Newco Metal and Auto Recycling
Scrap Metal Processing Initiative
390 Incinerator Road
St. John's, NL

Environmental Assessment Registration

Pursuant to the Newfoundland & Labrador Environmental Protection Act (Part X)

Submitted by:
Newco Metal and Auto Recycling
50 Robin Hood Bay Road
St. John's, NL
A1A 5V3

March 26th, 2018

Table of Contents

1 Name of Undertaking: Scrap Metal Processing Initiative 3
2 Proponent 3
3 The Undertaking 3
3.1 Name of Undertaking 3
3.2 Purpose/Rationale/Need for Undertaking 4
3.2.1 Reduction of Carbon Footprint of Export Trucking 4
3.2.2 Reduction of Carbon Footprint of Transporting Waste 4
3.2.3 Maximizing Economic Benefits 4
3.2.4 Increasing Value of Scrap Material 4
3.2.5 Streamline the Business 5
3.3 Description of Undertaking 5
3.3.1 Geographical Location 5
3.3.2 Site Decision Selection Methodology 6
3.3.3 Neighboring Properties and Zones 7
3.3.4 Physical Features 9
3.3.5 Wendt M6090 Shredder 9
3.3.6 Wendt NFe (Non-Ferrous) Processing Plant 10
3.3.7 SEDA Easydrain Automotive De-Polluting Stations 12
3.3.8 Concrete Pad 13
3.4 Operation 14
3.4.1 De-Pollution 15
3.4.2 Wheel & Tire Removal 15
3.4.3 Inspection for Unshreddables or Explosives 15
3.4.4 Wendt M6090 Shredder 16
3.4.5 Wendt NFe (Non-Ferrous) Processing Plant 16
3.4.6 Disposal of ASR Waste 16
3.4.7 Operations Schedule 17
3.4.8 Air Pollution Sources & Prevention 17
3.4.9 Noise Prevention 19
3.5 Storage & Material Handling 21
3.5.1 Batteries 21
3.5.2 Mercury Containing Switches/Lead Weights 21
3.5.3 Fluids 22
3.5.4 Tires 22
3.5.5 Ferrous Shred 22

3.5.6 Non-Ferrous Metals 22
3.5.7 ASR Waste 23
3.5.8 Inspections 23
3.6 Occupations 23
3.7 Application for Property Extension 24
3.8 Groundwater Monitoring Program 25
4 Requirements of Other Jurisdictions 25
5 Approval of the Undertaking 26
6 Schedule 27
7 Funding 27
8 References 27
9 Regulatory Requirements 27
9.1 City of St. John's 27
9.2 Water Resources 28
9.3 Environment and Climate Change Canada 28
10 Signature 28
Appendix A - Geographic Location 0
Appendix B - Site Survey 1
Appendix C - Site Plan 2
Appendix D - Letter of Acceptance ASR Waste Disposal 3
Appendix E - Noise Level Diagram 4
Appendix F - Project Schedule 5
Appendix G – Storm Water Management System Details 6

1 Name of Undertaking: Scrap Metal Processing Initiative

2 Proponent

Name of Proponent: Newco Metal and Auto Recycling Ltd.

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3 The Undertaking

Newco Metal and Auto Recycling Ltd. (Newco) proposes to upgrade its metal recycling facility located on Incinerator Road in St. John's, NL. The upgrades will allow Newco to perform secondary processing of recycled metals to significantly reduce the physical volumes of material it handles while increasing the resale value of its recovered material. Upgrades will include construction of a large concrete pad with associated drainage control, placement of a self-contained automobile de-pollution unit, installation of a metal shredding unit and a non-ferrous processing plant.

3.1 Name of Undertaking

Newco currently owns and operates a metal and auto recycling facility on Robin Hood Bay Road in the City of St. John's, NL. The facility operates under a Certificate of Approval (WMS-09-09-009) issued by the Department of Municipal Affairs and Environment. At present, Newco stores derelict vehicles and metals on their site on Robin Hood Bay Road until such time when they can be crushed and put aboard flat deck trailers and transported out of the province.

