

Environmental Impact Statement

APPENDIX

F

SITE WATER BALANCE AND STORMWATER MANAGEMENT REPORT

Site Water Balance and Stormwater Management Report

Waste Recycling Facility

59915106

Prepared for
Enviro Recycling
9 June 2016



Contact Information

Cardno Limited
Trading as Cardno (NSW/ACT) Pty Ltd
ABN 95 001 145 035

Level 9, The Forum
203 Pacific Highway
St Leonards NSW 2065

Telephone: +61 2 9496 7700
Facsimile: +61 2 9439 5170

www.cardno.com.au

Author(s):



Stephen Gribble
Senior Civil Engineer

Approved By:



Sean Porter
Senior Project Manager

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1 Introduction

Enviro Recycling Pty Ltd (Enviro Recycling) plans to increase their recycling operation at 51-57 Violet St Revesby from 30,000 tonnes per year to 250,000 tonnes per year. This requires assessment of an EIS by the Department of Planning and Environment and approval by the Minister for Planning. This report provides water balance as well as a consideration of stormwater management.

The Department of Planning and Environment, the Department of Primary Industries and Bankstown Council (now Canterbury Bankstown Council) has advised that the Secretary's Environmental Assessment Requirements (SEARs) includes the following:

- > Detailed site water balance, including identification of water requirements for the life of the project.
- > Proposed erosion and sediment controls during construction, of onsite detention systems, measures to treat, reuse or dispose of water.

This report has been prepared to address the above mentioned elements of the SEARs. A full list of the requirements relating to the water cycle and where they are addressed in this report if applicable are listed in Table 1-1.

Table 1-1 List of SEARs

Agency	Requirement	Location in this Report
Department of Environment and Planning	Soil and Water including	
	Identification of water and soil resources, drainage line and water courses	Stormwater lines described in Section 3.1 and Appendix A
	Detailed site water balance, including identification of water requirements for the life of the project.	Section 2
	Potential impacts on watercourses and groundwater.	Not included
	Proposed erosion and sediment controls during construction, of onsite detention systems, measures to treat, reuse or dispose of water	Section 3
	Consideration of any potential salinity, soil contamination, flooding and acid sulfate soils impacts of the proposal.	Salinity considered in Section 4.
Department of Primary Industries	1. Annual volumes of surface water and groundwater proposed to be taken by the activity (including through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan	Not applicable as water is not extracted from a river or groundwater.
	2. Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).	As above
	3. The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased	Section 2.2
	4. A detailed and consolidated site water balance	Section 2
	5. Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts	Not applicable as water is not extracted from a river or groundwater.
	6. Full technical details and data of all surface and groundwater modelling.	No ground water modelling undertaken. Rainwater tank modelling described in Section 2.3 & Appendix B.
	7. Proposed surface and groundwater monitoring activities and methodologies.	No monitoring is proposed
	8. Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts	Not applicable as water is not extracted from a river or groundwater
	9. Consideration of relevant policies and guidelines	Section 3.4
	10. A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).	Table 1-1
Blacktown Council	15. Water quality – The site is located within the Georges River floodplain and will require the consideration of the water quality targets in accordance with the Georges River Coastal Zone Management Plan.	Section 3.4

2 Water Balance

2.1 Water Usage

Water Usage on the site can be divided into two categories — amenities and dust suppression.

Amenities includes toilet flushing, hand basins and kitchenette. The annual volume required was estimated using plumbing guidelines and based on the number of employees.

Dust suppression is the principal water use on site, it uses considerably more water than amenities. Different means of dust suppression are used for different areas of the site, including:

- > Internally dust suppression is achieved using a fog machine that pressurizes water at 1000psi through nozzles to produce water droplet particles known as fog. This fog will encapsulate and suppress any dust particles that may be present in the atmosphere whilst falling to the ground. The existing machine provides a 30 second burst every 5 minutes at a flow rate of 18L/s.
- > Sprinklers are used in the areas of the recycled material storage bins. The volume of water used in this process has been estimated based on information by Enviro Recycling estimate that the sprinklers are used for about an hour a day.
- > Trafficable areas are sprayed with a water truck. Enviro Recycling has advised that they spray with a 10kL truck about twice a day using 30% to 50% of the tank contents each day.

The estimated water usage for the development is listed in Table 2-1. It needs to be kept in mind that the values are estimates rather than measurements.

It is assumed that as a result of the increases in both site area and truck movements, the dust suppression by water truck will double however other water consumption associated with internal dust suppression and amenities will remain unchanged.

Table 2-1 Estimated Water Use

Item	Annual Use (ML)		Sources
	Current	Proposed	
1. <u>Amenities</u> including toilets, showers, hand basins and kitchenette	0.35	0.35	Potable water
2. <u>Dust Suppression</u>			
2.1 Fog Machine (internal)	0.34	0.34	Potable water
2.2 Sprinkler (external)	0.34	0.68	Potable water
2.3 Water truck (external)	3.39	6.08	Rainwater tanks and potable water
Total Water Use	4.42	7.45	

2.2 Water Sources

The site currently has three 10kL rainwater tanks giving a total of volume 30kL. The tanks collect water from 2000m² of roof area. Figure 2-1 shows the water tanks and roof catchment draining to the tanks. Water collected by the tanks is used to fill the water truck for dust suppression of trafficable areas and it is proposed to continue this practice in the future. However, given the increase in trafficable area, the volume of water available from the roof catchment is insufficient to meet daily demands. This will require the rainwater tanks to be supplemented by potable water.

All other water uses are supplied by potable water. Sydney Water has advised that the site can be serviced by the existing 375mm diameter water main on the eastern side of Violet Street. However a connection larger than the standard domestic 20mm size will be needed. A copy of the Sydney Water feasibility letter is at Appendix C.

The fog machine requires potable water for two reasons. Firstly the fine nozzles require that the water used is free of suspended solids. Secondly, as it is sprayed from the roof trusses during working hours it needs to be free from bacterial contamination. Similarly the external sprinklers also need to comply with health guidelines.

Figure 2-1 Rainwater Tank and Roof Catchment



2.3 Water Balance Analysis

A long term daily water balance of the external dust suppression demand and the rainwater tanks was carried out using historical rainfall data. Table 2 summarises the rainfall data used.

Table 2-2 Rainfall Data Used for Water Balance

Rain gauge Number and Name	Period of Data Used
066054 Revesby (Paten St)	1/9/1941 to 31/7/2013
066137 Bankstown Airport AWS	1/8/2013 to 15/2/2016 (plus any gaps in 066054)

It was found that based on rainfall over the past 74 years of rainfall data, the rainwater tanks would meet about 14% of the estimated water truck demand for the expanded trafficable area for the pre-development site area, 26% of the estimated water truck demand is met by the rainwater tanks. The annual portion of demand met for the expanded each year varies with rainfall patterns ranging from just under 9% to 23%. The variation in annual demand met over the 74 year period is shown in Figure 2-2.

