Civil

TTW

TaylorThomsonWhitting

128 Herring Road Residential Precinct Development - Road Works and Stormwater.

for Lipman Properties Pty Ltd

15th September 2010

TTW Job No: 091679

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1. INTRODUCTION

This report is submitted by Engineering Consultancy firm Taylor Thomson Whitting (TTW) who have been engaged by Lipman Properties Pty Ltd.

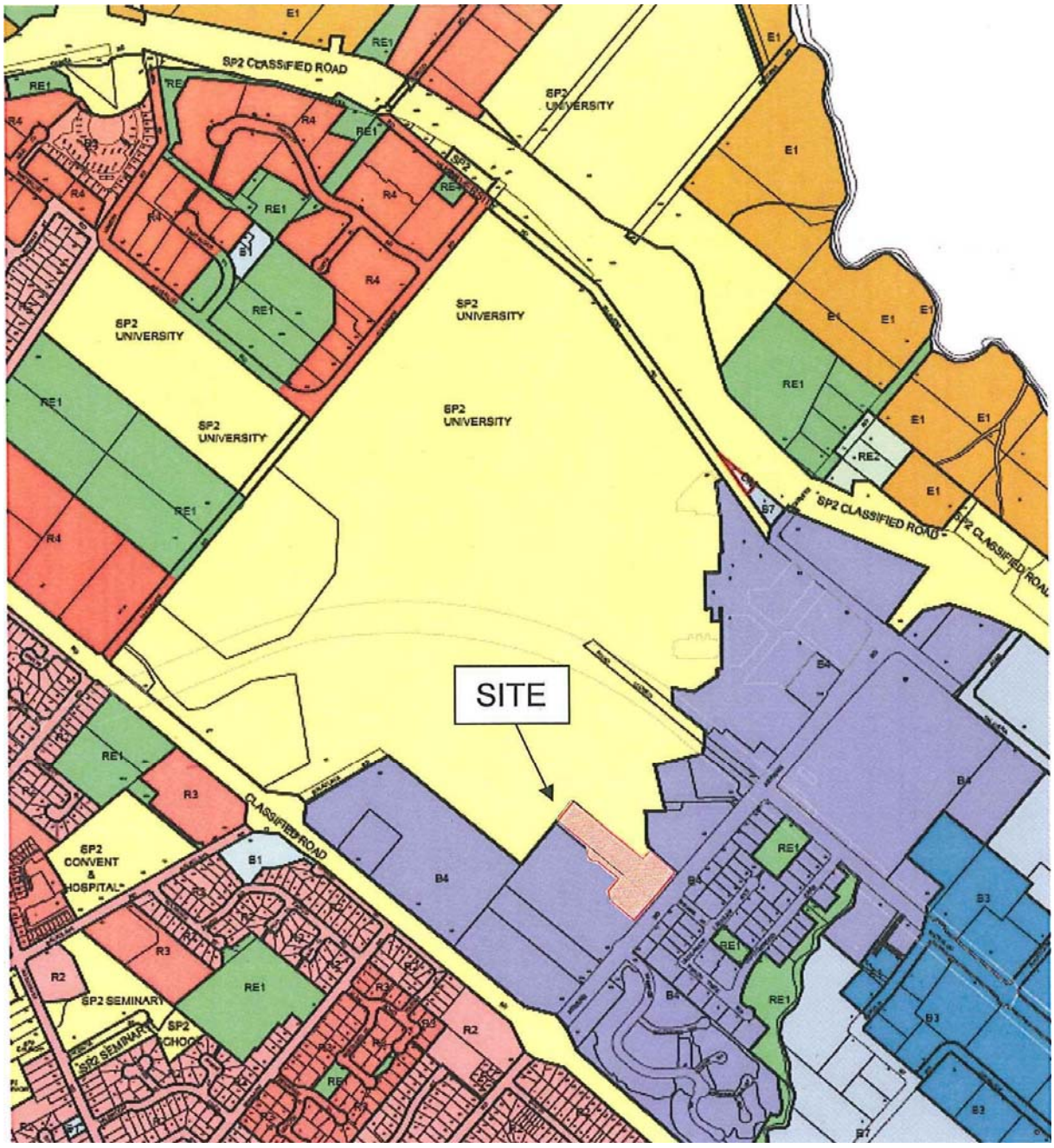
The objective of this report is to provide a stormwater and road infrastructure plan which defines the civil engineering requirements of the proposed development site with respect to road access, stormwater drainage, detention and stormwater reuse provision, water quality treatment measures and erosion and sediment control requirements.

Existing Site

This report is intended to identify civil engineering issues for the 17,173 square metre development site.

The staged subdivision and staged development construction proposed will require detailed approval for each stage to ensure the development is compliant with the development consent requirements.

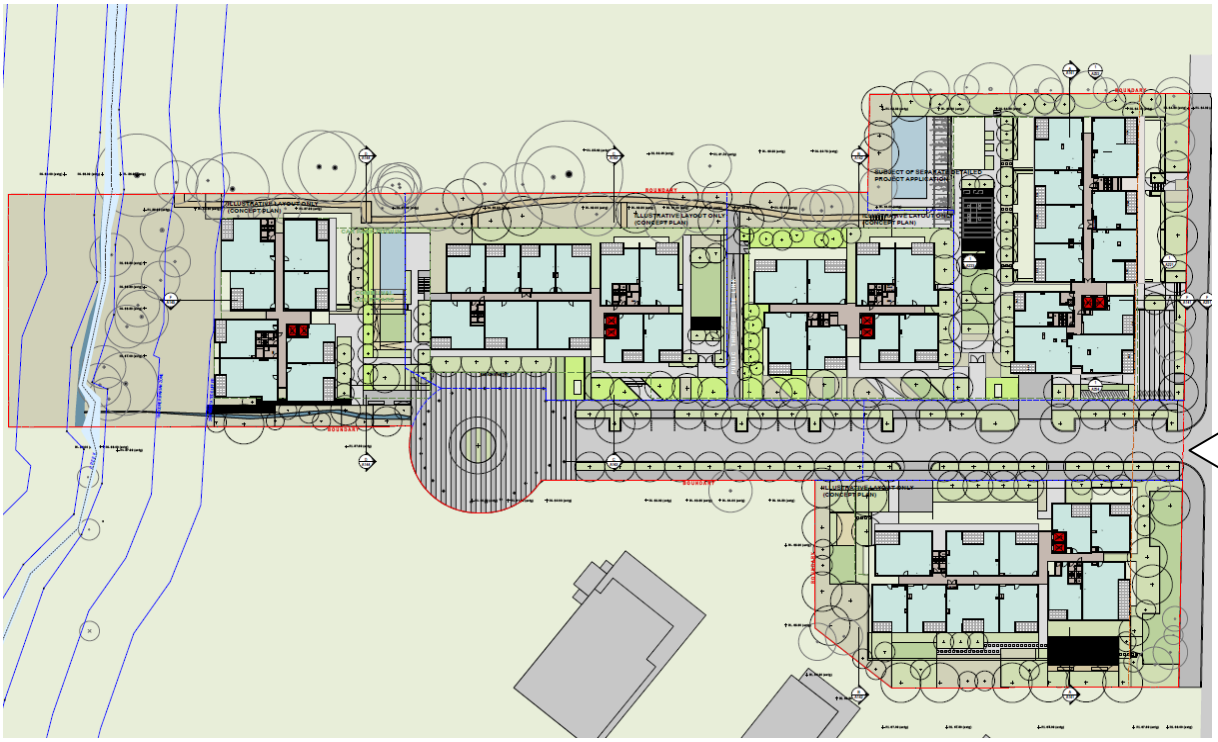
Each development stage will be designed to comply with the development consent requirements.



