITHIN 24 HOURS OF CONCLUSION OF EACH STORM. THE APPLIED DOSING RATES SHOULD ACHIEVE THE TARGET QUALITY WITHIN 36 TO 72 HOURS OF THE STORM EVENT.
3. INSPECT THE SEDIMENT BASINS AFTER EACH RAINFALL EVENT AND/OR WEEKLY. ENSURE THAT ALL SEDIMENT IS REMOVED ONCE THE SEDIMENT STORAGE ZONE IS FULL (REFER TO PEGS INSTALLED IN BASINS IN ACCORDANCE WITH THE SWMP). ENSURE THAT OUTLET AND EMERGENCY SPILLWAY WORKS ARE MAINTAINED IN A FULLY OPERATIONAL CONDITION AT ALL TIMES.

SOWING SEASON	SEED MIX
AUTUMN/WINTER	OATS@40KG/Ha + JAPANESE MILLET@10kg/Ha
SPRING/SUMMER	OATS@20kg/Ha + JAPANESE MILLET@20kg/Ha

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

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

NOTE:
1. SEDIMENT BASINS HAVE BEEN DESIGNED TO TREAT 80% OF AVERAGE RUNOFF VOLUME TO 50mg/L TSS OR LESS AND PH LEVELS IN THE RANGE OF 6.5-8.5. BASIN MANAGEMENT TO ENSURE THESE PARAMETERS ARE ACHIEVED FOR ALL STORMWATER DISCHARGING FROM THE SEDIMENT BASINS ON SITE.

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	MS	NH	24.09.2024
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Client: HB & B PROPERTY PTY LTD
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DRAWING TO BE PRINTED IN COLOUR

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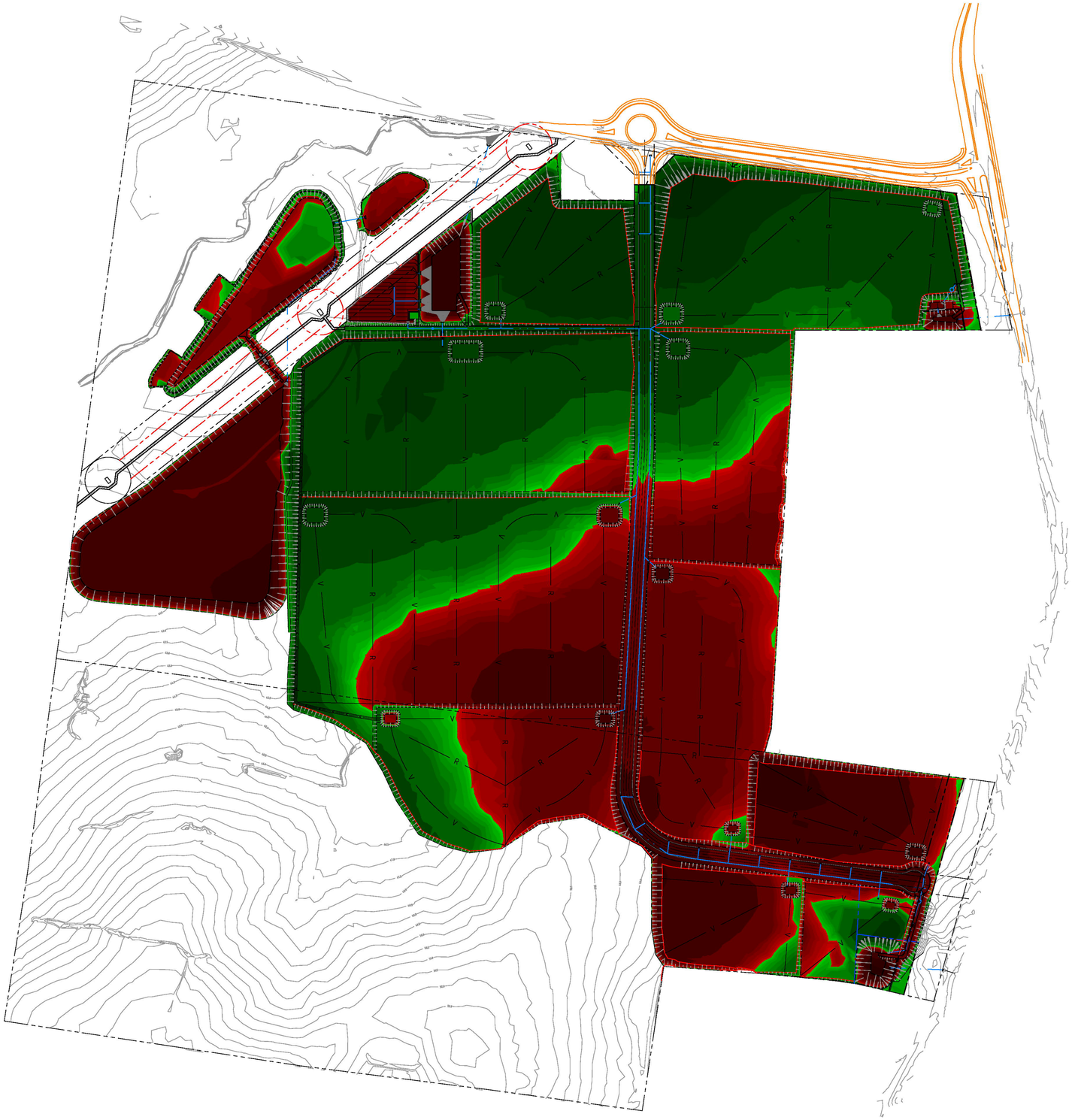
Project: PROPOSED INDUSTRIAL BUSINESS PARK
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS