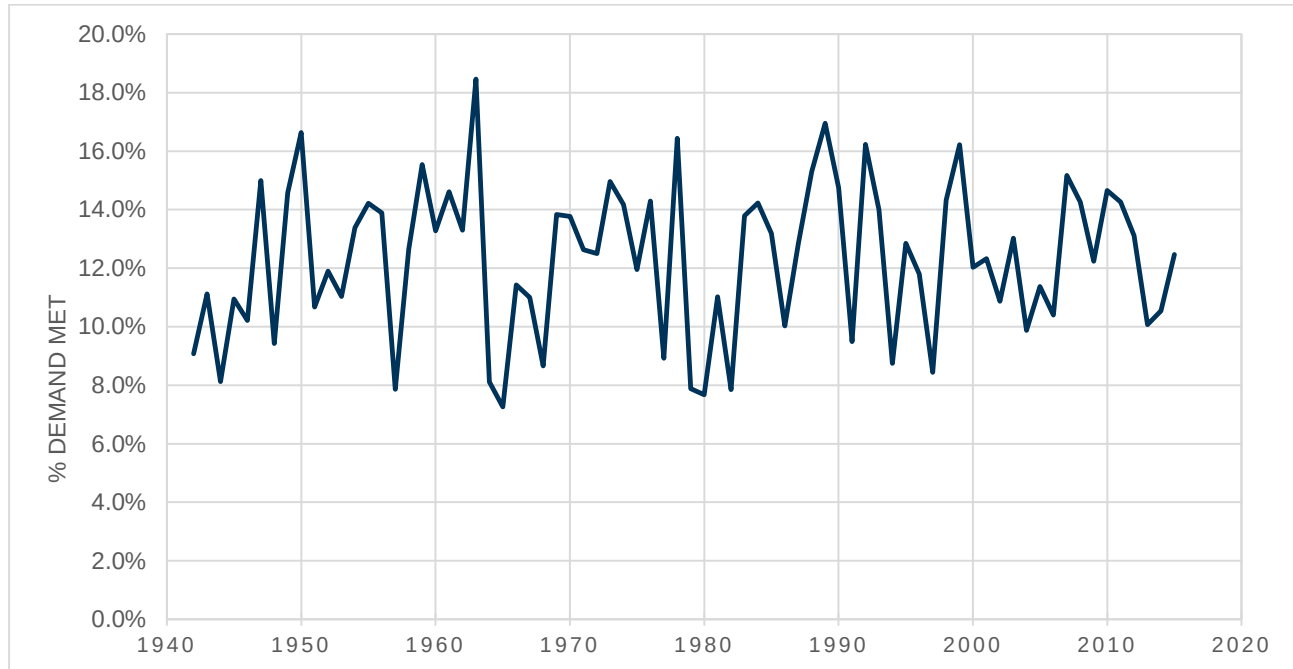
2.4 Alternate Sources of water

New alternative sources of water are not proposed by the Enviro Recycling as part of the development. The most feasible source of water would be the provision of additional rainwater tanks if additional buildings are added in the future.

The majority of water used at the site is applied by spraying during working hours. Therefore alternate water sources that contain moderate to high levels of bacteria including stormwater harvested from ground surfaces, grey water or recycled sewage may present an occupational health and safety risk to workers who

are likely to come into contact with the water. The use of these water sources would require a high level of treatment in order to comply with health guidelines.

Figure 2-2 Water Truck Demand Supplied by Rainwater Tanks



3 Stormwater Management

3.1 Description of existing Stormwater system

The site has 3 catchments each with its own connection to Council's stormwater network. Cardno drawing No. 59915106-CI-1500 shows the 3 catchments.

Catchment 1 is located at the northern portion of the site. Runoff is conveyed by dish drains to a gross pollutant trap (GPT) then discharged to the kerb and gutter via twin 100x200 RHS.

Catchment 2 includes most of the existing buildings. A piped storm water system collects runoff from roof and ground surface areas and conveys it to a 3 compartment oil and grit separator (also known as a "triple interceptor pit"). Runoff is then conveyed by 450mm diameter pipe that connects to the Council stormwater network on the western side of Violet Street.

Catchment 3 drains No.57 Violet Street. It also includes an undeveloped portion of No. 33-35 Daisy St which drains to a 500mm x 700mm open channel around the existing building at the rear of the site. Catchment 3 discharges via a 600mm diameter pipe which is assumed to cross under Violet Street to join Council's stormwater line. There are no known water quality measures on Catchment 3.

3.2 Proposed Works

The proposed changes to the stormwater drainage system includes the following:

- > A new stormwater line to drain the existing open channel at the southern end of the site. The channel currently contains stagnant water.
- > 400m² of Catchment 3 being diverted to Catchment No.2 due to the new staff carpark grading; and
- > A HumeCeptor hydrodynamic separator or equivalent is to be provided in catchment No.3.

Onsite Detention (OSD) is not proposed. Bankstown Council's *Engineering and Drainage Standards* states that "OSD will not be required where Development/Redevelopment is proposed which does not significantly increase the post development stormwater runoff from the site." As the proposed increase impervious area is only 2% of the site, it is considered that this will not significantly increase stormwater runoff.

3.3 Sediment & Erosion Control

Erosion and sediment control measures are to be implemented during construction to prevent sediment entering downstream water courses. An erosion and sediment control plan has been prepared in accordance with Landcom's *Managing Urban Stormwater, Soils and Construction* (i.e., the Blue Book). The plan is shown on Cardno drawings No's 59915106-CI-1000 and 59915106-CI-1150.

3.4 Water Quality

Table 2 lists the existing and proposed measures for the site. No water quality modeling has been undertaken as part of this study. Rather a qualitative assessment of the treatment measures has been included in Table 2.

Council has requested "consideration of the water quality targets in accordance with the Georges River Coastal Zone Management Plan (GRCZMP)." The GRCZMP includes the following recommendations that are relevant to the proposed development:

1. Councils apply the pollution reduction targets in Table 3-2 their Development Control Plans
2. Consideration must be given to the most appropriate devices and treatments trains for each situation and location.

Table 3-1 Existing and Proposed Water Quality Measures

	Catchment No.1	Catchment No.2	Catchment No.3
Catchment Area (ha)	0.53	0.60	0.84
Device	Vortcapture GPT	Oil & Grit Separator	Proposed Humesceptor or equivalent
<i>Treatment Effectiveness</i>			
Gross Pollutants	Very High	Medium	Moderate
Coarse sediment	High	Medium	Very High
Suspended Solids	Moderate	Low	High
Nutrients (TP, TN)	Low	Low	Moderate to Low

With regard to recommendation no.1 of GRCZMP above it is noted that:

- > The proposed Humesceptor is able to achieve the target for suspended solids and will make a significant contribution towards the nutrient reduction targets. However the existing water quality devices would need to be augmented to meet the targets.
- > the pollution reduction targets have not yet been included in Bankstown Council's DCP or Engineering Guidelines; and
- > the pollution reduction targets were not specified in recent DA approvals for the site.

In regard to the most appropriate devices and treatments trains for the situation and location, the following factors should be taken into consideration:

- > The pollutants generated by the recycling activities on the site are primarily sediment and fine particulates. Therefore it is recommended that water quality measures and or targets for the development should primarily focus on these sediment and suspended solids rather than nutrients which usually dictate the choice of treatment measures.
- > The treatment devices that fall short of the GRCZMP recommended targets are in areas of the site where no other works are proposed.

Table 3-2 GRCZMP pollution reduction targets

Stormwater Pollutant	% Reduction (Industrial Redevelopment)
Gross Pollutants	90%
Total Suspended Solids (TSS)	80%
Total Phosphorus (TP)	55%
Total Nitrogen (TN)	40%

4 Ground Water and Salinity

An investigation of ground water and salinity is outside the scope of this report.

Changes to the water table or soil salinity usually occur as the result of the following activities:

- > Major earthworks;
- > Extraction of groundwater;
- > Increased or concentrated infiltration of stormwater into the ground;

None of the above activities are proposed as part of the development. Therefore any impact on the groundwater conditions or salinity is expected to be negligible.

5 Conclusion

This report provides a description of water use and stormwater drainage for the Waste Recycling Facility at No.51-57 Violet Street Revesby.

The majority of water used on the site is for dust suppression. This includes an internal fogging system, a sprinkler system for the material storage bays and spraying of trafficable areas by a water truck. The majority of water used is potable water with rainwater tanks supplying some of the water used by the water truck. As the site area will be increased as part of the redevelopment, it is assumed that the trafficable area sprayed by the water truck will increase however other water consumption will remain unchanged.

As there are no additional buildings proposed as part of the proposed development, there is no opportunity to provide additional rain water tanks. The use of other alternative water sources is limited by health guidelines.

There are 3 separate stormwater catchments on the site each with a separate connection to the Council stormwater network in Violet Street. As only a small increase in impervious area is proposed the increase peak stormwater flows is negligible.

A HumeCeptor hydrodynamic separator is proposed to treat stormwater runoff from the catchment on No.57 Violet Street (Catchment no.3). This device is expected to meet the targets for reduction of sediment and suspended solids recommended in the Georges River Coastal Zone Management Plan. The remaining catchments (Catchments no.1 & no.2) already include stormwater treatment devices. No changes are proposed to the stormwater infrastructure in these catchments.