Local Environment Plan for the local area

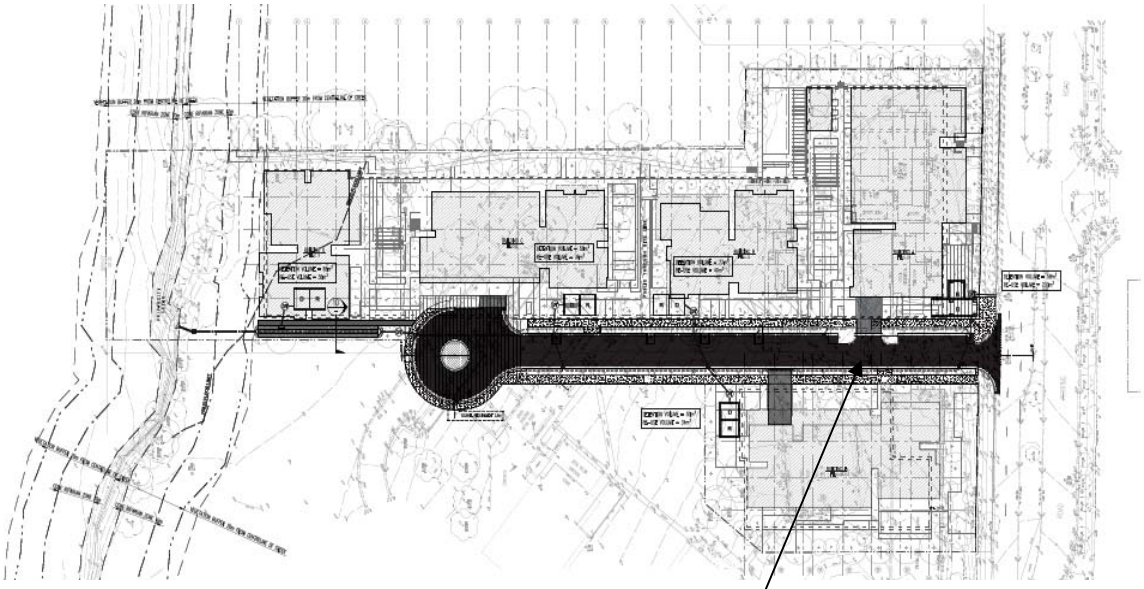
The site is currently zoned B4 mixed use based on the Ryde Council LEP 2008. The site is currently part of the Morling College campus. The Morling College site will be subdivided to accommodate the proposed development in three stages to form 7 Lots. The site is next to Macquarie University.

2. PROPOSED DEVELOPMENT



The proposed development consists of five residential buildings with road access from Herring Road.

The proposed road is approximately 160m long. The proposed road is generally in accordance with Ryde Council's DCP 2006 Macquarie Park Corridor Plan, type 3 road from chapter 5.0 of the Public Domain requirement.



130m of the road and four of the residential building development sites (Buildings B, C, D and E) drain to University Creek.

One of the five residential building sites (Building A – Lot 10) and 30m of the road will drain east toward Herring Road and connect into the Herring Road street drainage as per the fall of the proposed road connection.

2. ROADWORKS

The road works will be required to ensure adequate allowance is made for the residential traffic, garbage trucks and general traffic in accordance with AS2890.

Road levels are intended to match the existing road and ground levels to minimise the extent of retaining works and filling required.

Stormwater drainage for both construction stages of the roadworks of the development will be provided.

3. STORMWATER WORKS

The majority of the 128 Herring Road development falls to the west toward University Creek which is within the site boundary. The first stage development building (Building A) is intended to drain to Herring Road through a detention and retention system.

The flood impact of the University Creek watercourse requires that development is to be above the 100 year flood zone with suitable freeboard, and outside the riparian zone.

TTW recommend stormwater detention and reuse storage be provided for the development to ensure there is no increase of stormwater peak flow downstream due to the proposed development.

Roof water for each development stage is drained to a reuse tank to store rainwater for irrigation to landscape areas.

The overflow from the reuse tank, surface runoff for the podium of each stage and air conditioner condensate drains to a stormwater detention tank for each stage sized in accordance with Council's Stormwater Management Development Control Plan.

An oil and silt arrestor and gross pollutant trap has been provided for each development stage prior to discharge to the street drainage system.

A first flush bio-swale treatment has been proposed prior to the discharge to University Creek on the western side of the site.

Water quality modelling has been undertaken using Music to confirm the pollution reduction rates achieved by the development to limit the impact of the proposed development on downstream water quality.

TTW recommend the core riparian zone setback (CRZ) requirements be 10m from the top of bank as per the requirement for a first order water course with intermittent flow characteristics. The vegetation buffer has been nominated as 20m from the top of bank for both the east and west sides of the creek (including the CRZ).

By:

TAYLOR THOMSON WHITTING (NSW) PTY LTD

STEPHEN BRAIN
Technical Director - Civil

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APPENDIX A

ROAD & STORMWATER CIVIL PLANS

RESIDENTIAL DEVELOPMENT 128 HERRING ROAD
MACQUARIE PARK

GENERAL NOTES

1. Contractor must verify all dimensions and existing levels on site prior to commencement of works. Any discrepancies to be reported to the Engineer .
2. Strip all topsoil from the construction area. All stripped topsoil shall be disposed of off-site unless directed otherwise.
3. Make smooth connection with all existing works.
4. Compact subgrade under buildings and pavements to minimum 98% standard maximum dry density in accordance with AS 1289 5.1.1. Compaction under buildings to extend 2m minimum beyond building footprint.
5. All work on public property, property which is to become public property, or any work which is to come under the control of the Statutory Authority is to be carried out in accordance with the requirements of the relevant Authority. The Contractor shall obtain these requirements from the Authority. Where the requirements of the Authority are different to the drawings and specifications, the requirements of the Authority shall be applicable.
6. For all temporary batters refer to geotechnical recommendations.

REFERENCE DRAWINGS

1. These drawings have been based from, and to be read in conjunction with the following Consultants drawings. Any conflict to the drawings must be notified immediately to the Engineer.

Consultant	Dwg Title	Dwg No	Rev	Date
Barrie Green	Survey Plans	6041	D	24.08.09
Turner & Associates	Architect Plans	09047–A126	O	27.09.10
Turner & Associates		09047–A127	P	27.09.10
Turner & Associates		A171–A176	F	02.09.10
Turner & Associates		A177	C	02.09.10

PIT SCHEDULE

Note: Grate size does not necessarily reflect pit size, refer pit type details, shown on detail sheets – C209

Type	Description	Cover (Clear Opening)	Number
A	Kerb inlet pit 900 lintel	450 x 900 Class D galvanised mild steel grate hinged to frame	2,3,8,9,10 13,14,17, 23,24
B	Surface inlet pit	900 x 900 Class D galvanised mild steel grate hinged to frame	19
	Junction pit	600 x 900 Class D cast iron cover with concrete infill	1
		900 x 900 Class D cast iron cover with concrete infill	20
C	GPT	Rocla CDS unit 0708 Class C access cover	6,11,15,16 18,21
D	Headwall	Concrete Headwall – size to suit outlet pipe	4,5,25,26

