Appendix 17

Engineering Plans of the Proposed Development

35 - 37 Frank Street, Wetherill Park

Mott MacDonald

Bell Consultancy Team

Resource Co.

35 - 37 Frank Street
Wetherill Park

Drawing List

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Development Application Drawings

MMD-364729-C-DR-DA01-101 P3
Date: 27.01.16

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General Notes

GN1 All workmanship and materials shall comply with the National Construction Code of Australia and the relevant current Australian Standards.

GN2 Any discrepancies, omissions or errors shall be reported to the Superintendent for clarification before proceeding with the work.

GN3 Do NOT scale measurements from the drawings.

Existing Services Notes

ES1 Existing services have been plotted from supplied data 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.

ES2 The contractor shall allow for the capping off, excavation and removal if required of all redundant existing services in areas affected by works within the contract area, as shown on the drawings unless directed otherwise by the superintendent.

ES3 The contractor shall ensure that at all times services to all buildings not affected by the works are not disrupted.

ES4 If required, the contractor shall construct temporary services to maintain existing supply to buildings 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 and the relevant service authority.

ES5 Interruption to supply of existing services shall be done so as not to cause any inconvenience to the principal. The contractor is to gain approval from the superintendent for time of interruption - the contractor is responsible for all liaison.

ES6 All branch gas and water services under driveways and brick paving shall be located in Ø80mm uPVC sewer grade conduits extending a minimum of 500mm beyond the edge of paving.

ES7 Clearance and cover requirements shall be obtained from the relevant service authority before commencement of works and shall be adhered to at all times.

ES8 Care is to be taken when excavating near existing services. No mechanical excavations are to be undertaken over telecom or electrical services. Hand excavate in these areas only.

Work As Executed

WX1 Upon completion of the new works, the following shall be submitted prior to any Certification being issued -

- Work-as-Executed plans based on the approved stormwater drainage plans prepared by a registered surveyor to verify that all as-built alignments and levels which are constructed in accordance with design requirements. Any minor changes or variations to the approved plans should be highlighted in red on the approved engineering plans.
- Compaction test results shall be prepared by a geotechnical engineer and submitted on all stormwater drainage trenches ensuring that all trenches are backfilled to 98% standard to AS1289 at +2%-0% optimum moisture content.

WX2 A qualified practitioner, with a certificate of attainment in NWP331A Perform Conduit Evaluation, shall undertake a closed circuit television (CCTV) inspection and then report on the condition of the entire as-built Council drainage pipelines after the completion of all works. No person is to enter any stormwater conduit without written approval from the superintendent. The camera and its operation shall comply with the following -

- The internal surface of the drainage pipe shall be viewed and recorded in a clear and concise manner.
- The CCTV camera used shall be capable to pan, tilt and turning at right angles to the pipe axis over an entire vertical circle to view the conduit joints.
- Distance from the manholes shall be accurately measured and displayed on the video.
- All pipe joints and defects are to be inspected by stopping movement and panning the camera to fully inspect the joint and/or defect.
- The inspection survey shall be conducted from manhole to manhole. The written report, together with a copy of the digital video footage of the pipelines shall be submitted to Council. Any defects identified from the CCTV and report shall be rectified by the applicant or the applicant's contractors to the satisfaction of Council's Engineers.

Concrete Notes

General

CN1 Use "AS3972 - 2010 - General purpose and blended cements - Type GP" cement (UNO).

CN2 All concrete shall be subject to project control sample and testing to AS3600 - 2009 - concrete structures.

CN3 Consolidate all concrete, including footings and slabs on ground with mechanical vibrators.

CN4 Cure all concrete as follows -
- keep surfaces continuously wet for 3 days, then
- prevent moisture loss for the next 4 days using polythene sheeting or wet hessian protected from wind and traffic, and then allow drying out.
- curing compounds may be used provided that they comply with AS3799 and they do not affect floor finishes.
- PVA-based curing compounds are NOT acceptable.

CN5 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 / RL	hard drawn wire fabric square or rectangular

following this symbol a numeral indicates the specified diameter.

CN6 Provide bar supports or spacers to provide concrete cover as detailed to all reinforcement.

Concrete Pavements

CN7 Concrete mix parameters -
maximum aggregate size 20mm
flexural strength at 28 days = 3.5 MPa, F'c= 32 MPa, (UNO)
flexural strength at 90 days = 3.85 MPa
max water/cement ratio = 0.55
max shrinkage limit = 650 micron strains (AS1012.13-1992)
min cement content = 300kg/m³
cement to be type "SL" (normal cement) to AS3972-2010
slump = 80mm

CN8 Early age saw cutting ('softcut') or similar shall be used for initial saw cut. It is to be performed as soon as the concrete has hardened sufficiently, to prevent excessive chipping, spalling, or tearing regardless of time or weather conditions.

CN9 Joint layout shall be as detailed on the plans.

CN10 Provide 10mm wide expansion joints between all buildings, other structures and pavements.

CN11 Bond breaker to be two (2) uniform coats of bitumen emulsion all over the exposed surface and on end.

CN12 Dowels and tie bars to meet strength requirements of structural grade steel in accordance with AS ISO 1302 - 2005 - geometrical product specifications.
Dowels and tie bars shall be -
straight,
to length specified,
all dowels to be hot dip galvanised,
sawn to length not cropped.

CN13 Dimensions of sealant reservoir dependant on the sealant type adopted. Superintendent approval to be obtained for sealant and reservoir dimensions and detail proposed by the contractor. Refer to plans for typical arrangement and sealant.

CN14 Prior to the placement of concrete in the adjacent slab, 'Ableflex' 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.

CN15 The base course shall be kept moist (not wet) by sprinkling with water immediately prior to pouring the concrete.

CN16 All work to be finished to satisfy its intended use as shown on the plans, and / or in accordance with the specification.

Kerbing Notes

CN17 All concrete kerbs to have a minimum characteristiccompressive strength F'c=32MPa (UNO).

CN18 All kerbs, dish drains, etc. to be constructed on 75mm minimum base course.(UNO on the Drawings)

CN19 Kerb expansion joints shall be formed from 10mm 'Abelflex' (or approved equivalent) for the full depth of the section.

CN20 Expansion joints shall be located at drainage pits, tangent points of curves and elsewhere at 12m maximum spacing (UNO).

CN21 Tooled joints shall be min 3mm wide and located at maximum 3m spacing.

CN22 Integral kerb joints shall match the location of the pavement jointing.

Stormwater Notes

SW1 For commercial or industrial sites -

All Ø300mm to Ø600mm drainage pipes shall be Class 4 approved spigot and socket reinforced concrete pipes with rubber ring joints (UNO). All Ø675mm or larger drainage pipes shall be Class 3 approved spigot and socket reinforced concrete pipes with rubber ring joints (UNO).

SW2 All drainage pipes less than or equal to Ø225mm shall be PVC-u DWV grade Class SN8 in accordance with AS/NZS 1260 : 2009 - PVC-u Pipes and Fittings for Drain, Waste and Vent Application with solvent welded joints.

SW3 Equivalent strength fibrous reinforced concrete (F.R.C.) and / or high density polyethylene (H.D.P.E.) may be used subject to approval by the superintendent.

SW4 All pipe junctions up to and including Ø450mm and tapers, shall be via purpose made fittings (UNO).

SW5 Minimum grade to stormwater lines to be 1% (UNO).

SW6 Contractor to supply and install all fittings and specials including various pipe adaptors to ensure proper connection between dissimilar pipework.

SW7 All connections to existing drainage pits shall be made in a tradesman-like manner and the internal wall of the pit at the point of entry shall be cement rendered to ensure a smooth finish with no protrusions.

SW8 All in-situ concrete pits to be 32Mpa minimum at 28 days.

SW9 Pits and pipes in areas of salinity hazard shall have increased cover to any reinforcement.

SW10 Precast concrete pits may be installed in lieu of cast in-situ pits, when pipe junctions are accommodated within the overall dimensions of the pit, and approved by the superintendent.

SW11 Pits deeper than 1000mm shall have step irons installed in accordance with the local or statutory authority requirements.

SW12 Bedding shall be type H2 (UNO) for pipes not under pavements, and Type HS2 for pipes under pavements in accordance with AS/NZS 3725 : 2007 - Design for Installation of Buried Concrete Pipes.