Waste Recycling Facility

APPENDIX

A

DRAWINGS

DATE PLOTTED: 6 June 2016 10:04 AM BY: NASIR AHMED



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

ENVIRO RECYCLING
WASTE RECYCLING FACILITY
NOS 51 & 57 VIOLET STREET, REVESBY



LOCALITY PLAN
NTS

SCHEDULE OF DRAWINGS

DRAWING No.	DESCRIPTION
CIVIL DRAWINGS	
59915106-CI-1000	COVER SHEET AND DRAWING LIST
59915106-CI-1001	GENERAL NOTES AND LEGENDS
59915106-CI-1050	GENERAL ARRANGEMENT PLAN
59915106-CI-1100	EROSION AND SEDIMENT CONTROL PLAN
59915106-CI-1150	EROSION AND SEDIMENT CONTROL DETAILS
59915106-CI-1300	SITE WORKS AND STORMWATER PLAN SHEET 1
59915106-CI-1301	SITE WORKS AND STORMWATER PLAN SHEET 2
59915106-CI-1500	CATCHMENT PLAN

SURVEY DRAWINGS	
59915106-500	DETAIL SURVEY CONTOURS AND RL'S

XREF's: X-59915106-CH-IMAGE: X-59915106-CH-CLIENT LOGO: X-59915106-CH-SITE BOUNDARY
CAD File: N:\Projects\59915106_Revesby Waste Facility\EAD\Drawings\59915106-CI-1000.dwg

Rev.	Date	Description	Des.	Verif.	Appd.
2	17/05/2016	ISSUED FOR APPROVAL	MV	RPL	SEG
1	28/04/2016	ISSUED FOR CLIENT REVIEW	MV	RPL	SEG



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Drawn NUA	Date 22/04/2016	Status	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Checked SEG	Date 22/04/2016					
Designed SEG	Date 18/04/2016					
Verified RPL	Date 27/04/2016					
Approved	Date					
SEG	28/04/2016	Datum A.H.D.	Date MAR-16	Scale N.T.S.	Size A1	Revision 2
		Drawing Number 59915106-CI-1000				

1. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH BANKSTOWN CITY COUNCIL STANDARDS.
2. BANKSTOWN CITY COUNCIL STANDARD DETAILS TO BE USED WHERE POSSIBLE.
3. UTILITY ADJUSTMENTS AT DEVELOPERS EXPENSE.
4. CONDUITS TO BE PLACED WHERE REQUIRED BY THE RELEVANT AUTHORITIES.
5. SUBSOIL DRAINAGE LINES TO BE PLACED AS INDICATED ON DRAWINGS.
6. A MINIMUM OF 3m OF SUBSOIL LINE SHALL BE LAID INTO UPSTREAM SIDE OF COUNCIL PITS

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY CARDNO, BEING REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA CONTACT CARDNO. THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM THE ORIGINAL SURVEY DOCUMENTS.

	GRAATED PIT
	INVERT OF PIT
	INVERT OF PIPE
	POWER POLE WITH LIGHT
	POWER POLE
	SEWER LAMP HOLE
	UNCLASSIFIED PIT
	GAS VALVE BOX
	BOLLARD
	WATER HYDRANT
	SPRINKLER HEAD
	WATER STOP VALVE
	COMMUNICATIONS PIT
	FINISHED FLOOR LEVEL
	STATION/BENCHMARK
	GATE
	TREE - TRUNK DIAMETER, SPREAD AND HEIGHT
	STORMWATER PIPE
	SPOT LEVEL

TELSTRA'S PLANS SHOW ONLY THE PRESENCE OF CABLES AND PLANT THEY ONLY SHOW THEIR POSITION RELATIVE TO ROAD BOUNDARIES, PROPERTY FENCES ETC. AT THE TIME OF INSTALLATION AND TELSTRA DOES NOT WARRANT OR HOLD OUT THAT SUCH PLANS ARE ACCURATE THEREAFTER DUE TO CHANGES THAT MAY OCCUR OVER TIME. DO NOT ASSUME DEPTH OR ALIGNMENT OF CABLES OR PLANT AS THESE VARY SIGNIFICANTLY. THE CONTRACTOR HAS A DUTY OF CARE WHEN EXCAVATING NEAR TELSTRA CABLES AND PLANT.

BEFORE USING ANY MACHINE OR VEHICLE, THE CONTRACTOR MUST FIRST BE AWARE OF ANY CABLES OR PLANT EXPOSED BY SOIL OR DIG PITING. TO IDENTIFY IT'S LOCATION TELSTRA WILL SEEK COMPENSATION FOR DAMAGES CAUSED TO IT'S PROPERTY AND LOSSES CAUSED TO TELSTRA AND IT'S CUSTOMERS.

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF EROSION AND SEDIMENTATION TO THE SATISFACTION OF COUNCIL, NSW OFFICE OF WATER, OFFICE OF ENVIRONMENT AND HERITAGE. THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE DRAWINGS SHALL ONLY BE USED AS A GUIDE BY THE CONTRACTOR, AND SHALL REPRESENT THE MINIMUM REQUIREMENT ONLY.
2. THE CONTRACTOR SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS DOCUMENTED OR AS OTHERWISE DIRECTED BY THE SUPERINTENDENT.
ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH A LOCAL AUTHORITY REQUIREMENTS
 - a. EPA REQUIREMENTS
 - c. NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBAN STORMWATER, SOILS & CONSTRUCTION", 4th EDITION, MARCH 2004.
3. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
4. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
5. CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

6. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:

- a. INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN REFER DETAIL
- b. CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER REFER DETAIL
- c. INSTALL SEDIMENT BASIN AS SHOWN ON PLAN (D) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN
- d. 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

7. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
8. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

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

10. 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.
11. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
12. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.
13. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
14. 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 DRIPE LINE
- b. ENSURING THAT NOTHING IS NAILED TO THEM
- c. PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIPE LINE EXCEPT UNDER THE FOLLOWING CONDITIONS:
 - (I) ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 15 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIPE LINE AND THE TRUNK, WHICHEVER IS THE GREATER
 - (II) A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH
 - (III) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM

2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO CARDNO
3. MAKE SMOOTH CONNECTION WITH EXISTING WORKS.
4. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
5. ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH SAND TO 300mm ABOVE PIPE, WHERE PIPE IS UNDER PAVEMENT'S BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL. COMPACTED IN 150mm LAYERS TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
6. ASPHALTIC CONCRETE SHALL CONFORM TO R.T.A. SPECIFICATION R116.
7. ALL BASECOURSE MATERIAL SHALL BE DGB 20 COMPLYING WITH R.T.A FORM 3051 (UNBOUND), R.T.A. COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m² OF BASECOURSE MATERIAL PLACED.

1. STORMWATER DESIGN CRITERIA:
AVERAGE RECURRENCE INTERVAL:
20 YEARS MINOR STORM EVENT,
100 YEARS MAJOR STORM EVENT.
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 AND INCLUDING 225 DIA SHALL BE DWV GRADE uPVC WITH SOLVENT WELDED JOINTS. U.N.O.
4. EQUIVALENT STRENGTH FRC PIPES MAY BE USED FOR PIPES UP TO 300 DIA.

7. PRECAST PITS MAY NOT BE USED.
8. ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
9. WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED UPVC SEWER GRADE PIPE IS TO BE USED.
10. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
11. GRATES AND COVERS SHALL CONFORM TO AS 3396.
12. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
13. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED DURING THIS PROCESS. ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.

1. ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 MPa U.N.O IN REINFORCED CONCRETE NOTES.
2. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON 175mm GRANULAR BASECOURSE COMPACTED TO MINIMUM 98% MODIFIED DRY DENSITY (AS 1289 5.2.1) U.N.O

3. EXPANSION JOINTS (E) J) TO BE FORMED FROM 10mm COMPRESSIBLE CUR CORNER 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 MAX 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.
4. WEAKENED PLANE JOINTS TO BE MIN 3mm wide AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.
5. BROOMED FINISH TO ALL RAMPED AND VEHICULAR CROSSINGS, ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED UNO
6. IN THE REPLACEMENT OF KERB AND GUTTER :-
EXISTING ROAD PAVEMENT IS TO BE SAW CUT 900mm UNO FROM THE LIP OF GUTTER UPON COMPLETION OF THE NEW KERB AND GUTTER. NEW BASECOURSE AND SURFACE TO BE LAID 900mm wide UNO.
7. ALL OTTEND DRAINAGE PIPES ARE TO BE BUILT INTO THE NEW KERB AND GUTTER WITH 100mm DIA HOLE.
8. EXISTING KERB AND GUTTER IS TO BE COMPLETELY REMOVED WHERE NEW KERB AND GUTTER IS SHOWN.