STORMWATER DRAINAGE NOTES

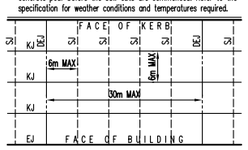
1 Stormwater Design Criteria :
- (A) Average recurrence interval –
  1:100 years for roof drainage to first external pit
  1:20 years for paved and landscaped areas
- (B) Rainfall intensities –
  Time of concentration: 6 minutes
  1:100 years = 245.47 mm/hr
  1:20 years = 194.90 mm/hr
- (C) Runoff coefficients –
  Roof areas: Cxa = 1.0
  Roads and paved areas: Cxa = 0.95
  Landscaped areas: Cxa = 0.56

2. Pipes 300 dia and larger to be reinforced concrete Class "2" approved spigot and socket with rubber ring joints U.N.O.
3. Pipes up to 300 dia shall be sewer grade uPVC with solvent welded joints.
4. Equivalent strength VCP or FCP pipes may be used subject to approval.
5. Precast pits may be used external to the building subject to approval by Superintendent
6. Enlargers, connections and junctions to be manufactured fittings where pipes are less than 300 dia.
7. Where subsoil drains pass under floor slabs and vehicular pavements, unslotted uPVC sewer grade pipe is to be used.
8. Grates and covers shall conform with AS 3996–2006, and AS 1428.1 for access requirements.
9. Pipes are to be installed in accordance with AS 3725. All bedding to be type H2 U.N.O.
10. Care is to be taken with levels of stormwater lines. Grades shown are not to be reduced without approval.
11. All stormwater pipes to be 150 dia at 1.0% min fall U.N.O.
12. Subsoil drains to be slotted flexible uPVC U.N.O.
13. Adopt invert levels for pipe installation (grades shown are only nominal).

JOINTING NOTES

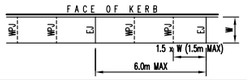
Vehicular Pavement Jointing

1. All vehicular pavements to be jointed as shown on drawings.
2. Keyed construction joints should generally be located at a maximum of 6m centres.
3. Sawn joints should generally be located at a maximum of 6m centres or 1.5 x the spacing of keyed joints, where key joint spacing is less than 4m, with dowelled expansion joints at maximum of 30m centres.
4. Provide 10mm wide full depth expansion joints between buildings and all concrete or unit pavers.
5. Vehicular pavement jointing as follows.
6. The timing of the saw cut is to be confirmed by the contractor on site. Site conditions will determine how many hours after the concrete pour before the saw cuts are commenced. Refer to the specification for weather conditions and temperatures required.



Pedestrian Footpath Jointing

1. Expansion joints are to be located where possible at tangent points of curves and elsewhere at max 6.0m centres.
2. Weakened plane joints are to be located at a max 1.5 x width of the pavement.
3. Where possible joints should be located to match kerbing and / or adjacent pavement joints.
4. All pedestrian footpath jointings as follows (uno).



CONCRETE NOTES

EXPOSURE CLASSIFICATION

CONCRETE

1. Place concrete of the following characteristic compressive strength f'c as defined in AS 1379.

Location	AS 1379 f'c MPa at 28 days	Specified Slump	Nominal Agg. Size
Pits, kerbs, footpaths	S(25)	80	20
Footings	S(32)	80	20
Vehicular pavements	SF(32) at 90 days	80	20

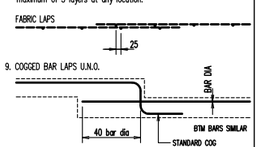
2. Use Type 'GP' cement, unless otherwise specified.
3. All concrete shall be subject to project assessment and testing to AS 1379.
4. Consolidate by mechanical vibration. Cure all concrete surfaces as directed in the Specification.
5. For all falls in slab, drip grooves, reglets, chamfers etc. refer to Architects drawings and specifications.
6. Unless shown on the drawings, the location of all construction joints shall be submitted to Engineer for review.
7. No holes or chases shall be made in the slab without the approval of the Engineer.
8. Conduits and pipes are to be fixed to the underside of the top reinforcement layer.
9. Slurry used to lubricate concrete pump lines is not to be used in any structural members.

REINFORCEMENT NOTES

1. Fix reinforcement as shown on drawings. The type and grade is indicated by a symbol as shown below. On the drawings this is followed by a numeral which indicates the size in millimetres of the reinforcement.

N. Hot rolled ribbed bar grade D500N
R. Plain round bar grade R250N
SL Square mesh grade 500L
RL Rectangular mesh grade 500L

2. Provide bar supports or spacers to give the following concrete cover to all reinforcement unless otherwise noted on drawings.
   Footings – bottom, top, sides.
   Slabs – top, bottom, when exposed to weather.
   Beams – bottom, sides, top to ties.
   Columns – to ties and spirals.
   – when exposed to weather or ground.
   Walls – generally.
   – when cast in forms but later exposed to weather or ground.
   – when cast directly in contact with ground.
3. Cover to reinforcement ends to be 45 mm u.n.o.
4. Provide N12–450 support bars to top reinforcement as required , Lap 450, U.N.O.
5. Maintain cover to all pipes,conduits,reglets,drip grooves etc
6. Laps in reinforcement shall be made only where shown on the drawings unless otherwise approved. Lap lengths shall be 40 bar dia, unless noted otherwise.
7. All cogs to be standard cogs unless noted otherwise.
8. Fabric end and side laps are to be placed strictly in accordance with the manufacturers requirements to achieve a full tensile lap. Fabric shall be laid so that there is a maximum of 3 layers at any location.



FORMWORK

1. The design, certification, construction and performance of the formwork, falsework and backpropping shall be the responsibility of the contractor. Proposed method of installation and removal of formwork is to be submitted to the superintendent for comment prior to work being carried out.

CONCRETE FINISHING NOTES

1. All exposed concrete pavements are to be broomed finished.
2. All edges of the concrete pavement including keyed and dowelled joints are to be finished with an edging tool.
3. Concrete pavements with grades greater than 10 % shall be heavily broomed finished.
4. Carborundum to be added to all stair treads and ramped crossings U.N.O.

KERBING NOTES

Includes all kerbs, gutters, dish drains, crossings and edges.

1. All kerbs, gutters, dish drains and crossings to be constructed on minimum 75mm granular basecourse 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 filler 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 locations in slabs.
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. Broomed 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 basecourse and surface is to be laid 900mm wide to match existing materials and thicknesses.
   Existing allotment drainage pipes are to be built into the new kerb with a 100mm dia hole.
   Existing kerbs are to be completely removed where new kerbs are shown.