SW13 Backfill trench with sand or approved granular backfill to 300mm (min) above the pipe. Where the pipe is under pavements backfill remainder of trench to pavement subgrade with sand or approved gravel sub-base compacted in 150mm layers to 98% standard maximum dry density. The contractor is to ensure compaction equipment is appropriate for the pipe class used.

SW14 Where stormwater lines pass under floor slabs DWV grade PVC-u rubber ring joints are to be used (UNO).

SW15 Where subsoil drainage lines pass under floor slabs and vehicular pavements, unslotted PVC-u DWV grade Class SN8 pipe shall be used.

SW16 Provide 3m length of Ø100mm subsoil drainage line or 200 'Nylex' strip drain surrounded with 150mm of 20mm blue metal or gravel, and wrapped in 'Bidim' A24 geotextile filter fabric or approved equivalent, at invert of incoming upstream pipe on each pit.

Civil Works Legend

Symbol	Description
ROAD No1	Road name / number
	Sawcut existing pavement
KO	Construct kerb only
KG	Construct kerb and gutter
DD	Construct dish drain
	Transition kerb profile over 1.5m
	Construct batter
RW1	Construct reinforced retaining wall
	Limit of works
	Proposed Building

Siteworks Notes

SN1 Datum : Australian Height Datum (AHD)
Origin of levels : SSM 154595 RL 50.98
Origin of co-ordinates : Mapping Grid Of Australia (MGA)
Survey prepared by : William L. Backhouse
Suite 8, Brookhollow Ave, Baulkham Hills
wlb@backhouse.com.au / 02 9634-2866

SN2 The contractor must verify all dimensions and existing levels on site prior to commencement of work, and report any discrepancies to the superintendent.

SN3 All existing services (including any not shown on the plans) must be accurately located in position and level prior to any excavation. Any discrepancies shall be reported to the superintendent. minimum service clearances shall be maintained from the relevant service authority.

SN4 The contractor shall arrange for all setting out by a registered surveyor.

SN5 It is the contractors responsibility to notify the Department of Land and Property Information NSW, of any survey marks that will be destroyed in the construction of works.
Contact Head Office on 1300 052 637 www.lpi.nswgov.au and http://scims.lpi.nsw.gov.au/status_report_frames.html

SN6 The contractor shall obtain all regulatory authority approvals at their own expense.

SN7 Where new works abut existing, the contractor must ensure that a smooth and even profile, free from abrupt changes is obtained.

SN8 All disturbed areas shall be restored to their original condition, unless specified otherwise.

SN9 Excavated trenches shall be compacted to the same density as the adjacent natural material. Any subsidence's during the period to be rectified as directed by the superintendent.

SN10 Any existing trees which form part of the final landscaping plan will be protected from construction activities in accordance with the landscape architect's details and / or by -

Protecting them with barrier fencing or similar materials installed outside the drip line, ensuring that nothing is nailed to them, prohibiting paving, grading, sediment wash or placing of stockpiles within the drip line except under the following conditions -
Encroachment only occurs on one side and no closer to the trunk than either 1.5m or half the distance between the outer edge of the drip line and the trunk, which ever is the greater, a drainage system that allows air and water to circulate through the root zone (eg a gravel bed) is placed under all fill layers of more than 300mm care is taken not to cut roots unnecessarily nor to compact the soil around them.

SN11 Receptors for concrete and mortar slurries, paints, acid washings, light-weight waste materials and litter are to be emptied as necessary. Disposal of waste shall be in a manner approved by the superintendent or as specified in the works contract.

Pavement Legend

Symbol	Description
	Pavement Type 1 - Road Pavement. For details refer to drawing 103.
	Pavement Type 2 - Carpark Pavement. For details refer to drawing 103.
	Pavement Type 3 - Footpath Pavement
	Pavement Type 4 - Paving. Refer to Landscape Architect's drawings for details of different paving treatment.
	Landscaping as per Landscape Architect's drawings

Note
All pavements are Indicative only. To be confirmed by Geotechnical investigation, testing and design.

Earthworks Notes

EW1 All work shall comply with AS3798 (2007) - Guidelines on earthworks for commercial and residential developments.

EW2 All work shall comply with the project geotechnical report -

EW3 Strip topsoil to expose naturally occurring engineering material and stockpile on site for reuse as directed by the superintendent.

EW4 All soft, wet or unsuitable material to be removed as directed by the superintendent and replaced with approved fill material.

EW5 All fill material shall be from a source approved by the superintendent and shall comply with the following -
a) free from organic and perishable matter,
b) maximum particle size 75mm,
c) plasticity index - between 2% and 15%.

EW6 All fill material shall be placed in maximum 200mm thick layers and compacted at optimum moisture content (+ or - 2%) to achieve a dry density determined in accordance with AS1289.5.1.1 - 2003 - methods of testing soils for engineering purposes of not less than the following standard minimum dry density -

location	standard dry density
under building slabs	98%
vehicular paved areas	100%
non-vehicular paved areas	98%
landscaped areas	95%

EW7 The contractor shall program the earthworks operation so that the working areas are adequately drained during the period of construction. The surface shall be graded and sealed off to remove depressions, roller marks and similar which would allow water to pond and penetrate the underlying material, any damage resulting from the contractor not observing these requirements shall be rectified by the contractor at their own expense.

EW8 Testing of the fill material shall be carried out by an approved NATA registered laboratory at the contractors expense.

EW9 Where the subgrade is unable to support construction equipment, or it is not possible to compact overlying pavement layers, only because of the subgrade moisture content, then the contractor shall condition or replace the material at the contractors discretion and expense.

EW10 Earthworks calculations are volumetric only and do not allow for bulking of excavated material. It is the contractors responsibility to make allowances for these items as part of the tender / works.

EW11 No allowance has been made for footings or foundations, retaining walls or trenching. It is the contractors responsibility to make allowance for these items as part of the tender / works.

Stormwater Drainage Legend

Symbol	Description
A1	Stormwater drainage structure / pit number
	Construct surface inlet pit
	Construct junction pit
	Construct kerb inlet pit
SW	Stormwater drainage line
USIL 10.00	Upstream invert level
Ø300 '2'	Pipe size / class
1.0 %	Grade
10.0m	Length
Q= 1.0 L/s	Flow
DSIL 10.00	Downstream invert level
	Construct grated drain
	Construct slotted subsoil drainage line
	Construct unslotted subsoil drainage line
IR	Construct subsoil intermediate riser
HER	Construct subsoil high end riser

Survey Legend

Symbol	Description
268°02' 198.12	Existing boundary, bearing and distance
PINE	Existing road name
SHED	Existing building
	Existing kerb and spot levels
BLOCK WALL	Existing block wall
MESH FENCE	Existing fence
	Existing spot level
	Existing earth batter
TREE 0.3D 8H 4S	Existing tree, level, trunk diameter, height and spread
ee	Existing electricity (underground)
ee	Existing electricity (overhead)
eg	Existing gas
es	Existing sewer
250mm DIA. PIPE INV.12.4	Existing stormwater drainage
ew	Existing water
et	Existing telecommunications (underground)
	Existing electricity pit, pole, pole with light and light pole
	Existing gas valve
	Existing sewer pit and maintenance hole
	Existing stormwater grate, maintenance hole and pit
	Existing water hydrant, stop valve and valve
	Existing telecommunications pit and pillar
	Existing maintenance hole (unspecified)
	Existing pole (unspecified)
	Existing pit (unspecified)
	Existing traffic signal
	Existing public road pavement

Civil Grading Legend

Symbol	Description
	Construct surface to level..
F10.00	Finished surface level
F10.00*	Levels to be confirmed on site prior to commencement of works
IL10.00	Invert level
F10.00	Major contour
F9.50	Minor contour
XX % Fall	Construct finished surface to grade
Batter 1 / 1	Construct batter slope

Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	27.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

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Project: Resource Co
35 - 37 Frank Street, Wetherill Park