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION SERVICE INVESTIGATION AND SERVICE 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 (AROUND 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 FROM ANY CAUSE WHATSOEVER.

CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY.
CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS. CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH, PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

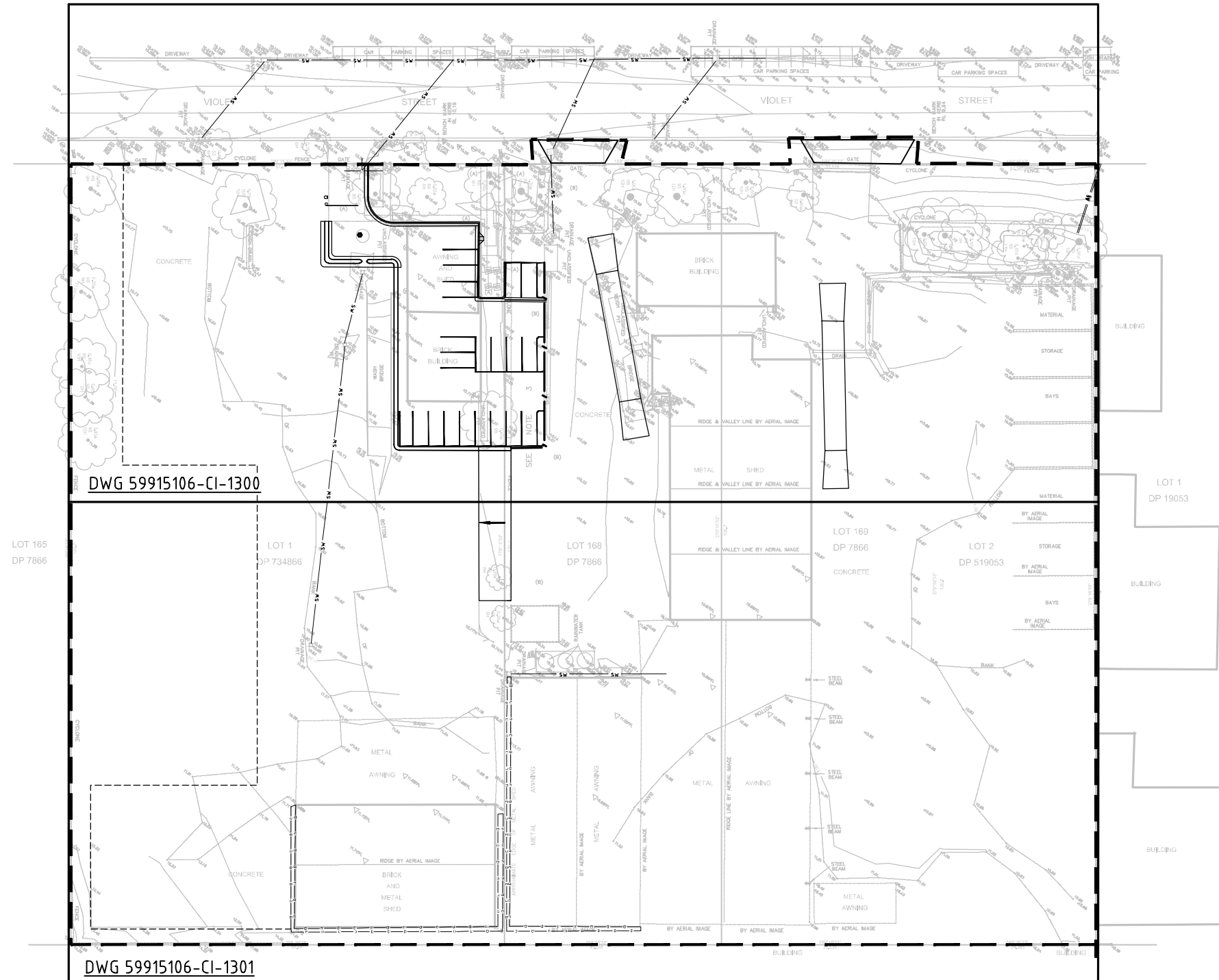
	CATCHMENT AREA 1
	CATCHMENT AREA 2
	CATCHMENT AREA 3
	BUILDING TO BE DEMOLISHED UNDER DA 332/2016
	CONCRETE PAVEMENT
	KERB AND GUTTER (K & G)
	DISH DRAIN (DD)
	KERB ONLY (KO)
	BOOM GATE ASSISTANCE POINT PILLAR
	BOOM GATE
	SANDBAG
	SEDIMENT TRAP
	SITE ACCESS POINT
	FINISH LEVEL
	PRAM RAMP
	WHEEL STOP
	STORMWATER PIPE
	UPSTREAM INVERT LEVEL GRADE DIAMETER DOWNSTREAM INVERT LEVEL
	STORMWATER PITS
	WORK LIMIT

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Drawn NUA	Date 22/04/2016	Client ENVIRO RECYCLING			
Checked SEG	Date 22/04/2016	Project WASTE RECYCLING FACILITY NOS 51 & 57 VIOLET STREET, REVESBY		Status PRELIMINARY	
Designed SEG	Date 18/04/2016			NOT TO BE USED FOR CONSTRUCTION PURPOSES	
Verified RPL	Date 27/04/2016			Datum A.H.D.	
Approved	Date	Title GENERAL NOTES AND LEGENDS		Scale MAR-16	Size N.T.S.
SEG	28/04/2016	Drawing Number 59915106-CI-1001			Revision 2

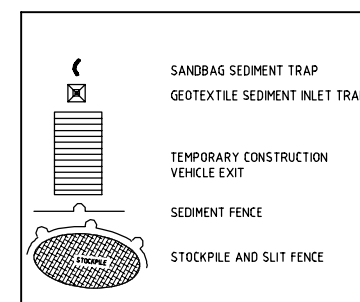
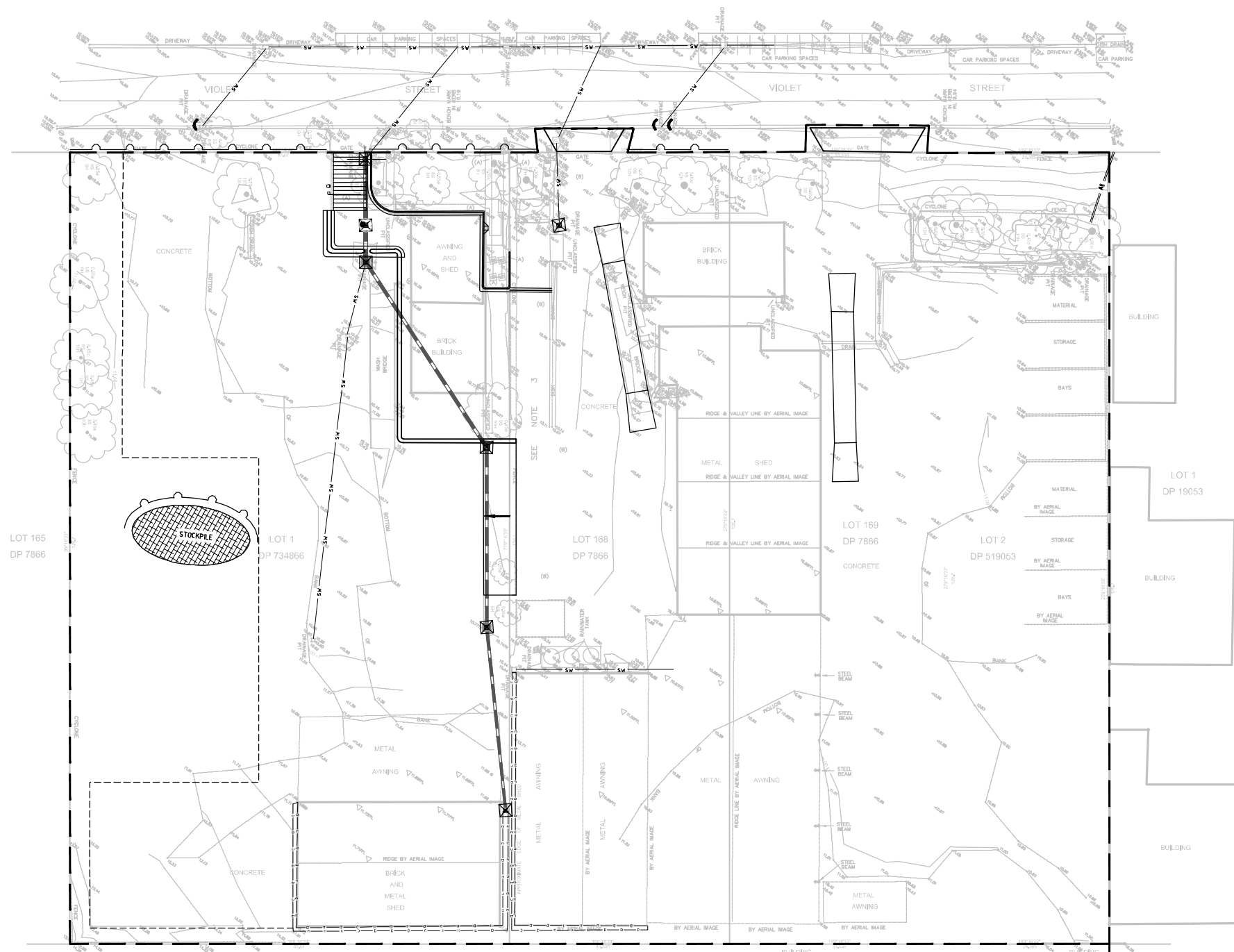
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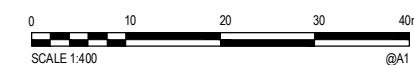