BULK EARTHWORKS NOTES

1. All bulk earthworks setout from grid lines U.N.O.
2. All batters at a slope of 2 (H) : 1 (V) U.N.O.
3. Excavated material may be used as structural fill provided,
   (i) it complies with the specification requirements for fill material,
   (ii) the placement moisture content complies with the Geotechnical Consultants requirements, and allows filling to be placed and proofrolled in accordance with the specification. Where necessary the Contractor must moisture condition the excavated material to meet these requirements.
4. Compact fill areas and subgrade to not less than:

Location	Standard dry density (AS 1289 5.1.1.)	Moisture (OMC)
Under building slabs on ground:	98%	±2%
Under roads and carparks:	98%	±2%
Landscaped areas:	95%	±2%

5. Before placing fill, proof roll exposed subgrade with a 10 tonne minimum roller to test subgrade and then remove soft spots (areas with more than 3mm movement under roller). Soft spots to be replaced with **select** fill U.N.O.
6. Contractor shall place safety barriers around excavations in accordance with relevant safety regulations.
7. For interpretation of bulk earthworks foot print line shown on the bulk earthworks drawings refer to the bulk earthworks construction legend.
8. Bulk earthwork drawings are not to be used for detailed excavation.
9. Refer to Geotechnical Report

SIGNS AND LINE MARKING NOTES

1. Pavement marking and sign posting on public roads shall be in accordance with the requirements of the relevant Road Authority. The contractor shall obtain these requirements from the Road Authority.
1. Pavement marking and sign posting to be in accordance with R.T.A. 'Interim Guide to Signs and Markings'.
2. Contractor is to provide guide posts, spaced in accordance with AS1742.2. They are to be located near all head walls and pipe outlets.
3. Raised pavement markers to be in accordance with AS1742.2
4. Where existing pavement marking conflicts with proposed, it is to be removed.
5. Lane widths do not include width of gutter.
6. Line marking plan does not define boundaries.
7. Erect temporary sign 'changed traffic conditions ahead' 120m ahead of new work in both directions.
8. Establish the location of existing utility services and locate new signs clear of these installations.
9. The sloped face of the SF median kerbs which adjoin through lanes, are to be painted white in lieu of an E3 edge line. The reflective pavement markers normally associated with an E3 edge line are to be located on the pavement adjacent to the SF kerb.
10. Bicycle pavement markings and sign posting to be in accordance with Austroads Standards.
11. The design of major directional sign posting to be prepared and assessed by the R.T.A.

SURVEY AND SERVICES INFORMATION

SURVEY

Origin of levels :
Datum of levels : A.H.D. AUSTRALIAN HEIGHT DATUM
Coordinate system : ISG OR MGA OR LOCAL
Survey prepared by :
Setout Points : CONTACT THE SURVEYOR
CONTACT THE SURVEYOR

Taylor Thomson Whitting does not guarantee that the survey information shown on these drawings is accurate and will accept no liability for any inaccuracies in the survey information provided to us from any cause whatsoever.

UNDERGROUND SERVICES – WARNING

The locations of underground services shown on Taylor Thomson Whittings drawings have been plotted from diagrams provided by service authorities. This information has been prepared solely for the authorities own use and may not necessarily be updated or accurate.

The position of services as recorded by the authority at the time of installation may not reflect changes in the physical environment subsequent to installation.

Taylor Thomson Whitting does not guarantee that the services information shown on these drawings shows more than the presence or absence of services, and will accept no liability for inaccuracies in the services information shown from any cause whatsoever.

The Contractor must confirm the exact location and extent of services prior to construction and notify any conflict with the drawings immediately to the Engineer/Superintendent.

The contractor is to get approval from the relevant state survey department, to remove any survey mark. This includes but is not limited to; State Survey Marks (SSM), Permanent Marks (PM), cadastral reference marks or any other survey mark which is to be removed or adjusted in any way.
Taylor Thomson Whitting plans do not indicate the presence of any survey mark. The contractor is to undertake their own search.

LINEMARKING LEGEND

- E1 — Edge line type E1
- E5 — Edge line type E5
- BB — Barrier line
- TB — Holding line
- TF — Stop line
- C1 — Continuity line
- T1 — Turn line
- S1 — Separation line type S1
- S2 — Separation line type S2
- L1 — Lane line type L1
- B1 — Bike lane line

NOTE
Line marking to be in accordance with AS1742.2 and the relevant local or state authority guidelines

SITEWORKS NOTES

1. All basecourse material to comply with RTA specification No 3051 and compacted to minimum 98% modified standard dry density in accordance with AS 1289 5.2.1.
2. All trench backfill material shall be compacted to the same density as the adjacent material.
3. All service trenches under vehicular pavements shall be backfilled with an approved select material and compacted to a minimum 98% standard maximum dry density in accordance with AS 1289 5.1.1

PAVEMENT LEGEND

P1
50mm Thickness asphaltic concrete (AC14) on
150mm Compacted thickness fine crushed rock (DGB20) on
250mm Compacted thickness fine crushed rock (DGS40) with 4% lime stabilisation

P2
180mm Thickness concrete (f'c=32MPa) with SL92 fabric (40 top cover) on
100mm Compacted thickness fine crushed rock (DGB 20)

P3
100mm Thickness concrete (f'c=25MPa) with expansion joints at max 6.0m centres and weakened plane joints at max 1.5m centres on
30mm Sand bedding

P4
80mm Pavers to Architects specification on 30mm Thick mortar bedding on
180mm Thickness concrete (f'c=32MPa) with SL72 fabric (40 top cover) on
100mm Compacted thickness fine crushed rock (DGB20)

NOTE
Asphaltic concrete shall conform to AS2150 and the specification

SITEWORKS LEGEND

- F22.20 / F22.00 — Finished surface level / Finished contour
- K&G — Kerb and gutter
- KO — Kerb only
- FK — Flush kerb
- DD — Dish drain
- MK — Mountable kerb
- IL10.00, 600 ø 'Z', 1.25%, Q=345 L/s, IL9.65 — Stormwater pit, flow direction and line with; Invert level upstream; Pipe size and class; Pipe grade; Flow (Litres per second); Invert level downstream
- GD — Grated drain
- Subsoil drainage line (100 dia)
- FP — Flushing point
- DP — Down pipe
- RP — Rodding point
- Concrete encased stormwater line
- Taper kerb to zero height over 500 mm — Wheelstop
- RW — Blockwork retaining wall
- RW — Brickwork retaining wall
- DEJ — Dowelled expansion joint
- SJ — Sawn joint
- KJ — Keyed construction joint
- WPJ — Weakened plane joint
- EJ — Expansion joint
- TKJ — Tied keyed joint
- Grass catch drain
- Overland flow path
- Guard Rail

SURVEY LEGEND

- +18.48 / 19 — Surface level / Contour
- Kerb line
- Batter
- Retaining wall
- SW — Stormwater drainage line
- T — Telecommunications line
- G — Gas line
- W — Water main
- S — Sewer line
- EASEMENT FOR ____(...m WIDE) — Easement
- Fence
- Tree to be removed/be retained
- Boundary
- SGN — Sign
- H — Hydrant
- MH — Manhole
- G — Gas
- SV — Stop Valve
- W — Water
- TEL — Telstra
- TRAP — Trap
- Gully
- Grate
- S — Sewer Manhole
- E — Energy Australia (Electricity)
- ELP — Electric Light Pole
- TL — Traffic Light
- TLL — Traffic Light Lid
- TLB — Traffic Light Box
- TB — Telephone Box
- PKM — Parking Meter
- PM 1234 — Permanent Mark
- BM 51.10 — Bench Mark
- FC — Fuel Cock
- FL — Flood Light
- LH — Lamp Hole
- LB — Letter Box
- SEAT — Seat
- KO — Kerb Outlet

CIVIL DRAWING LIST

Drawing No	Drawing Title
C101	NOTES AND LEGEND SHEET
C102	BUILDING A CONSTRUCTION - STAGED STORMWATER CONCEPT PLAN
C103	BUILDING A CONSTRUCTION - SITEWORKS PLAN SHEET 1
C104	BUILDING A CONSTRUCTION - SITEWORKS PLAN SHEET 2
C105	BUILDING A CONSTRUCTION - EROSION AND SEDIMENT CONTROL PLAN
C202	BUILDING B CONSTRUCTION - OVERALL PLAN
C203	BUILDING B CONSTRUCTION - SITEWORKS PLAN SHEET 1
C204	BUILDING B CONSTRUCTION - SITEWORKS PLAN SHEET 2
C205	ROAD LONGITUDINAL SECTION
C206	ROAD CROSS SECTIONS - SHEET 1
C207	ROAD CROSS SECTIONS - SHEET 2
C209	DETAILS SHEET 1
C302	BUILDING C CONSTRUCTION - SITEWORKS PLAN
C402	BUILDING D CONSTRUCTION - SITEWORKS PLAN
C502	BUILDING E CONSTRUCTION - SITEWORKS PLAN
C601	OVERALL (BUILDINGS A - E) SITEWORKS PLAN
C602	OVERALL (BUILDINGS A - E) EROSION AND SEDIMENT CONTROL PLAN