Title: Notes and Legends

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
N/A	APR	P3	STD

Drawing Number: MMD-364729-C-DR-DA01-102

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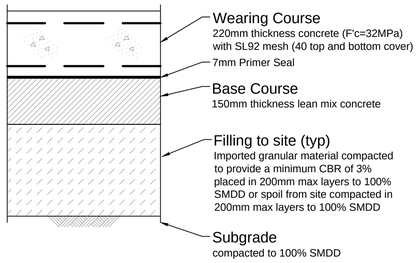
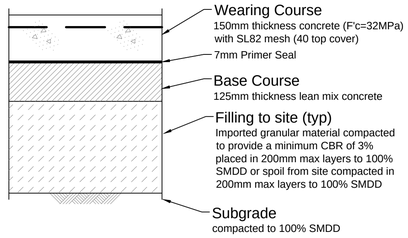


Concrete Pavement - Road Circulation

1:10

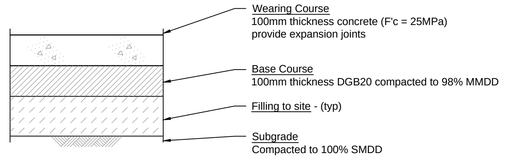
Pavement Type 1



Concrete Pavement - Carpark

1:10

Pavement Type 2



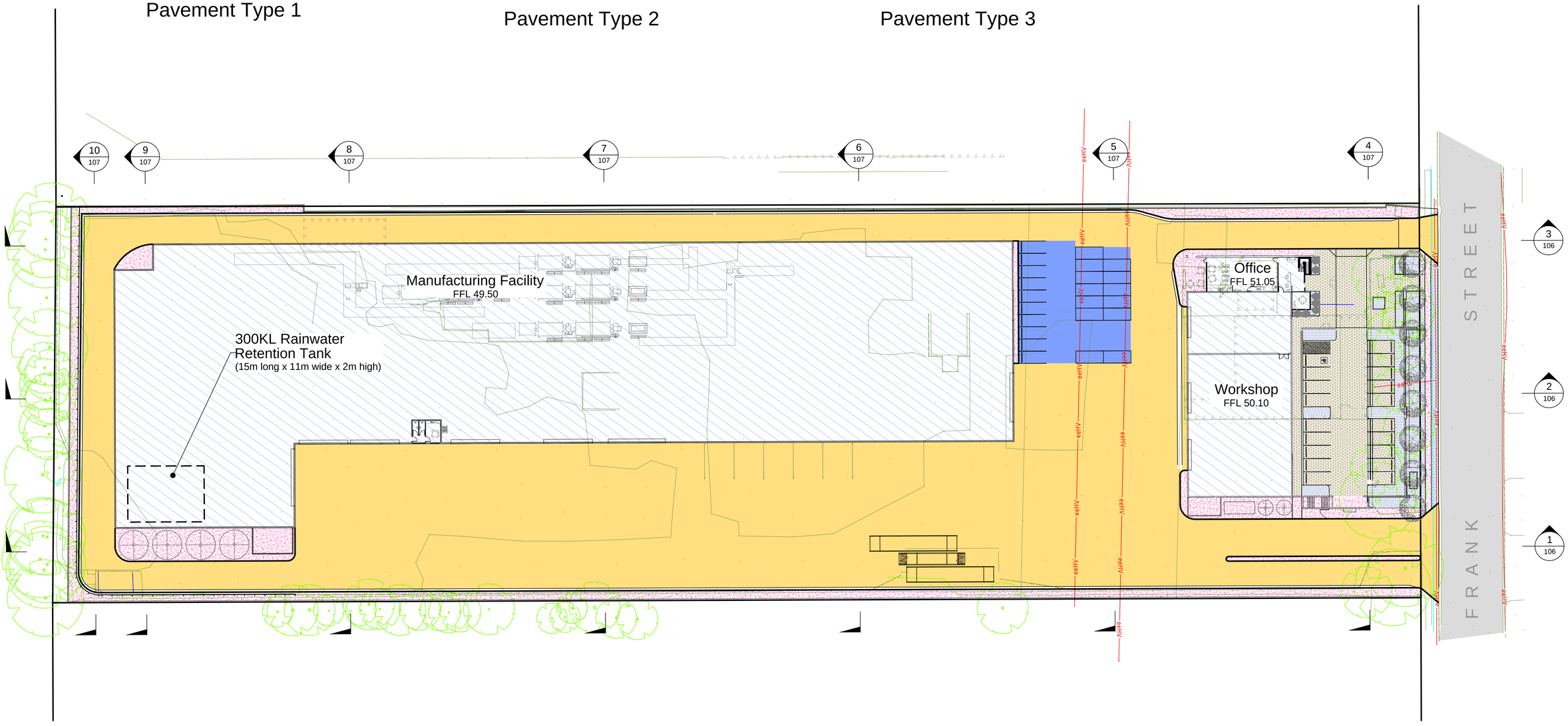
Footpath Pavement

1:10

Pavement Type 3

Pavement notes

1. Pavement construction is to follow the general approach and specifications as outlined in the Geotechnical report.
2. All pavement design is subject to geotechnical / structural testing, investigation and design. The pavements listed on this drawing are provisional only.
3. Design subgrade CBR to be confirmed by geotechnical engineer during construction and select fill depth to be varied accordingly subject to test results.



Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	28.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

1:10 0 500mm 1000mm

SCALE AT A3 IS 1:20

1:400 0 20m 40m

SCALE AT A3 IS 1:800

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35 - 37 Frank street, Wetherill Park

Title
General Arrangement Plan

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
1:10,400	APR	P3	STD

Drawing Number
MMD-364729-C-DR-DA01-103

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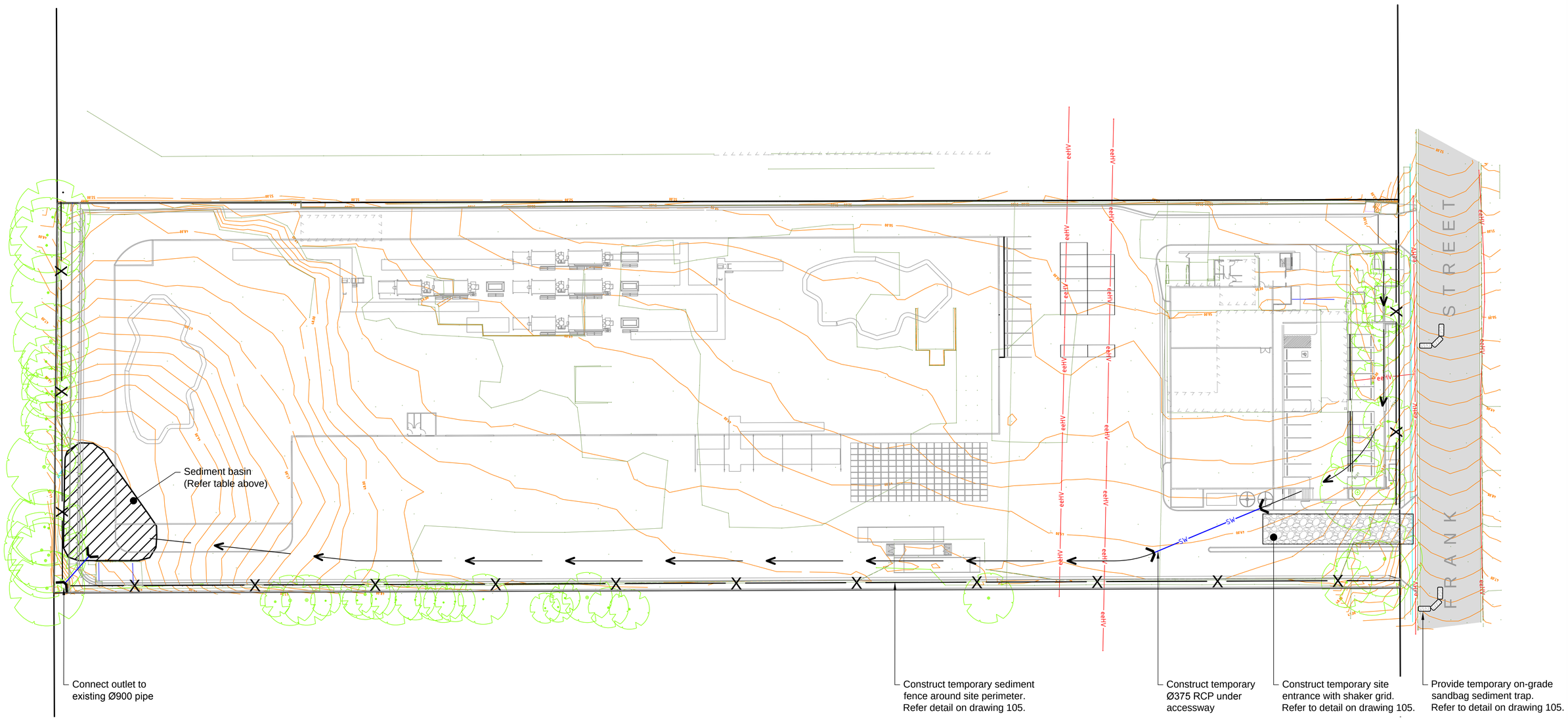
Sediment Basin Details

Site	Cv	Rainfall event (x-day y-%ile)	Total catchment area (ha)	Settling zone volume (m3)	Sediment storage volume (m3)	Total basin volume (m3)
Resource Co	0.50	32.2	2.0773	334	167	501

Erosion and Sediment Control Legend

- Construct catch drain
- Construct temporary sediment fence
- Install sandbag sediment traps
- Install haybale sediment traps
- Install temporary site access
- Construct sediment basin



Connect outlet to existing Ø900 pipe

Construct temporary sediment fence around site perimeter. Refer detail on drawing 105.