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Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn NUA	Date 22/04/2016	Client ENVIRO RECYCLING							
Checked SEG	Date 22/04/2016	Project				Status			
Designed SEG	Date 18/04/2016	WASTE RECYCLING FACILITY NOS 51 & 57 VIOLET STREET, REVESBY				PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Verified RPL	Date 27/04/2016	Title				Datum	Date	Scale	Size
Approved	Date	GENERAL ARRANGEMENT PLAN				A.H.D.	MAR-16	1:400	A1
SEG	28/04/2016					Drawing Number		Revision	
						59915106-CI-1050		2	



NOTE
REFER DRAWING 59915106-CI-1001 FOR ALL NOTES AND LEGENDS.

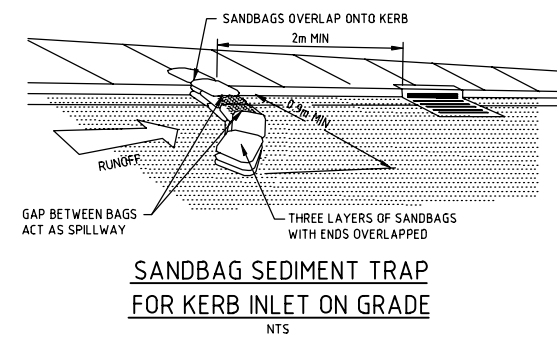
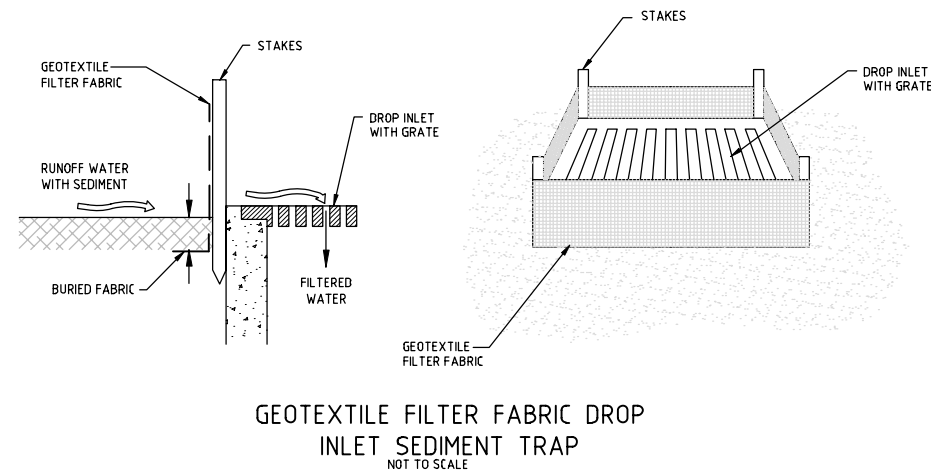
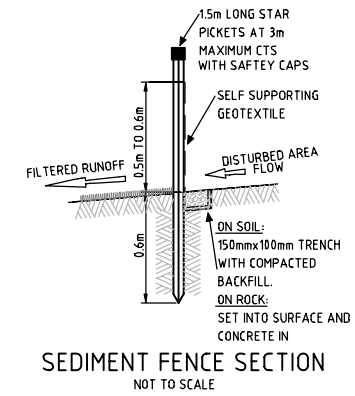
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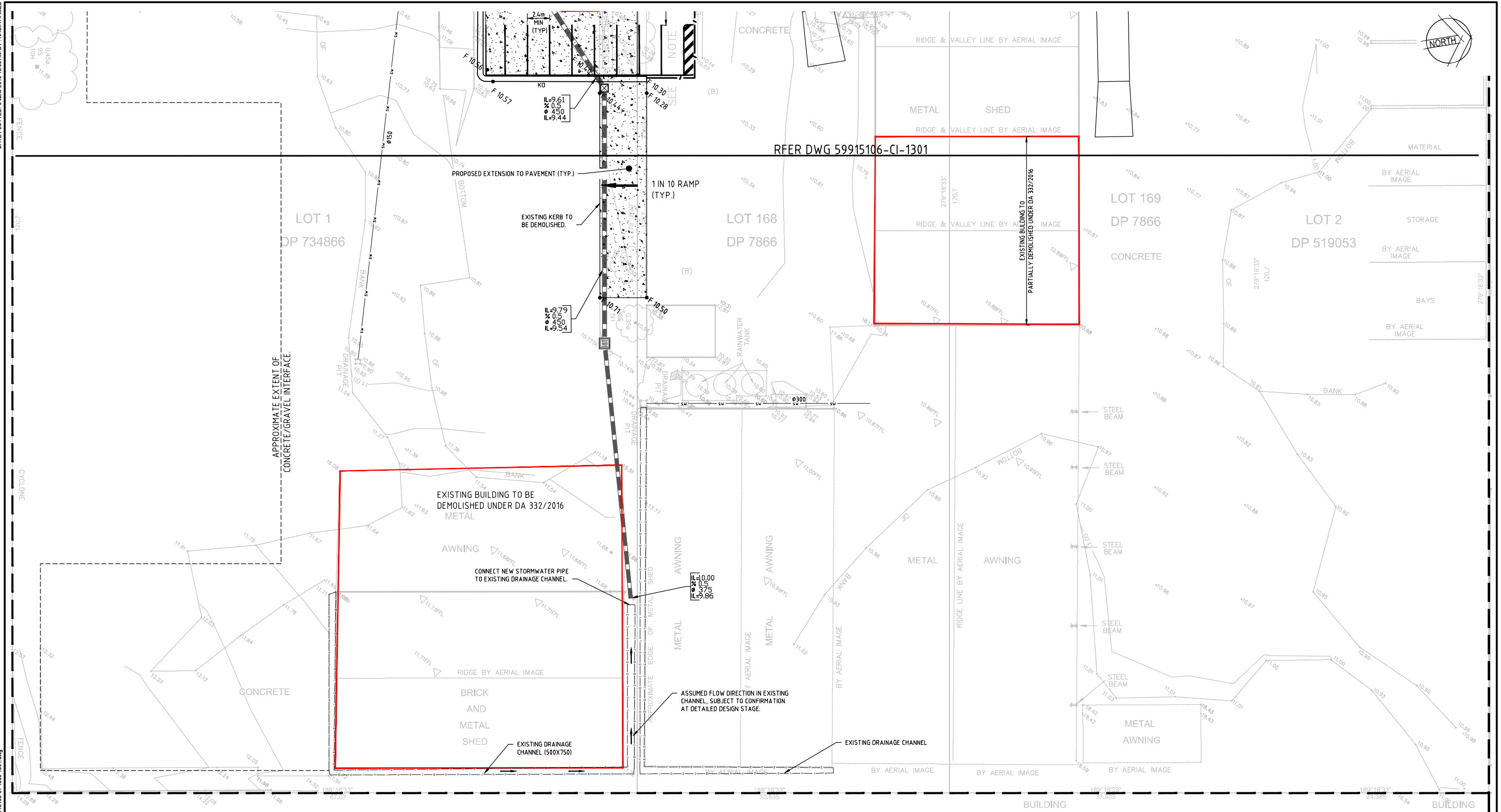
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Checked	Date 22/04/2016	Project	WASTE RECYCLING FACILITY NOS 51 & 57 VIOLET STREET, REVESBY		Status				
SEG	Date 18/04/2016	PRELIMINARY							
Designed	Date 18/04/2016	NOT TO BE USED FOR CONSTRUCTION PURPOSE							
Verified	Date 27/04/2016								
Approved	Date	Title	EROSION AND SEDIMENT CONTROL PLAN		Datum		Date	Scale	Size
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SEG	28/04/2016				Drawing Number			Revision	
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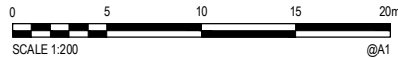
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Drawn NUA	Date 22/04/2016	Client ENVIRO RECYCLING			
Checked SEG	Date 22/04/2016	Project		Status	
Designed SEG	Date 18/04/2016	WASTE RECYCLING FACILITY NOS 51 & 57 VIOLET STREET, REVESBY		PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES	
Verified RPL	Date 27/04/2016	Title		Datum Date Scale Size	
Approved	Date	EROSION AND SEDIMENT CONTROL DETAILS		A.H.D. MAR-16 N.T.S. A1	
SEG	28/04/2016			Drawing Number Revision	
				59915106-CI-1150 2	