Rev	Description	Eng	Draft	Date
P8	ISSUE FOR EA SUBMISSION	SB	DH	29.09.10
P7	ISSUE FOR EA SUBMISSION	SB	DH	15.09.10
P6	ISSUE FOR COORDINATION	SB	DH	13.09.10
P5	ISSUE FOR EA SUBMISSION	SB	DH	06.05.10
P4	ISSUE FOR COMMENTS	SB	DH	05.03.10
P3	ISSUE FOR COMMENTS	SB	DH	26.02.10
P2	ISSUE FOR COMMENTS	SB	DH	23.02.10
P1	PRELIMINARY	SB	CR	08.02.10

Project
RESIDENTIAL DEVELOPMENT 128 HERRING ROAD, MACQUARIE PARK

Sheet Subject
NOTES AND LEGENDS SHEET

Architect
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Surry Hills NSW 2010

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LIPMAN
the obvious choice in property

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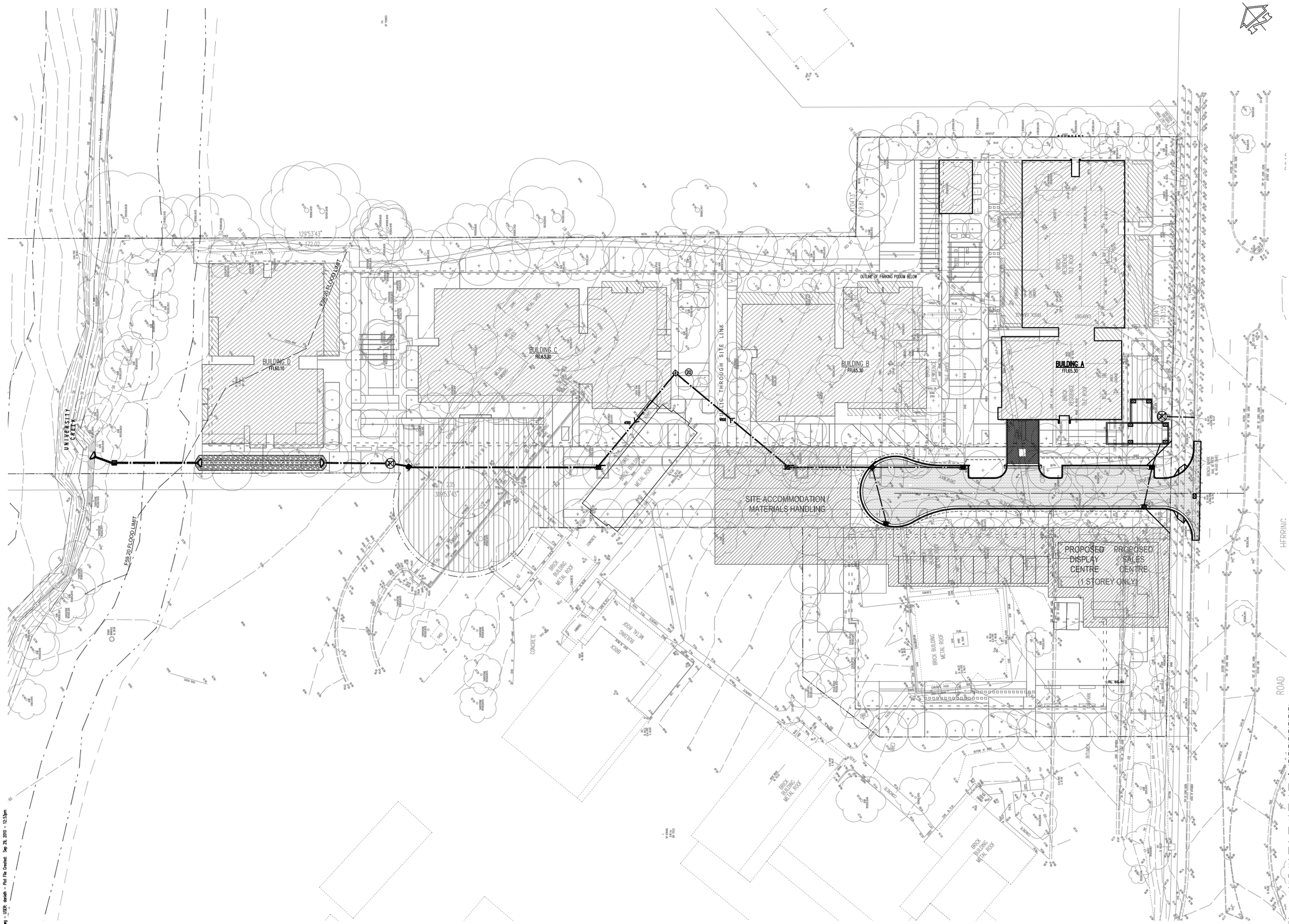
CONTRACTOR IS TO LOCATE ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK

FOR NOTES AND LEGENDS REFER TO DRAWING No C101

LEVELS SHOWN THUS - F10.00* - ARE TO BE CONFIRMED PRIOR TO THE COMMENCEMENT OF WORKS



PLAN
SCALE 1: 300

Rev	Description	Eng	Draft	Date
P8	ISSUE FOR EA SUBMISSION	SB	DH	29.09.10
P7	ISSUE FOR EA SUBMISSION	SB	DH	15.09.10
P6	ISSUE FOR COORDINATION	SB	DH	13.09.10
P5	ISSUE FOR EA SUBMISSION	SB	DH	06.05.10
P4	ISSUE FOR COMMENTS	SB	DH	05.03.10
P3	ISSUE FOR COMMENTS	SB	DH	26.02.10
P2	ISSUE FOR COMMENTS	SB	DH	23.02.10
P1	PRELIMINARY	SB	CR	10.02.10

Project
RESIDENTIAL DEVELOPMENT
128 HERRING ROAD,
MACQUARIE PARK

Sheet Subject
BUILDING A CONSTRUCTION - STORMWATER CONCEPT PLAN

Architect
TURNER + ASSOCIATES
Level 1, 410 Crown Street
Surry Hills NSW 2010

Client
LIPMAN
the obvious choice in property

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Scale : B1
1:300

Drawn
DH

Authorised
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CONTRACTOR IS TO LOCATE ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK

FOR NOTES AND LEGENDS REFER TO DRAWING No C10.1

LEVELS SHOWN THUS - F10.00* - ARE TO BE CONFIRMED PRIOR TO THE COMMENCEMENT OF WORKS

FOR CONTINUATION REFER TO DRAWING No C104

PUBLIC THROUGH SITE LINK

OUTLINE OF PARKING PODIUM BELOW

BUILDING A
FFL65.30

BUILDING TO BE RETAINED FOR STAGE 1

SITE ACCOMMODATION / MATERIALS HANDLING

PROPOSED DISPLAY CENTRE

PROPOSED SALES CENTRE
(1 STOREY ONLY)