Construct temporary Ø375 RCP under accessway

Construct temporary site entrance with shaker grid. Refer to detail on drawing 105.

Provide temporary on-grade sandbag sediment trap. Refer to detail on drawing 105.

Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	27.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

1:400 0 20m 40m

SCALE AT A3 IS 1:800

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Title
Concept Sediment and Erosion Management Control Plan

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
1:400	APR	P3	STD

Drawing Number
MMD-364729-C-DR-DA01-104

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Soil and Water Management Notes

General Instructions

SWM01 These plans present a conceptual soil and water management plan (SWMP) only and shows a possible way of managing soil and erosion. The contractor shall be responsible for the establishment and management of the site and preparing a detailed plan and obtaining approval from the relevant authority prior to the commencement of any works.

SWM02 This plan is to be read in conjunction with the engineering plans and any other plans, written instructions, specification or documentation that may be issued and relating to development of the subject site.

SWM03 The contractor will ensure that all soil and water management works are consistent with 'Managing Urban Stormwater - Soils and Construction' - also known as 'The Blue Book'.

SWM04 All builders and sub-contractors shall be informed of their responsibilities in minimising the potential for soil erosion and pollution to downslope lands and waterways.

Erosion Control

SWM05 Water shall be prevented from entering the permanent drainage system until sediment concentration is less then or equal to 50mg/L, ie the catchment area has been permanently landscaped and / or any likely sediment has been filtered through an approved structure.

SWM06 Any sand used in the concrete curing process (spread over the surface) will be removed as soon as possible and within 10 working days from placement.

SWM07 Acceptable receptors will be constructed for concrete and mortar slurries, paints, acid washings, light-weight waste materials and litter.

SWM08 'Sediment' fencing will be installed as indicated on the plans and at the direction of site superintendent to ensure containment of sediment. The sediment fencing will outlet or overflow under stabilised conditions into the sediment basin, to safely convey water into a suitable filtering system should the pores in the fabric block.

SWM09 The sediment basins will be constructed with the minimum sediment storage capacity of 205 cubic metres and designed to remain stable in at least the 1 in 20 year critical duration storm event. Artificial flocculation of the finer particles may not be necessary in this instance.

SWM10 Stockpiles should not be located within 5m of trees and hazard areas, including likely areas of concentrated or high velocity flows such as waterways, drainage lines, paved areas and driveways. Where they are within 5m from such areas, special sediment control measures should be taken to minimise possible pollution to downstream waters. Measures should also be applied to prevent the erosion of the stockpile.

SWM11 All cut and fill batters are to be seeded and mulched within 14 days of completion of formation.

SWM12 Any existing trees which form part of the final landscaping plan will be protected from construction activities by-

a. Protecting them with barrier fencing or similar materials installed outside the drip line,
b. Ensuring that nothing is nailed to them,
c. Prohibiting paving, grading, sediment wash or placing of stockpiles within the drip line except under the following conditions,

(i) Encroachment only occurs on one side and no closer to the trunk than either 1.5 metres or half the distance between the outer edge of the drip line and the trunk, which ever is the greater,

(ii) A drainage system that allows air and water to circulate through the root zone (e.g. a gravel bed) is placed under all fill layers of more than 300 millimetres depth

(iii) Care is taken.

SWM13 During windy weather, large disturbed unprotected areas should be kept moist (not wet) by sprinkling with water to keep dust under control.

SWM14 Temporary protection from erosive forces will be undertaken on lands where final shaping has not been completed but works are unlikely to proceed for periods of two months or more (eg. on topsoil stockpiles). This may be achieved with a vegetative cover. A recommended listing of plant species for temporary cover is -

i) autumn/winter sowing - oats/ryecorn at 20 kg/ha
- japanese millet at 10 kg/ha
ii) spring/summer sowing - japanese millet at 20 kg/ha
- oats/ryecorn at 10 kg/ha

SWM15 Diversion banks / channels will be rehabilitated as soon as possible and within 5 working days from their final shaping. Other than in the winter months, suitable materials include turf grasses such as Couch or Kikuyu. During winter, or at other times when temporary rehabilitation (more than 3 months) is required, it is suggested that hessian cloth is used but only if tacked with appropriate pegs and an anionic bitumen emulsion. Foot and vehicular traffic should be kept away from these areas.

SWM16 Undertake site development works in accordance with the engineering plans. Where possible, phase development so that land disturbance is confined to areas of workable size.

Construction Sequence

SWM17 Where practical, the soil erosion hazard on the site should be kept as low as possible. To this end, works should be undertaken in the FOLLOWING SEQUENCE -

(i) Install inlet sediment traps to all gully pits fronting the site,

(ii) Install a 1.8m chain wire fence around the boundaries and attach hessian cloth or similar to it on the windward side (ties at the top, centre and bottom and at 1m intervals or as instructed by the superintendent),

(iii) Install geofabric sediment fence and sediment traps around all permanent stormwater reticulation structures as shown on the plan,

(iv) Construct stabilised construction entrance as shown on the plan or to location as determined by superintendent,

(v) Install diversion banks along the boundary where required, rehabilitate disturbed lands downslope from the basins within 20 working days,

(vi) Ensure that the sediment basin is directed onto a turfed area and drains to a suitable location. A temporary stormwater line may be necessary to convey the flows to this location. Construct diversion channels at the boundary to drain into the sediment basin as shown on plans,

(vii) At completion stabilise site and decommission sediment basin and all erosion control devices.

SWM18 Temporary soil and water management structures will be removed only after the lands they are protecting are rehabilitated.

SWM19 Final site landscaping will be undertaken as soon as possible and within 20 working days from completion of construction activities.

Site Inspection and Maintenance

SWM20 At least weekly and after every rain fall event, the contractor will inspect the site and ensure that -

(i) Drains and all sediment control devices operate effectively and initiate repair or maintenance as required,

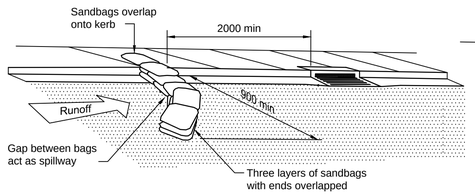
(ii) Receptors for concrete and mortar slurries, paints, acid washings, light-weight waste materials and litter are to be emptied as necessary. Disposal of waste shall be in a manor approved by the superintendent,

(iii) Spilled sand (or other materials) is removed from hazard areas, including likely areas of concentrated or high velocity flows such as waterways, gutters, paved areas and driveways,

(iv) Sediment is removed from basins and / or traps when less than 20m³ of trapping capacity remain per 1000m² of disturbed lands, and / or less than 500mm depth remains in the settling zone. Any collected sediment will be disposed in areas where further pollution to down slope lands and waterways is unlikely,

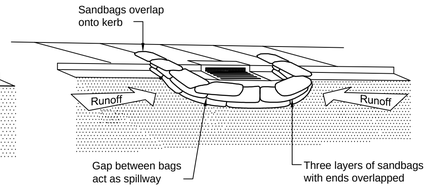
(v) Rehabilitated lands have effectively reduced the erosion hazard and initiate upgrading or repair as appropriate.