NOTE
REFER DRAWING 59915106-CI-1001 FOR ALL NOTES AND LEGENDS.



Rev.	Date	Description	Des.	Verif.	Appd.
2	17/05/2016	ISSUED FOR APPROVAL	MV	RPL	SEG
1	28/04/2016	ISSUED FOR CLIENT REVIEW	MV	RPL	SEG



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Checked	SEG	Date	22/04/2016
Designed	SEG	Date	18/04/2016
Verified	RPL	Date	27/04/2016
Approved		Date	
SEG		Date	28/04/2016

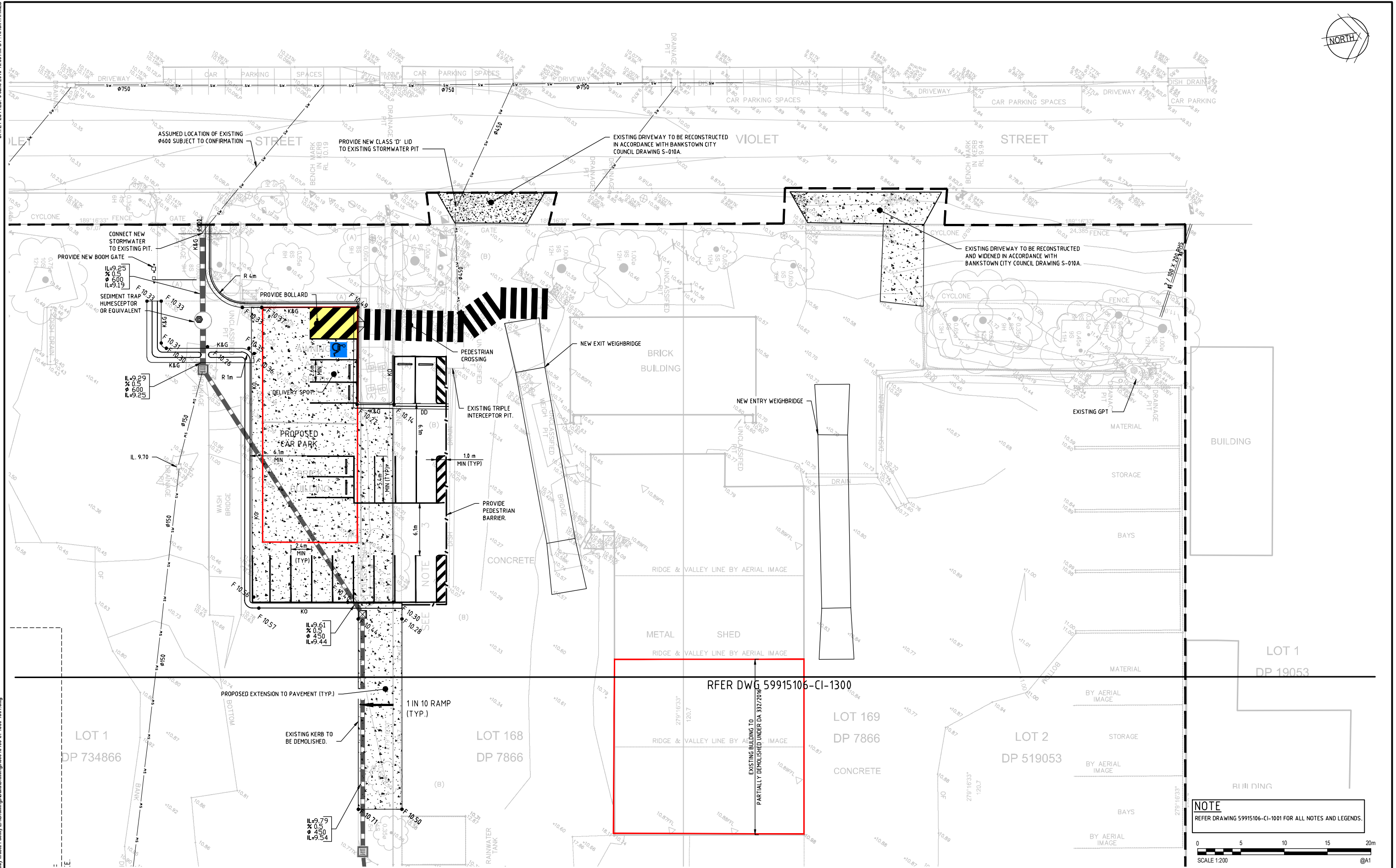
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Project: WASTE RECYCLING FACILITY
NOS 51 & 57 VIOLET STREET, REVESBY
Title: SITE WORKS AND STORMWATER PLAN
SHEET 1

Status	PRELIMINARY						
NOT TO BE USED FOR CONSTRUCTION PURPOSES							
Datum	Date		Scale		Size		
A.H.D.	MAR-16		1:200		A1		
Drawing Number						Revision	
59915106-CI-1300						2	

DATE PLOTTED: 6 June 2016 10:06 AM BY: NASIR AHMED



XREF: X-59915106-CI-CLIENT LOGO: X-59915106-CI-SURVEY: X-59915106-CI-SITE BOUNDARY: X-59915106-CI-CIVIL WORKS: X-59915106-CI-DRAINAGE
CAD File: N:\Projects\59915106_Revesby Waste Facility\Drawings\59915106-CI-1301-1301.dwg



NOTE
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Rev.	Date	Description	Des.	Verif.	Appd.
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1	28/04/2016	ISSUED FOR CLIENT REVIEW	MV	RPL	SEG