NOTE: FINAL LAYOUT OF RE-USE TANK TO BE CONFIRMED

RE-USE VOLUME = 230m³
12.8m DEEP x 4m (W) x 4.5m (L)

DETENTION VOLUME = 58m³
1.2m DEEP x 4m (W) x 12.1m (L)

0.8% FALL
1.1% FALL
2.2% FALL

5m5m SPLAY

RL 68.40

HERRING ROAD

PLAN
SCALE 1: 200

SCALE 1:200 AT ORIGINAL SIZE

Rev	Description	Eng	Draft	Date
P7	ISSUE FOR EA SUBMISSION	SB	DH	29.09.10
P6	ISSUE FOR EA SUBMISSION	SB	DH	15.09.10
P5	ISSUE FOR COORDINATION	SB	DH	13.09.10
P4	ISSUE FOR EA SUBMISSION	SB	DH	06.05.10
P3	ISSUE FOR COMMENTS	SB	DH	05.03.10
P2	ISSUE FOR COMMENTS	SB	DH	26.02.10
P1	ISSUE FOR COMMENTS	SB	DH	23.02.10

Project
RESIDENTIAL DEVELOPMENT
128 HERRING ROAD,
MACQUARIE PARK

Sheet Subject
BUILDING A CONSTRUCTION - SITEWORKS PLAN SHEET 1

Architect
TURNER + ASSOCIATES
Level 1, 410 Crown Street.
Surry Hills NSW 2010

Client
LIPMAN
the obvious choice in property

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Scale : B1 | Drawn DH | Authorised

1:200

Job No 091679 | Drawing No C103 | Revision P7

Plot File Created: Sep 29, 2010 - 12:53pm

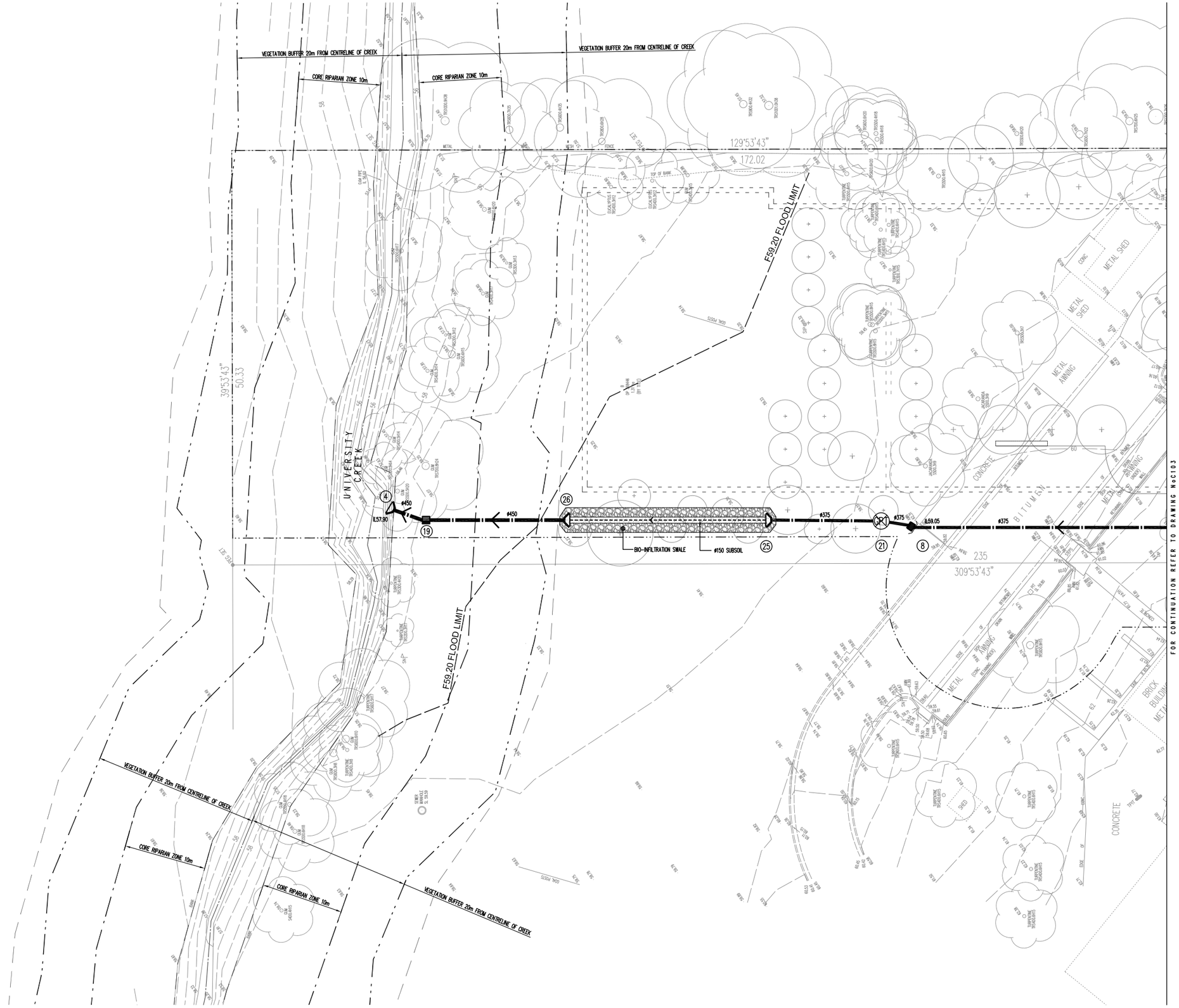
File Name: C103.dwg - USER: dsmith - Plot File Created: Sep 29, 2010 - 12:53pm

B1 0 1 2 3 4 5 6 7 8 9 10

CONTRACTOR IS TO LOCATE ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK

FOR NOTES AND LEGENDS REFER TO DRAWING No C10,1

LEVELS SHOWN THUS - F10.00" - ARE TO BE CONFIRMED PRIOR TO THE COMMENCEMENT OF WORKS



FOR CONTINUATION REFER TO DRAWING No C103

PLAN
SCALE 1: 200

SCALE 1:200 0 2 4 6 8 10 m
AT ORIGINAL SIZE

Rev	Description	Eng	Draft	Date
P7	ISSUE FOR EA SUBMISSION	SB	DH	29.09.10
P6	ISSUE FOR EA SUBMISSION	SB	DH	15.09.10
P5	ISSUE FOR COORDINATION	SB	DH	13.09.10
P4	ISSUE FOR EA SUBMISSION	SB	DH	06.05.10
P3	ISSUE FOR COMMENTS	SB	DH	05.03.10
P2	ISSUE FOR COMMENTS	SB	DH	26.02.10
P1	ISSUE FOR COMMENTS	SB	DH	23.02.10