SWM21 The contractor shall provide all monitoring control and testing.



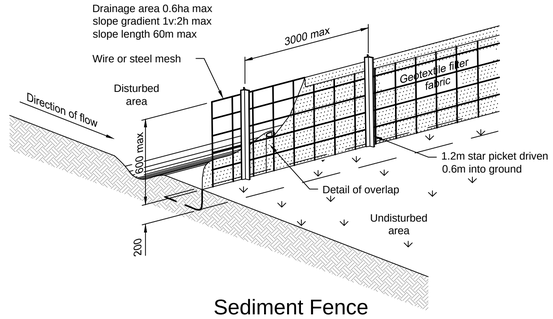
Sediment Trap for Kerb Inlet (On Grade - Sandbag)

NTS



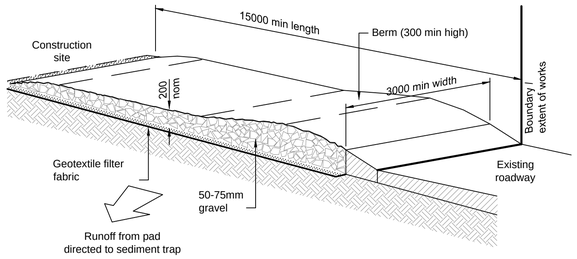
Sediment Trap for Kerb Inlet (at Low Point - Sandbag)

NTS



Sediment Fence (Geotextile Filter Fabric)

NTS

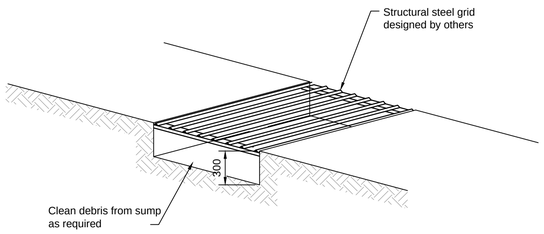


Temporary Site Entrance

NTS

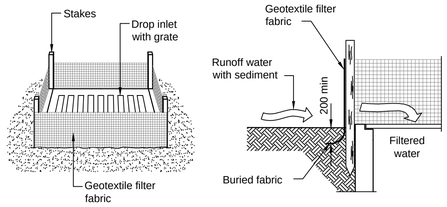
Maintenance

- The temporary access shall be maintained in a condition that prevents tracking or flowing of sediment onto public rights of way,
- This may require periodic top dressing with additional gravel as conditions demand and repair and/or cleanout of any measures used to trap sediment,
- All sediment spilled, dropped, washed or tracked onto public rights of way must be removed immediately.



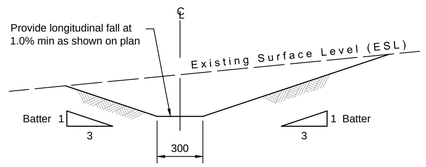
Shaker Pad

NTS



Sediment Trap for Drop Inlet (Geotextile Filter Fabric)

NTS



Catch Drain

NTS

Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	27.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

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Resource Co
35 - 37 Frank Street, Wetherill Park

Title
Concept Sediment and Erosion Management Details

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
N/A	APR	P3	STD

Drawing Number
MMD-364729-C-DR-DA01-105

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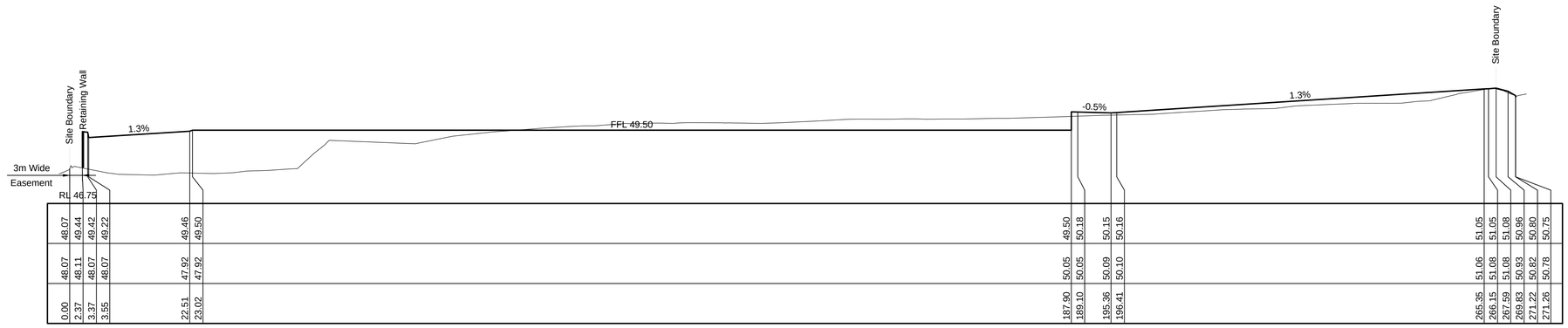

48.07	49.44	49.42	49.22	49.46	49.50	49.50	50.18	50.15	50.16	51.05	51.05	51.08	50.96	50.80	50.75
48.07	48.11	48.07	48.07	47.92	47.92	50.05	50.05	50.09	50.10	51.06	51.08	51.08	50.93	50.82	50.78
0.00	2.37	3.37	3.55	22.51	23.02	187.90	189.10	195.36	196.41	265.35	266.15	267.59	269.83	271.22	271.26

Section 3
1:500 Hor
103

45.88	49.47	49.45	49.25	49.39	49.50	49.50	49.47	49.30	50.00	50.10	50.10	50.70	50.67	50.52	50.44	50.38	50.24	50.39	50.47	49.77	49.62
45.88	45.93	45.89	45.89	45.79	45.78	49.58	49.57	49.61	49.69	49.78	49.77	49.77	49.86	49.86	49.77	49.70	49.92	49.91	49.73		49.60
0.37	3.11	4.11	4.29	9.94	10.24	188.64	189.84	196.09	218.74	222.64	243.24	243.33	244.83	245.01	251.99	258.19	263.59	263.77	266.35		268.33

Section 2
1:500 Hor
103

Proposed Level	44.10	49.38	49.36	49.16	49.27	49.41	49.14	49.14	49.30	49.30	49.10	49.10	49.26	49.26	49.08	49.29	49.38	49.38	47.99	47.51	47.29	47.26
Existing Level	44.10	43.23	42.22	42.04	42.24	47.19	48.29	48.36	48.39	48.43	48.57	48.60	48.75	48.81	48.95	49.00	49.04	49.03	48.41	47.63	47.31	47.30
Offset	0.00	3.11	4.11	4.29	8.61	47.72	72.66	80.95	102.66	110.96	132.67	140.96	162.67	170.95	196.88	210.11	218.74	221.17	258.85	268.34	271.95	271.96

Section 1
1:500 Hor
103

Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	27.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

1:100 0 5m Vertical 10m
SCALE AT A3 IS 1:200
1:500 0 25m Horizontal 50m
SCALE AT A3 IS 1:1,000

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Client
BELL
Consultancy Team

Project
Resource Co
35 - 37 Frank Street, Wetherill Park

Title
Site Cross Sections
Sheet 1 of 2

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
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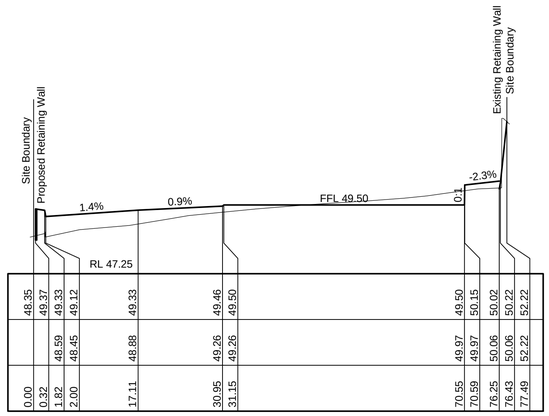
Drawing Number
MMD-364729-C-DR-DA01-106



48.35	49.37	49.33	49.12	49.33	49.46	49.50	49.50	50.15	50.02	50.22	52.22
		48.59	48.45	48.88	49.26	49.26	49.97	49.97	50.06	50.06	52.22
0.00	0.32	1.82	2.00	17.11	30.95	31.15	70.55	70.59	76.25	76.43	77.49