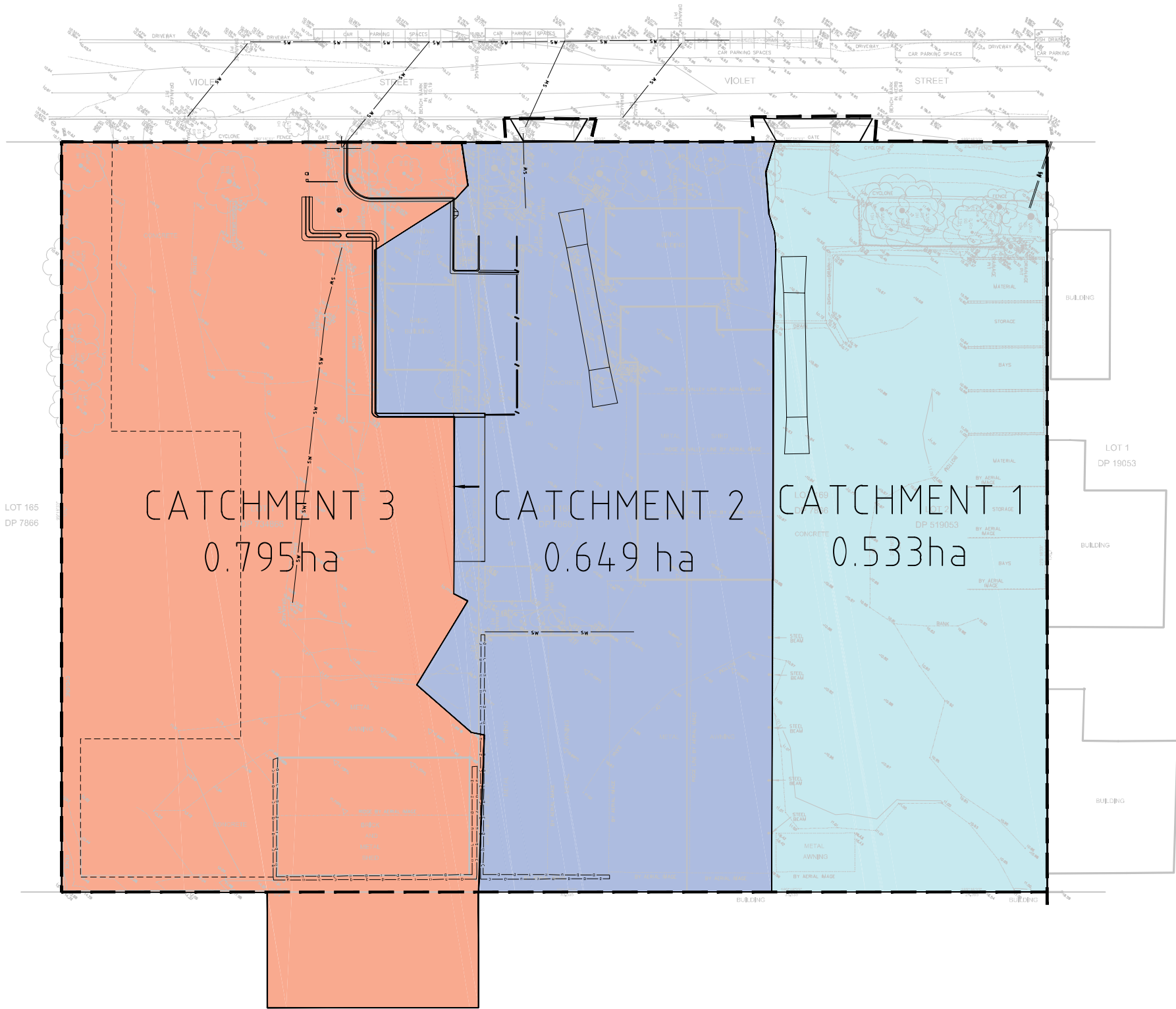
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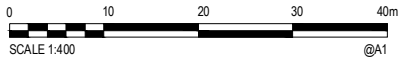
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Checked	SEG	Date	22/04/2016
Designed	SEG	Date	18/04/2016
Verified	RPL	Date	27/04/2016
Approved	SEG	Date	28/04/2016

Client: ENVIRO RECYCLING
Project: WASTE RECYCLING FACILITY
NOS 51 & 57 VIOLET STREET, REVESBY
Title: SITE WORKS AND STORMWATER PLAN
SHEET 2

Status	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES							
Datum	A.H.D.	Date	MAR-16	Scale	1:200	Size	A1	
Drawing Number	59915106-CI-1301						Revision	2



NOTE
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Rev.	Date	Description	Des.	Verif.	Appd.
2	17/05/2016	ISSUED FOR APPROVAL	MV	RPL	SEG
1	28/04/2016	ISSUED FOR CLIENT REVIEW	MV	RPL	SEG



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Checked	SEG	Date	22/04/2016
Designed	SEG	Date	18/04/2016
Verified	RPL	Date	27/04/2016
Approved		Date	
SEG		Date	28/04/2016

Client **ENVIRO RECYCLING**
Project
WASTE RECYCLING FACILITY
NOS 51 & 57 VIOLET STREET, REVESBY
Title
CATCHMENT PLAN

Status		PRELIMINARY			
NOT TO BE USED FOR CONSTRUCTION PURPOSES					
Datum	Date	Scale	Size		
A.H.D.	MAR-16	1:400	A1		
Drawing Number				Revision	
59915106-CI-1500				2	

Waste Recycling Facility

APPENDIX

B

EXTRACT FROM WATER BALANCE CALCULATIONS

Waste Recycling Facility, Violet Street Revesby

Rainwater Tank Water Balance Calculations

Rainfall Period: 1/0/1942 to 15/2/2016

Future Development Scenario

	Rainfall (mm)	Evaporation (mm)	Water Demand (KL)	Runoff from Roof (KL)	Demand Met (KL)	Storage in Tanks (KL)
Total			504800	138373	69554	
Average Daily			18.6	5.1	2.6	
Average Annual			6780	1858	934	
					13.8%	
1-Jan-16	0	5.81	20.0	0	0	0
2-Jan-16	0	5.81	20.0	0	0	0
3-Jan-16	0	5.81	20.0	0	0	0
4-Jan-16	14	5.81	0.0	27.4	0	27.4
5-Jan-16	39	5.81	0.0	77.4	0	30
6-Jan-16	31.6	5.81	0.0	62.6	0	30
7-Jan-16	19.8	5.81	0.0	39	0	30
8-Jan-16	0	5.81	20.0	0	20	10
9-Jan-16	0	5.81	20.0	0	10	0
10-Jan-16	0	5.81	20.0	0	0	0
11-Jan-16	0	5.81	20.0	0	0	0
12-Jan-16	0	5.81	20.0	0	0	0
13-Jan-16	0	5.81	20.0	0	0	0
14-Jan-16	0.2	5.81	20.0	0	0	0
15-Jan-16	45.6	5.81	0.0	90.6	0	30
16-Jan-16	2.2	5.81	20.0	3.8	20	13.8
17-Jan-16	0.2	5.81	20.0	0	13.8	0
18-Jan-16	0	5.81	20.0	0	0	0
19-Jan-16	0	5.81	20.0	0	0	0
20-Jan-16	0	5.81	20.0	0	0	0
21-Jan-16	0	5.81	20.0	0	0	0
22-Jan-16	29.6	5.81	0.0	58.6	0	30
23-Jan-16	15.6	5.81	0.0	30.6	0	30
24-Jan-16	0.8	5.81	20.0	1	20	11
25-Jan-16	0	5.81	20.0	0	11	0
26-Jan-16	3.8	5.81	20.0	7	7	0
27-Jan-16	0.6	5.81	20.0	0.6	0.6	0
28-Jan-16	0	5.81	20.0	0	0	0
29-Jan-16	0	5.81	20.0	0	0	0
30-Jan-16	33.6	5.81	0.0	66.6	0	30
31-Jan-16	25.4	5.81	0.0	50.2	0	30
1-Feb-16	0	4.82	20.0	0	20	10
2-Feb-16	1.2	4.82	20.0	1.8	11.8	0

Waste Recycling Facility

APPENDIX

C

SYDNEY WATER FEASIBILITY LETTER

Case Number: 152008v.1

15 March 2016

Bruce Fordham
c/- CARDNO (NSW/ACT) PTY LTD

FEASIBILITY LETTER

Developer: Bruce Fordham
Your reference: 59915106
Development: Lot Violet Street, Revesby
Development Description: Upgrade existing facility to process approximately 250,000 tonnes of construction and demolition (C&D) waste. To include processing facilities, stockpile/storage and handling areas, vehicular access and manoeuvring areas.
Your application date: 9 February 2016

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/site layout, after today, the requirements in this Letter could change when you submit your new application; and
- if you decide to do your development in stages then you must submit a new application (and pay another application fee) for each stage.