Project
RESIDENTIAL DEVELOPMENT
128 HERRING ROAD,
MACQUARIE PARK

Sheet Subject
BUILDING A CONSTRUCTION - SITEWORKS PLAN SHEET 2

Architect
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Scale : B1
1:200

Drawn
DH

Authorised

Job No
091679

Drawing No
C104

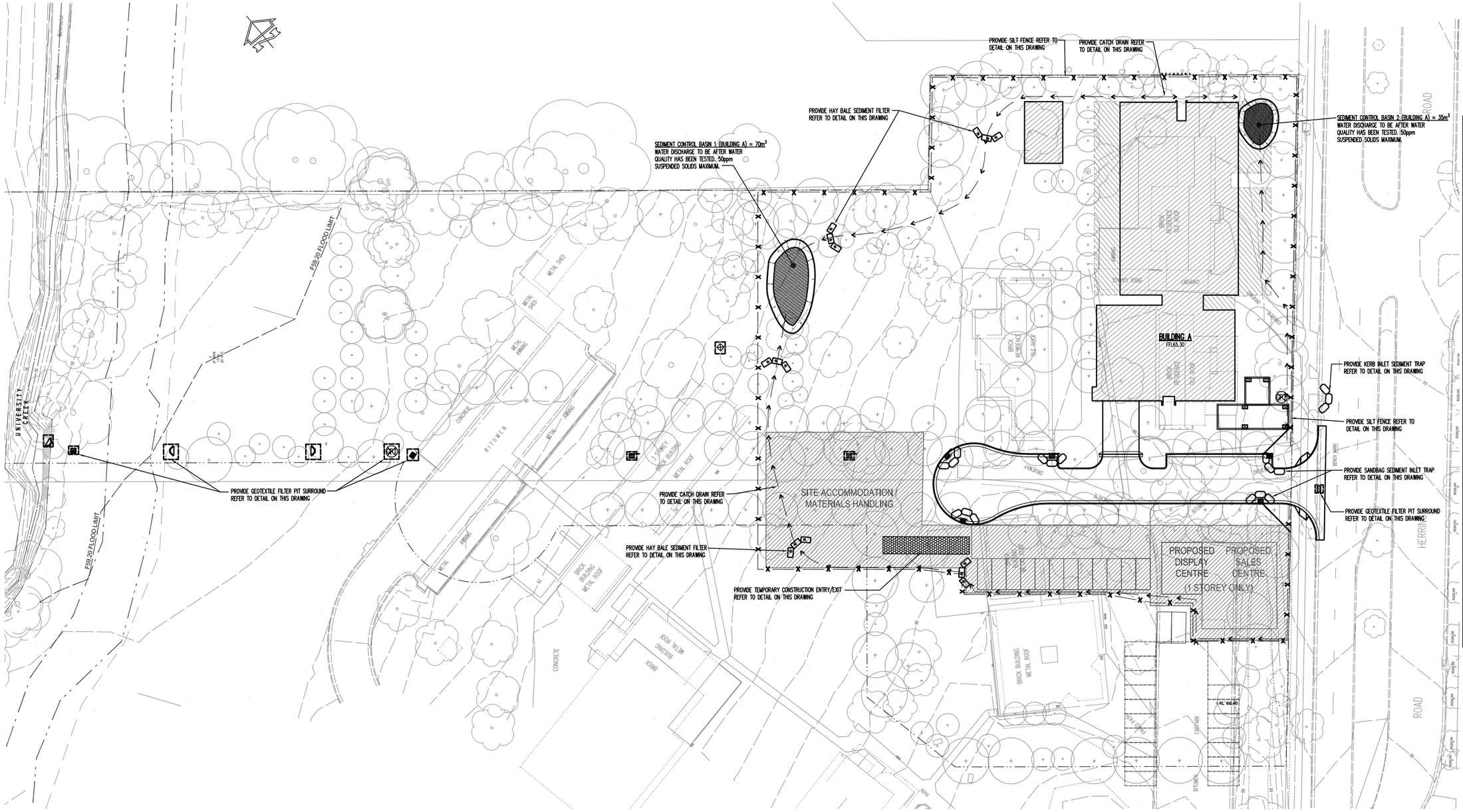
Revision
P7

Plot File Created: Sep 29, 2010 - 12:53pm

File Name: C104.dwg - USER: dsmith - Plot File Created: Sep 29, 2010 - 12:53pm

B1 0 1 2 3 4 5 6 7 8 9 10

CONTRACTOR IS TO LOCATE ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK



PLAN
SCALE 1: 300

EROSION AND SEDIMENT CONTROL NOTES

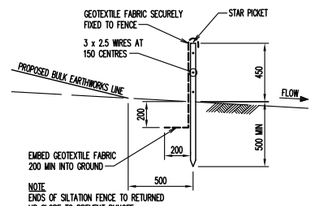
1. All work shall be generally carried out in accordance with
   (A) Local authority requirements,
   (B) EPA – Pollution control manual for urban stormwater,
   (C) Department of conservation and land management manual– "Urban Erosion & Sediment Control".
2. Erosion and sediment control drawings and notes are provided for the whole of the works. Should the Contractor stage these works then the design may require to be modified. Variation to these details may require to be approved by the relevant authorities. The erosion and sediment control plan shall be implemented and adopted to meet the varying situations as work on site progresses.
3. Maintain all erosion and sediment control devices to the satisfaction of the superintendent and the local authority.
4. When stormwater pits are constructed prevent site runoff entering the pits unless silt fences are erected around pits.
5. Minimise the area of site being disturbed at any one time.
6. Protect all stockpiles of materials from scour and erosion. Do not stockpile loose material in roadways, near drainage pits or in watercourses.
7. All soil and water control measures are to be put back in place at the end of each working day, and modified to best suit site conditions.
8. Control water from upstream of the site such that it does not enter the disturbed site.
9. All construction vehicles shall enter and exit the site via the temporary construction entry/exit.
10. All vehicles leaving the site shall be cleaned and inspected before leaving.
11. Maintain all stormwater pipes and pits clear of debris and sediment. Inspect stormwater system and clean out after each storm event.
12. Clean out all erosion and sediment control devices after each storm event.

Sequence Of Works

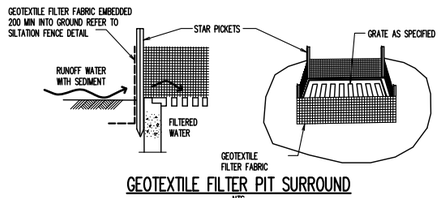
1. Prior to commencement of excavation the following soil management devices must be installed.
1.1. Construct silt fences below the site and across all potential runoff sites.
1.2. Construct temporary construction entry/exit and divert runoff to suitable control systems.
1.3. Construct measures to divert upstream flows into existing stormwater system.
1.4. Construct sedimentation traps/basin including outlet control and overflow.
1.5. Construct turf lined swales.
1.6. Provide sandbag sediment traps upstream of existing pits.
2. Construct geotextile filter pit surround around all proposed pits as they are constructed.
3. On completion of pavement provide sand bag kerb inlet sediment traps around pits.
4. Provide and maintain a strip of turf on both sides of all roads after the construction of kerbs.

EROSION AND SEDIMENT CONTROL LEGEND

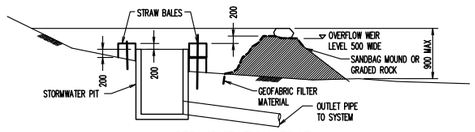
- Batter
- Siltation fence
- Stormwater pit with Geotextile filter surround
- Hay bale barriers
- Sandbag sediment trap
- Catch drain
- Overland flow path