Title: SEDIMENT AND EROSION CONTROL DETAILS

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	AS NOTED

Drawing number: 19221_D2_SE03
Revision: 04



EARTHWORKS QUANTITIES

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

- EARTHWORKS QUANTITIES -	
TOTAL AREA (72.12 ha)	
CUT	568015m³
FILL	913700m³
EXCESS OF FILL	345685m³
TOPSOIL STRIPPING *250mm* OF 180300m³ NOT INCLUDED IN CALCULATION	
EXCAVATION FOR SERVICE TRENCHES NOT INCLUDED IN CALCULATION	
EXCAVATION FOR RETAINING WALLS NOT INCLUDED IN CALCULATION	

THICKNESS SET DOWNS USED FOR CALCULATIONS

ROAD PAVEMENT -500mm
BIO-BASIN - NORTH WEST -1000mm
BIO-BASIN - NORTH EAST -800mm

DEPTH RANGE Lower_value		Upper_value	Colour
-6	to	-4	Meters
-4	to	-2	Meters
-2	to	-1	Meters
-1	to	-.8	Meters
-.8	to	-.6	Meters
-.6	to	-.4	Meters
-.4	to	-.2	Meters
-.2	to	-.1	Meters
-.1	to	-.05	Meters
-.05	to	.0	Meters
.0	to	.05	Meters
.05	to	.1	Meters
.1	to	.2	Meters
.2	to	.4	Meters
.4	to	.6	Meters
.6	to	.8	Meters
.8	to	1	Meters
1	to	2	Meters
2	to	4	Meters
4	to	6	Meters

BULK EARHTWORKS CUT AND FILL PLAN

SCALE: 1:3000

0 50 100 150 200 250 300m
60 40 20
SCALE 1:3000

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
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Project
PROPOSED INDUSTRIAL SUBDIVISSION
221-227 & 289-317 LUDDENHAM ROAD ORCHARD HIILS
Title
BULK EARHTWORKS
CUT AND FILL PLAN

Drawn	Designed	Date
I.Khachab	N.Heazlewod	MARCH 2019
Checked	Approved	Scale @A1
N.Heazlewod	A.Francis	1:3000

Drawing number
19221_D2_BE01
Revision
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