What You Must Do To Get A Section 73 Certificate In The Future.

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development.

1. **Obtain Development Consent from the consent authority for your development proposal.**
2. **Engage a Water Servicing Coordinator (Coordinator).**

You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

For a list of authorised Coordinators, either visit www.sydneywater.com.au > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92**.

The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. Developer Works Deed

After the Coordinator has submitted your new application, they will receive the Sydney Water Notice and Developer Works Deed. You and your accredited Developer Infrastructure Providers (Providers) will need to sign and lodge both copies of the Deed with your nominated Coordinator. After Sydney Water has signed the documents, one copy will be returned to the Coordinator.

The Deed sets out for this project:

- your responsibilities;
- Sydney Water's responsibilities; and
- the Provider's responsibilities.

You must do all the things that we ask you to do in that Deed. This is because your development does not have water and sewer services and you must construct and pay for the following works extensions under this Deed to provide these services.

Note: The Coordinator must be fully authorised by us for the whole time of the agreement.

4. Water and Sewer Works

4.1 Water

Your development must have a frontage to a water main that is the right size and can be used for connection.

Sydney Water has assessed your application and found that:

- The drinking water main available for connection is the 375mm main on the eastern side of Violet Street.

4.2 Sewer

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

Sydney Water has assessed your application and found that:

- The proposed development can connect to the existing 225mm wastewater main constructed under WO 46006.
- You must use Sydney Water's new **Technical Specifications for Leak Tight Sewer Systems** to plan, design and construct the sewer. This specification must be used in conjunction with (and have precedence over) the Sewerage Code of Australia, WSA02-2002 (Sydney Water Edition).

5. Ancillary Matters

5.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

5.3 Costs

Construction of these **future** works will require you to pay project management, survey, design and construction costs **directly to your suppliers**. Additional costs payable to Sydney Water may include:

- water main shutdown and disinfection;
- connection of new water mains to Sydney Water system(s);
- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation;
- creation or alteration of easements etc; and
- water usage charges where water has been supplied for building activity purposes prior to disinfection of a newly constructed water main.

Note: Payment for any Goods and Services (including Customer Redress) provided by Sydney Water will be required prior to the issue of the Section 73 Certificate or release of the Bank Guarantee or Cash Bond.

Your Coordinator can tell you about these costs.

OTHER THINGS YOU MAY NEED TO DO

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Approval of your building plans

Please note that the building plans must be approved when each lot is developed. This can be done at Sydney Water Tap inTM. Visit www.sydneywater.com.au > Plumbing, building & developing > Building > Sydney Water Tap inTM.

This is not a requirement for the Certificate but the approval is needed because the construction/building works may affect Sydney Water's assets (e.g. water, sewer and stormwater mains).

Where a Sydney Water stormwater channel, pipe or culvert is located within ten (10) metres of your development site it must be referred to Sydney Water for further assessment.

Your Coordinator can tell you about the approval process including:

- Possible requirements;
- Costs; and
- Timeframes.

Note: You must obtain our written approval before you do any work on Sydney Water's systems. Sydney Water will take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994*.

Disused Sewerage Service Sealing

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Soffit Requirements

Please be aware that floor levels must be able to meet Sydney Water's soffit requirements for property connection and drainage.

Requirements for Business Customers for Commercial and Industrial Property Developments

If this property is to be developed for Industrial or Commercial operations, it may need to meet the following requirements:

Trade Wastewater Requirements

If this development is going to generate trade wastewater, the property owner must submit an application requesting permission to discharge trade wastewater to Sydney Water's sewerage system. You must wait for approval of this permit before any business activities can commence.

The permit application should be emailed to Sydney Water's Business Customer Services at businesscustomers@sydneywater.com.au

It is illegal to discharge Trade Wastewater into the Sydney Water sewerage system without permission.

A **Boundary Trap** is required for all developments that discharge trade wastewater where arrestors and special units are installed for trade wastewater pre-treatment.

If the property development is for Industrial operations, the wastewater may discharge into a sewerage area that is subject to wastewater reuse. Find out from Business Customer Services if this is applicable to your development.

Backflow Prevention Requirements

Backflow is when there is unintentional flow of water in the wrong direction from a potentially polluted source into the drinking water supply.

All properties connected to Sydney Water's supply must install a testable **Backflow Prevention Containment Device** appropriate to the property's hazard rating. Property with a high or medium hazard rating must have the backflow prevention containment device tested annually. Properties identified as having a low hazard rating must install a non-testable device, as a minimum.

Separate hydrant and sprinkler fire services on non-residential properties, require the installation of a testable double check detector assembly. The device is to be located at the boundary of the property.

Before you install a backflow prevention device:

1. Get your hydraulic consultant or plumber to check the available water pressure versus the property's required pressure and flow requirements.
2. Conduct a site assessment to confirm the hazard rating of the property and its services. Contact PIAS at NSW Fair Trading on **1300 889 099**.

For installation you will need to engage a licensed plumber with backflow accreditation who can be found on the Sydney Water website:

<http://www.sydneywater.com.au/Plumbing/BackflowPrevention/>

Water Efficiency Recommendations

Water is our most precious resource and every customer can play a role in its conservation. By working together with Sydney Water, business customers are able to reduce their water consumption. This will help your business save money, improve productivity and protect the environment.

Some water efficiency measures that can be easily implemented in your business are:

- Install water efficiency fixtures to help increase your water efficiency, refer to WELS (Water Efficiency Labelling and Standards (WELS) Scheme, <http://www.waterrating.gov.au/>
- Consider installing rainwater tanks to capture rainwater runoff, and reusing it, where cost effective. Refer to <http://www.sydneywater.com.au/Water4Life/InYourBusiness/RWTCalculator.cfm>
- Install water-monitoring devices on your meter to identify water usage patterns and leaks.
- Develop a water efficiency plan for your business.

It is cheaper to install water efficiency appliances while you are developing than retrofitting them later.

Contingency Plan Recommendations

Under Sydney Water's [customer contract](#) Sydney Water aims to provide Business Customers with a continuous supply of clean water at a minimum pressure of 15meters head at the main tap. This is equivalent to 146.8kpa or 21.29psi to meet reasonable business usage needs.

Sometimes Sydney Water may need to interrupt, postpone or limit the supply of water services to your property for maintenance or other reasons. These interruptions can be planned or unplanned.

Water supply is critical to some businesses and Sydney Water will treat vulnerable customers, such as hospitals, as a high priority.

Have you thought about a **contingency plan** for your business? Your Business Customer Representative will help you to develop a plan that is tailored to your business and minimises productivity losses in the event of a water service disruption.

For further information please visit the Sydney Water website at: <http://www.sydneywater.com.au/OurSystemsandOperations/TradeWaste/> or contact Business Customer Services on **1300 985 227** or businesscustomers@sydneywater.com.au

Fire Fighting

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water's system to provide that flow in an emergency. Sydney Water's Operating Licence directs that Sydney Water's mains are only required to provide domestic supply at a minimum pressure of 15 m head.

A report supplying modelled pressures called the Statement of Available pressure can be purchased through Sydney Water Tap in™ and may be of some assistance when defining the fire fighting system. The Statement of Available pressure, may advise flow limits that relate to system capacity or diameter of the main and pressure limits according to pressure management initiatives. If mains are required for fire fighting purposes, the mains shall be arranged through the water main extension process and not the Section 73 process.

Large Water Service Connection

A water main will be available, once you have completed your drinking water main construction to provide your development with a domestic supply. The size of your development means that you will need a connection larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with Sydney Water Tap in™. You, or your hydraulic consultant, may need to supply the following:

- A plan of the hydraulic layout;
- A list of all the fixtures/fittings within the property;
- A copy of the fireflow pressure inquiry issued by Sydney Water;
- A pump application form (if a pump is required);
- All pump details (if a pump is required).

You will have to pay an application fee.

Sydney Water does not consider whether a water main is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Other fees and requirements

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements.

These include:

- plumbing and drainage inspection costs;
- the installation of backflow prevention devices;
- trade waste requirements;
- large water connections and
 - council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END