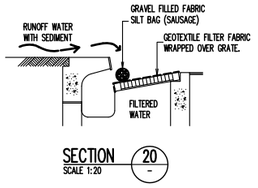
SILTATION FENCE DETAIL
SCALE 1: 20



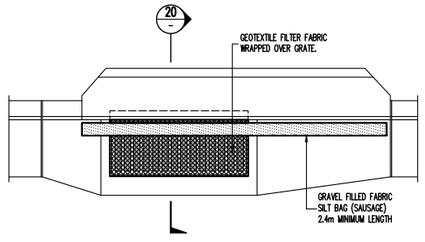
GEOTEXTILE FILTER PIT SURROUND
NTS



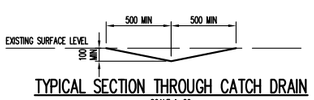
SEDIMENTATION TRAP
NTS



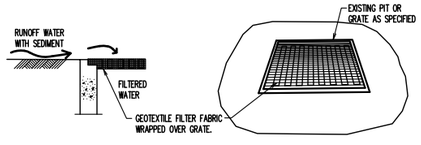
SECTION 20
SCALE 1:20



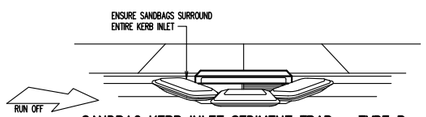
KERB INLET SEDIMENT TRAP
SCALE 1: 20



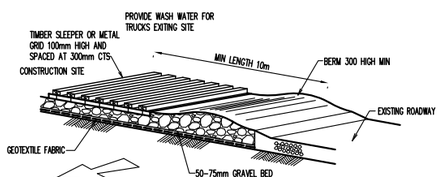
TYPICAL SECTION THROUGH CATCH DRAIN
SCALE 1: 20



GEOTEXTILE PIT FILTER
NTS



SANDBAG KERB INLET SEDIMENT TRAP – TYPE B
NTS



TEMPORARY CONSTRUCTION VEHICLE EXIT
NTS

Rev	Description	Eng	Draft	Date
P6	ISSUE FOR EA SUBMISSION	SB	DH	29.09.10
P5	ISSUE FOR EA SUBMISSION	SB	DH	15.09.10
P4	ISSUE FOR COORDINATION	SB	DH	13.09.10
P3	ISSUE FOR EA SUBMISSION	SB	DH	06.05.10
P2	ISSUE FOR COMMENTS	SB	DH	05.03.10
P1	ISSUE FOR COMMENTS	SB	DH	04.03.10

Project
RESIDENTIAL DEVELOPMENT
128 HERRING ROAD,
MACQUARIE PARK

Sheet Subject
BUILDING A CONSTRUCTION - EROSION AND SEDIMENT CONTROL PLAN

Architect
TURNER + ASSOCIATES
Level 1, 410 Crown Street.
Surry Hills NSW 2010

Client
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Scale : B1 | Drawn | Authorised
1:300 | DH | —

Job No: 091679 | Drawing No: C105 | Revision: P6

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B1 0 1 2 3 4 5 6 7 8 9 10

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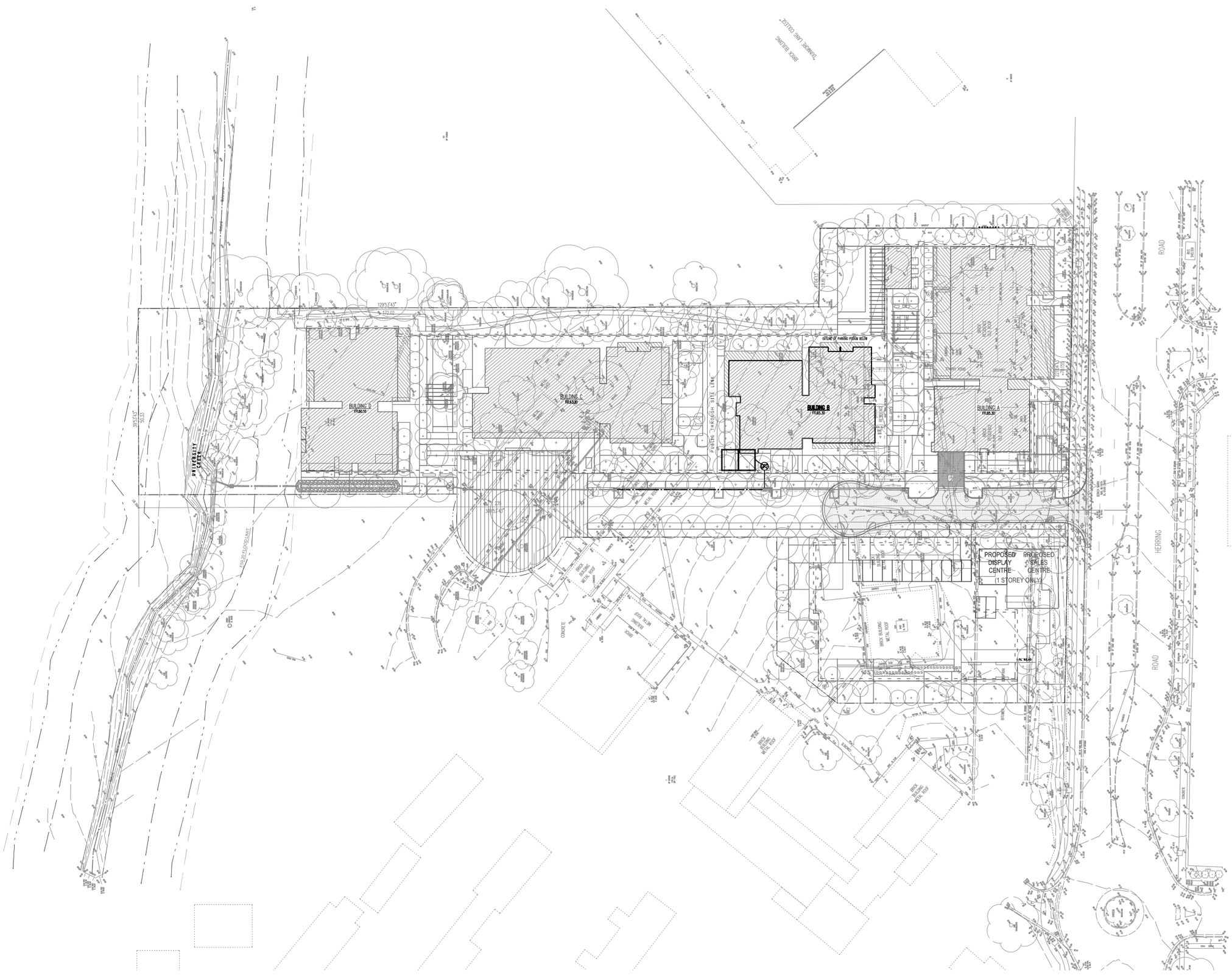
CONTRACTOR IS TO LOCATE ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK

FOR NOTES AND LEGENDS REFER TO DRAWING No C101



PLAN
SCALE 1: 400

Rev	Description	Eng	Draft	Date
P8	ISSUE FOR EA SUBMISSION	SB	DH	29.09.10
P7	ISSUE FOR EA SUBMISSION	SB	DH	15.09.10
P6	ISSUE FOR COORDINATION	SB	DH	13.09.10
P5	ISSUE FOR EA SUBMISSION	SB	DH	06.05.10
P4	ISSUE FOR COMMENTS	SB	DH	05.03.10
P3	ISSUE FOR COMMENTS	SB	DH	26.02.10
P2	ISSUE FOR COMMENTS	SB	DH	23.02.10
P1	PRELIMINARY	SB	CR	08.02.10

Project
RESIDENTIAL DEVELOPMENT
128 HERRING ROAD,
MACQUARIE PARK

Sheet Subject
BUILDING B CONSTRUCTION - OVERALL PLAN

Architect
TURNER + ASSOCIATES
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Scale: B1 1:400
Drawn DH
Authorised —

Job No 091679
Drawing No C202
Revision P8

Plot File Created: Sep 29, 2010 - 12:54pm

B1 0 1 2 3 4 5 6 7 8 9 10