Section 6
103
1:500 Hor

44.99	49.35	49.31	49.11	49.32	49.50	49.50	49.44	49.29	49.49	48.65
	45.02	45.16	45.16	43.21	43.35	47.83	47.83	48.56	48.66	48.65
0.00	0.32	1.82	2.00	12.47	12.73	68.22	68.40	76.25	76.43	77.64

Section 9
103
1:500 Hor

For details of retaining wall geometry
and preservation of existing trees
along the Western boundary - refer to
landscape architect's drawing
0215-0954 LD 400

48.50	49.26	49.22	49.02	49.23	49.48	49.55	49.61	49.66	49.68	49.68	50.08	50.32	50.22	50.42	52.60
		48.79	48.66	48.96	49.18	49.20	49.22	49.25	49.27	49.90	50.12	50.19	50.24	50.24	52.60
0.00	0.32	1.82	2.00	8.87	18.31	19.40	20.48	21.56	22.64	52.38	63.72	70.59	76.25	76.43	77.44

Section 5
103
1:500 Hor

47.74	49.44	49.40	49.19	49.46	49.50	49.50	49.72	49.59	49.79	51.98
47.74	47.88	47.92	47.93	48.01	48.02	49.08	49.08	49.02	49.02	51.98
0.00	0.32	1.82	2.00	30.95	31.15	70.55	70.59	76.25	76.43	77.60

Section 8
103
1:500 Hor

Proposed Level	47.85	47.84	47.80	47.60	48.00	48.15	48.30	48.34	48.70	50.06	49.99	49.85	50.68	50.83	50.85	50.94	50.97	51.17	51.21	53.35
Existing Level	47.91	48.09	48.52	48.53	48.42	48.63	48.64	48.81	48.96	48.97	49.11	49.12	49.69	49.99	50.25	50.65	50.89	50.89	50.87	53.35
Offset	0.00	0.32	1.82	2.00	9.70	15.50	15.68	17.43	19.40	19.60	22.18	22.36	52.69	60.30	63.30	68.40	74.40	74.58	76.08	77.39

Section 4
103
1:500 Hor

48.20	49.49	49.45	49.23	49.25	49.46	49.50	49.50	50.11	49.98	50.18	51.87
		48.29	48.29	48.33	48.79	48.79	49.81	49.81	49.99	50.00	51.87
0.00	0.32	1.82	2.00	3.87	30.95	31.15	70.55	70.59	76.25	76.43	77.54

Section 7
103
1:500 Hor

44.15	49.43	49.39	49.19	49.26	49.20	49.44	49.21	49.41	48.53
44.15	44.22	44.55	44.61	42.21	42.40	46.91	48.45	48.46	48.53
0.00	0.32	1.82	2.00	9.50	19.12	53.38	76.25	76.43	77.65

Section 10
103
1:100,500

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	27.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

SCALE AT A3 IS 1:200

SCALE AT A3 IS 1:1,000

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Project
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35 - 37 Frank Street, Wetherill Park

Title
Site Cross Sections
Sheet 2 of 2

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
1:100,500	APR	P3	STD

Drawing Number
MMD-364729-C-DR-DA01-107

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Bulk Earthworks Legend

Cut zone

Fill zone

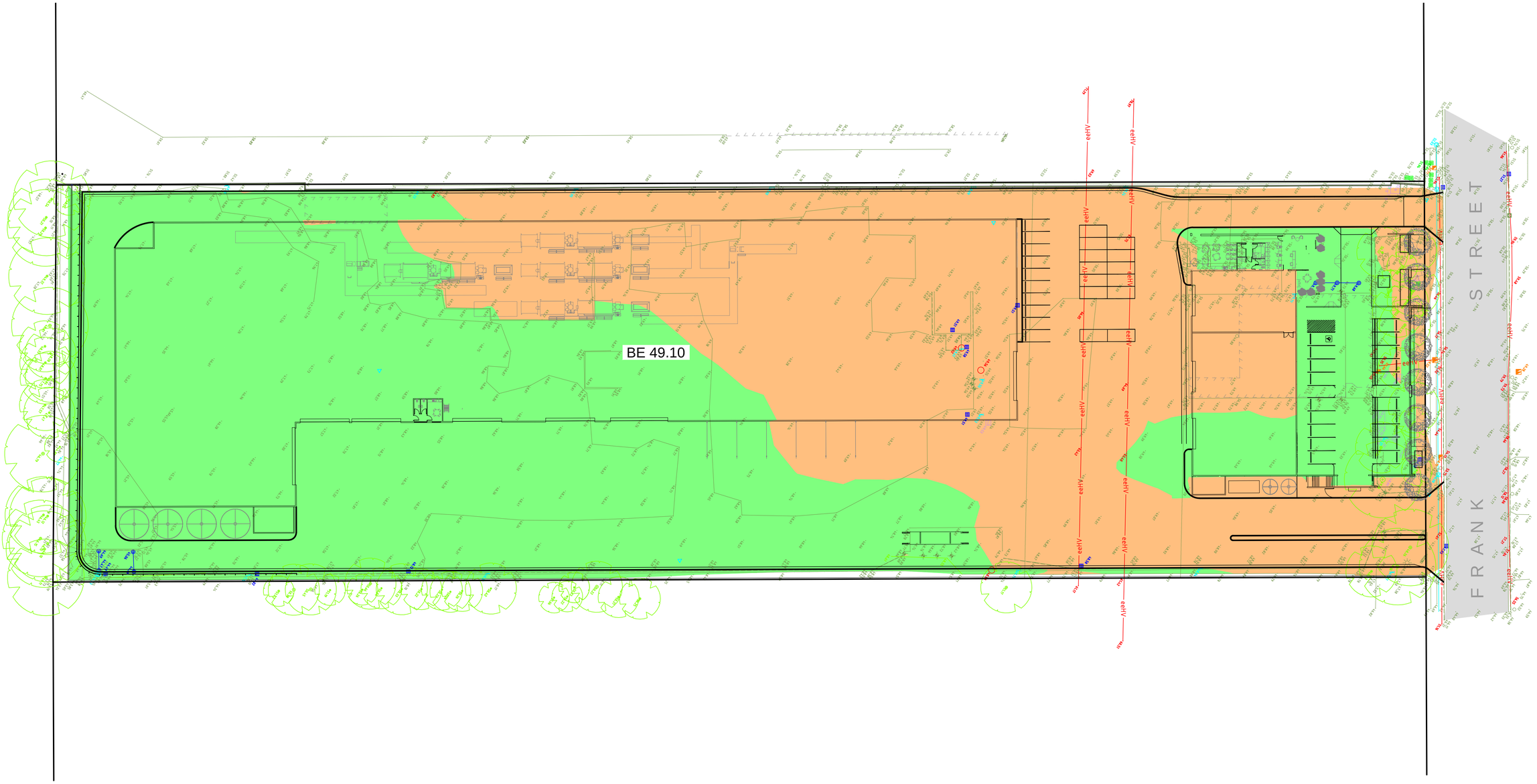
Bulk Earthworks Calculations

Cut:	-3,000m³
Fill:	+12,000m³
Balance:	9,000m³ (Imported Fill)

Assumptions:

1. Earthworks calculations are preliminary only
2. Strip site: nil
3. Pavement Depths: 400mm
4. Building Slab Depth: 400mm

Note
Refer to earthworks construction notes on Drg.102



Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	28.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

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SCALE AT A3 IS 1:800

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Title
Bulk Earthworks Layout Plan

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

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Drawing Number
MMD-364729-C-DR-DA01-108

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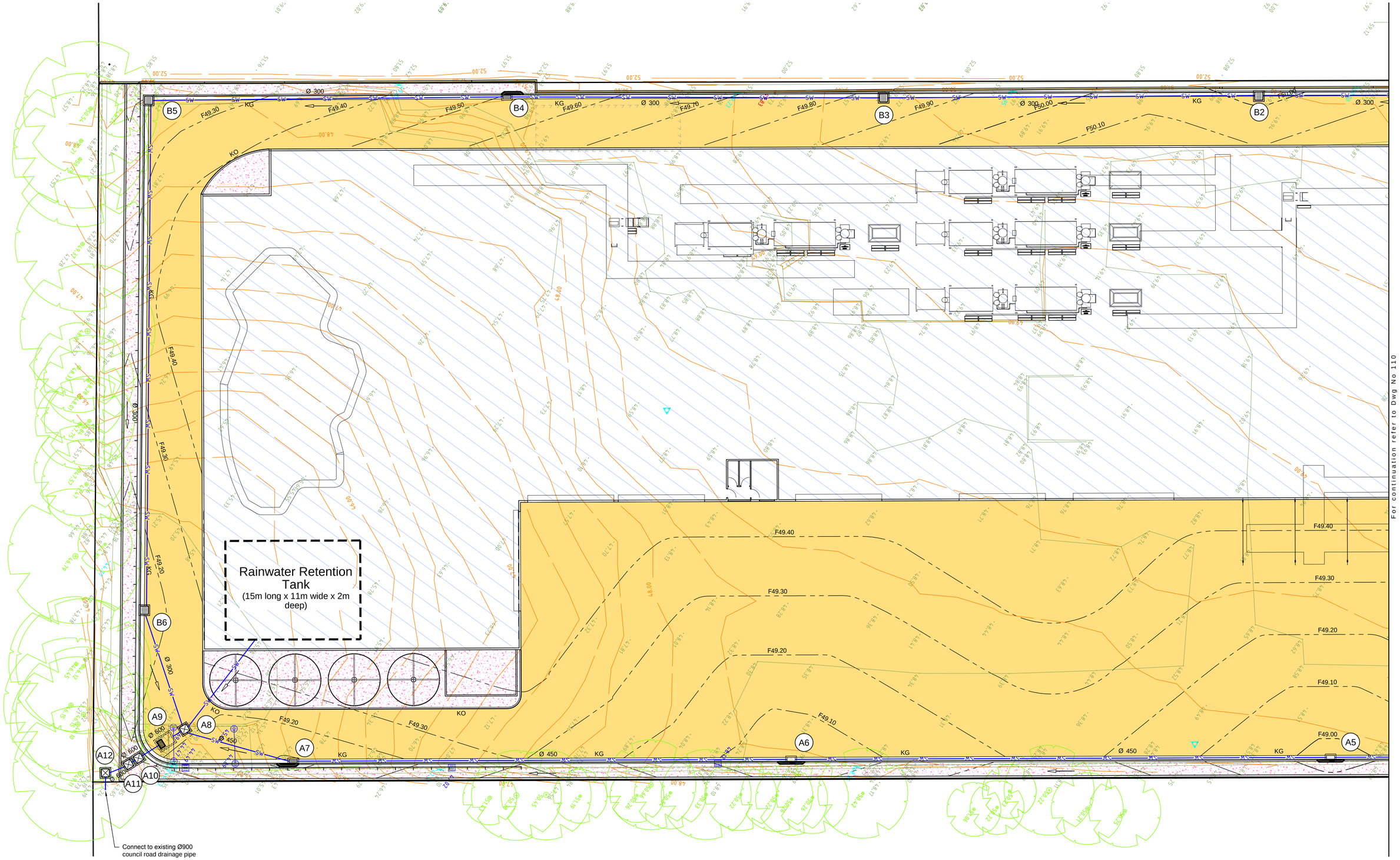

Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	28.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

1:200 0 10m 20m

SCALE AT A3 IS 1:400

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Project
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35 - 37 Frank Street, Wetherill Park

Title
Siteworks and Stormwater Drainage Plan - Sheet 1 of 2

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
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Drawing Number
MMD-364729-C-DR-DA01-109

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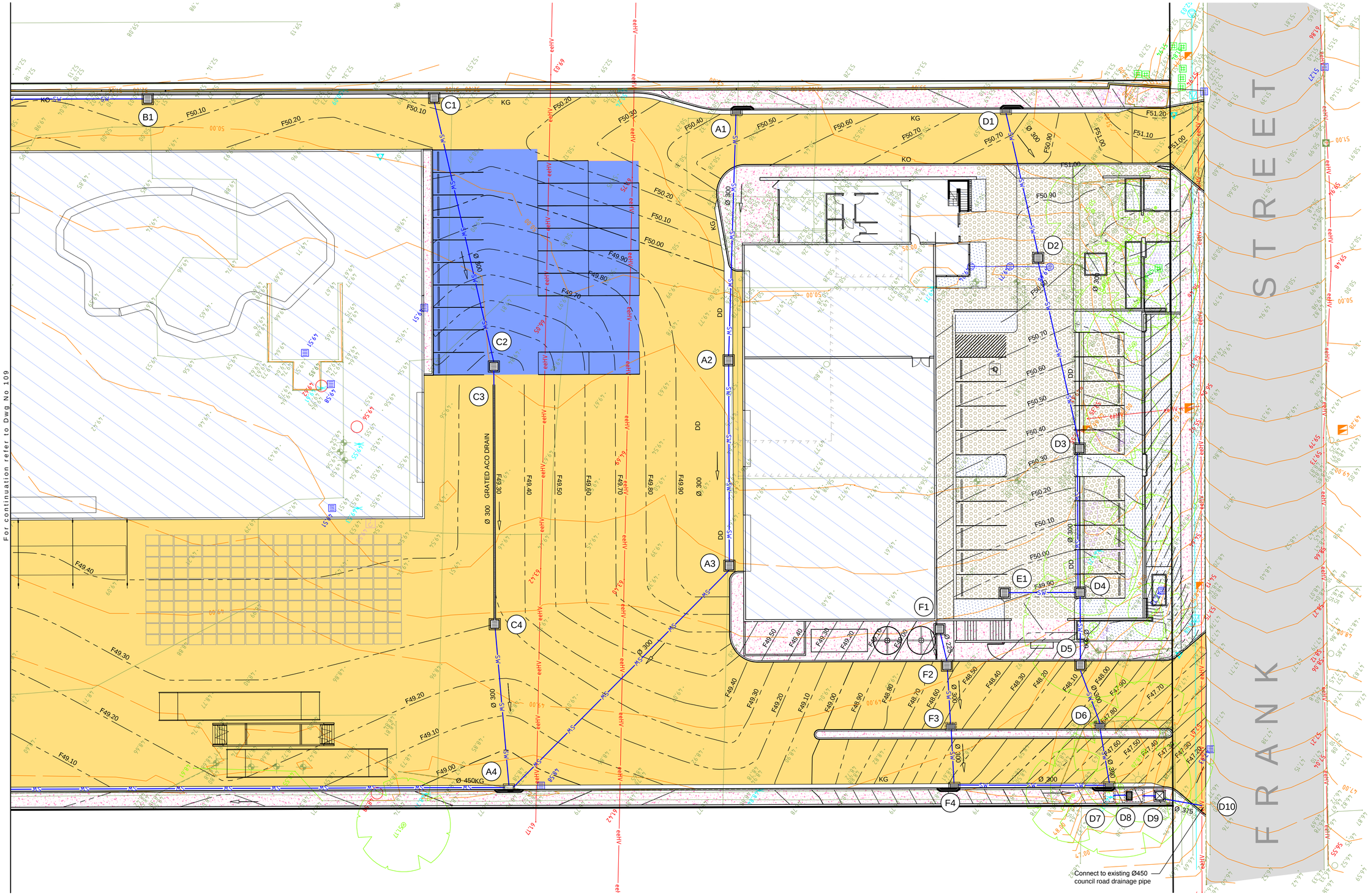

Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	28.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

1:200 0 10m 20m

SCALE AT A3 IS 1:400

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Title
Siteworks and Stormwater Drainage Plan
Plan - Sheet 2 of 2

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
1:200	APR	P3	STD

Drawing Number
MMD-364729-C-DR-DA01-110

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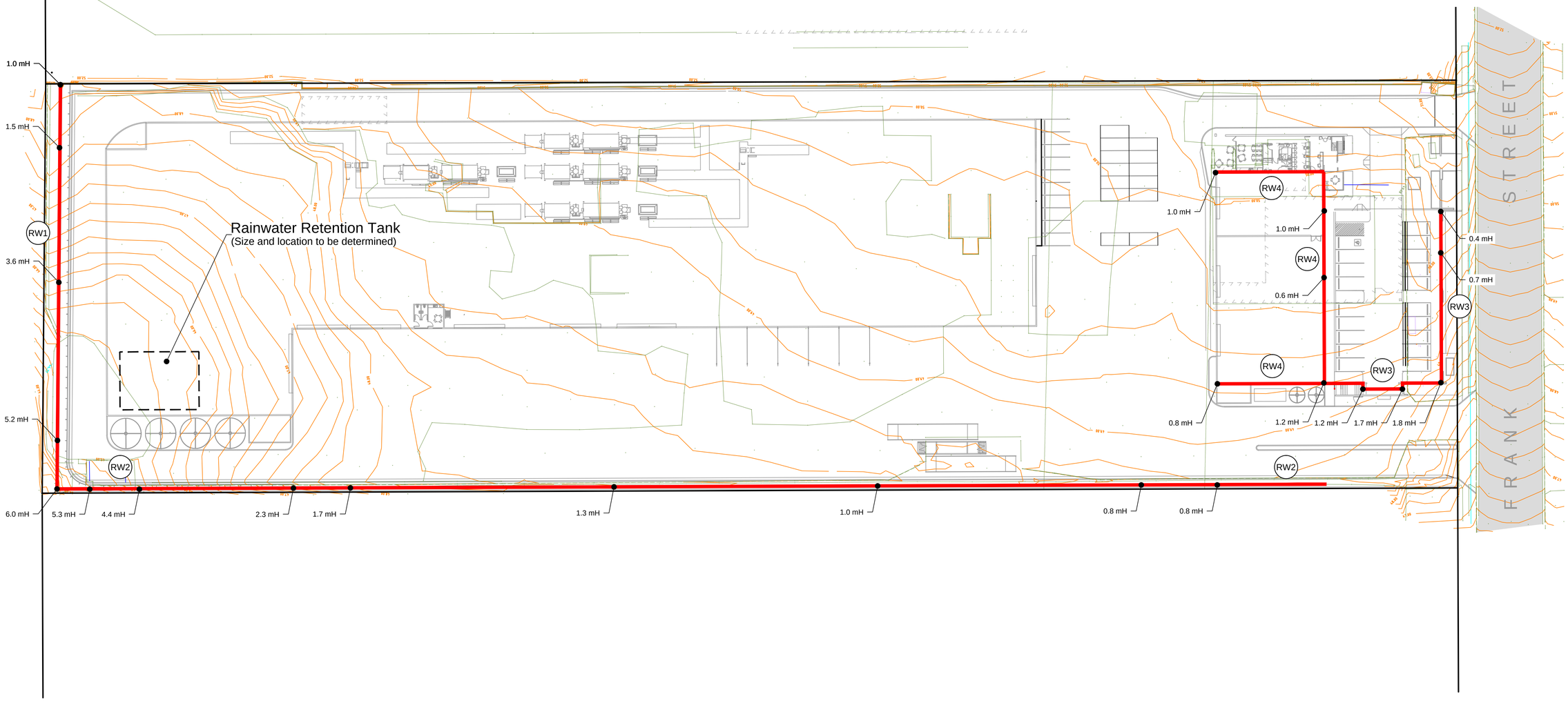
cha60503

Legend

- Proposed Retaining Wall
- RW — Proposed Retaining Wall Number
- 0.4 mH — Proposed height of retaining wall (FSL - ESL)

Note

Retaining Walls that are integral to the factory have not been shown on this drawing.



Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	28.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

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SCALE AT A3 IS 1:800

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Client: BELL Consultancy Team

Project: Resource Co
35 - 37 Frank Street, Wetherill Park

Title: Retaining Wall Plan

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
1:400	APR	P3	STD

Drawing Number: MMD-364729-C-DR-DA01-111

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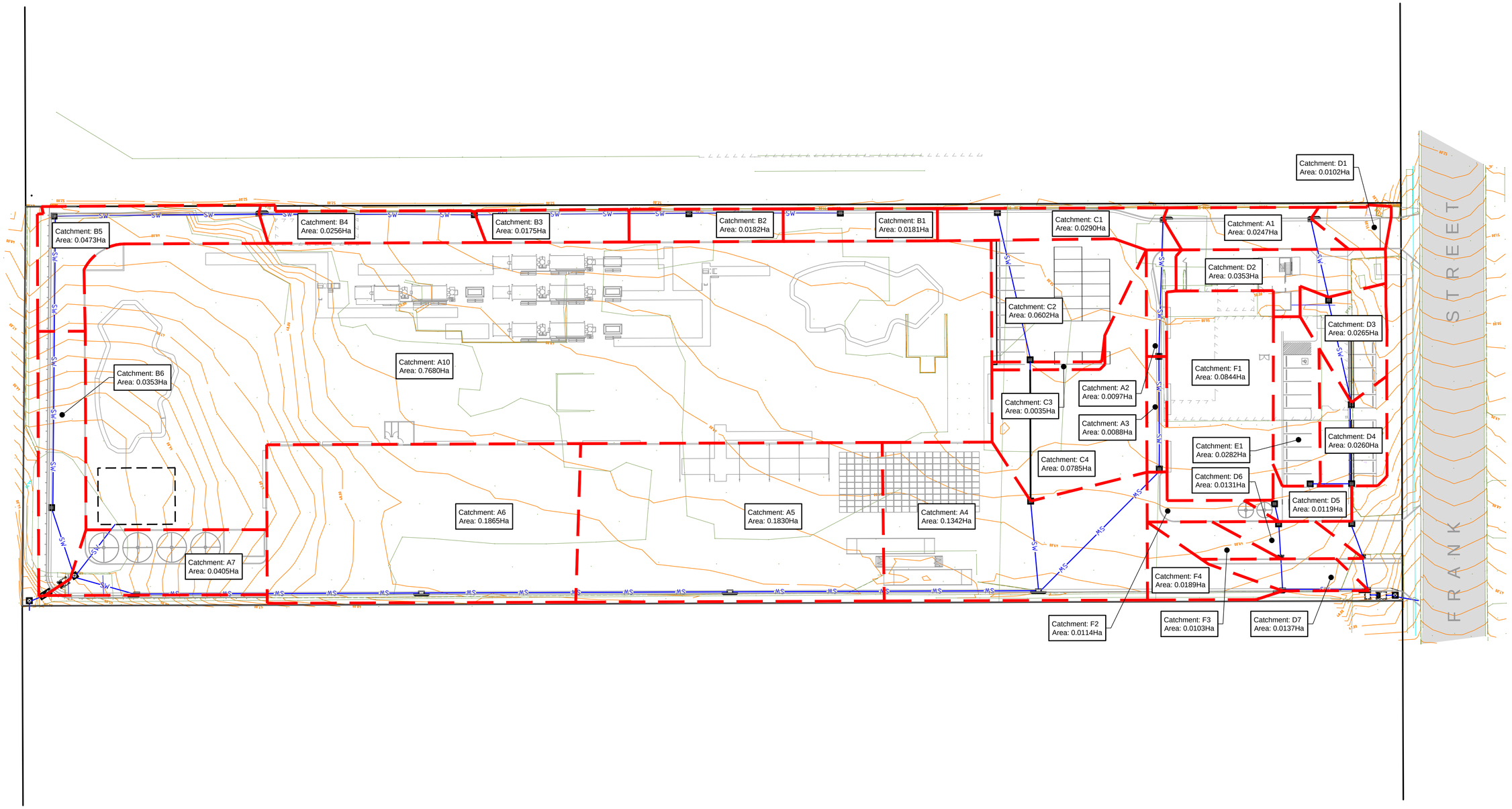

Preliminary - Not for Construction

Rev	Date	Drawn	Description	Ch'k'd	App'd
P3	28.01.16	DRC	Issued for Approval	RBD	JG
P2	22.01.16	DRC	Issued for Coordination	RBD	
P1	23.12.15	DRC	Issued for Client Review	RBD	

1:400 0 20m 40m

SCALE AT A3 IS 1:800

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Client
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Consultancy Team

Project
Resource Co
35 - 37 Frank Street, Wetherill Park

Title
Stormwater Drainage Catchment Plan

Designed	R. Deep	27.01.2016	Eng check	J.Gilligan	27.01.2016
Drawn	D.Chapman	27.01.2016	Coordination	R.Deep	27.01.2016
Dwg check	D.Chivers	27.01.2016	Approved	C.Avis	27.01.2016

Scale at A1	Status	Rev	Sec
1:400	APR	P3	STD

Drawing Number
MMD-364729-C-DR-DA01-112

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