This method has resulted in storage challenges at the site to the point where storage space is becoming limited and will eventually be depleted. Installing the upgrades at the Incinerator Road site will enable vehicles and metals to be fully processed at a faster pace than the Robin Hood Bay Road site allows, thus alleviating the storage problems at Robin Hood Bay. Currently, scrap metals are bulk shipped out of province with only limited processing; essentially items are crushed or compacted prior to shipping. The equipment used to achieve this requires manual operation and scrap metals are being received at a rate faster than the facility can process them. The metal shredder which Newco plans to install features a more automated scrap metal handling process and is capable of processing significantly higher volumes of

material in a shorter time period. The shredder segregates metal types and separates unusable materials from the product. The incorporation of the metal shredder into Newco's operations will allow for efficient and thorough scrap metal processing. It will allow Newco to clear through the backlog of recycled metals that is currently accumulating and it will allow Newco to manage recycled metal material from its various facilities located throughout the province. Once operational, the metal shredder, permanently installed at the location on Incinerator Road at the outskirts of St. John's, will significantly reduce the vehicular traffic into the Robin Hood Bay Road site and eliminate the large stockpiles of recycled metal currently accumulating there. The Robin Hood Bay Road site will strictly be a receiving yard for customers to drop off material, and Newco will have trucks dedicated to transporting material from the Robin Hood Bay site to the Incinerator Road site, where all material will be processed.

3.2 Purpose/Rationale/Need for Undertaking

Shipping whole vehicles out of the province has not maximized the environmental and economic benefits of secondary processing to the local area and province. Enabling vehicles to be shredded at the Incinerator Road site will result in a number of benefits.

3.2.1 Reduction of Carbon Footprint of Export Trucking

Newco transports over 1400 trailers of crushed cars or baled white goods to Halifax and Montreal each year from various places in the province, transporting roughly equal number of loads to each (1441 loads in 2017). Newco ships approximately 800 of these loads via vessel (808 in 2017). The remaining 600 loads are transported via truck, in most all cases to Montreal, a 2000 km haul, depending on departure location in the province. Using the EPA's "Emission Factors for Greenhouse Gas Inventories" tables (EPA, 2015), diesel consuming heavy vehicles produce roughly 2.701 kg of CO_2 per litre, (10.21 kg of CO_2 per gallon). An NRC study concluded that benchmark fuel consumption performance for trucks in Canada is 40 L/ 100 km, which can be used for the estimation of our carbon footprint (NRCAN, 2016). Therefore, trucking produces over 1,296,000 kg of CO_2 every year. Steel shred, which makes up about 73% of the material processed with the new processing facility, will now be shipped instead of trucked, which produces significantly less CO_2 per/tonne. Using the EPA's "Emission Factors for Greenhouse Gas Inventories" tables (EPA, 2015), the CO_2 factor for a Heavy-Duty Truck is 0.146 kg/ton-mile, vs 0.059 kg/ton-mile for a waterborne Craft, a 60% reduction.

3.2.2 Reduction of Carbon Footprint of Transporting Waste

Waste will be disposal at local landfill instead of trucked with crushed/baled goods. Waste makes up 19% of material currently transported outside the province as it is not separated from the scrap material. The new processing facility will be able to separate the waste from the material, allowing Newco to dispose locally, meaning significantly less environmental impacts from transportation, whether by vessel or truck. Given the local disposal of waste (19%) and shipping steel shred via vessel (73%), Newco estimates a 92% reduction of export trucking when operating the shredder.

3.2.3 Maximizing Economic Benefits

The Project will maximize local regional economic benefits by having secondary processing occur within the province. The operation as a whole will add 20-25 sustainable jobs and provide an in-province market for the other smaller operators to sell their scrap metal.

3.2.4 Increasing Value of Scrap Material

Newco will have the ability to create a valuable product that can be sold to international markets.

3.2.5 Streamline the Business

The Project will enable Newco to operate the business in a more streamlined manner with less transportation complexities by processing in one location.

3.3 Description of Undertaking

3.3.1 Geographical Location

The proposed site, approximately 4.5 hectares, is located on Incinerator Road which is off the Foxtrap access road north of the Trans Canada Highway. Formerly, the site was developed as a quarry, followed by a metal scrap facility which Newco then acquired in 2016. It is under the jurisdiction of the City of St. John's. Figure 1: Topographic Map - 390 Incinerator Road, shows the location of the proposed site (taken from 1:50,000 scale NTS Map Sheet 1N/7) and a Google Earth screen capture shows the Project site and surrounding properties (see Figure 2: Google Earth Site Image). The site is over 350m from Nut Brook.

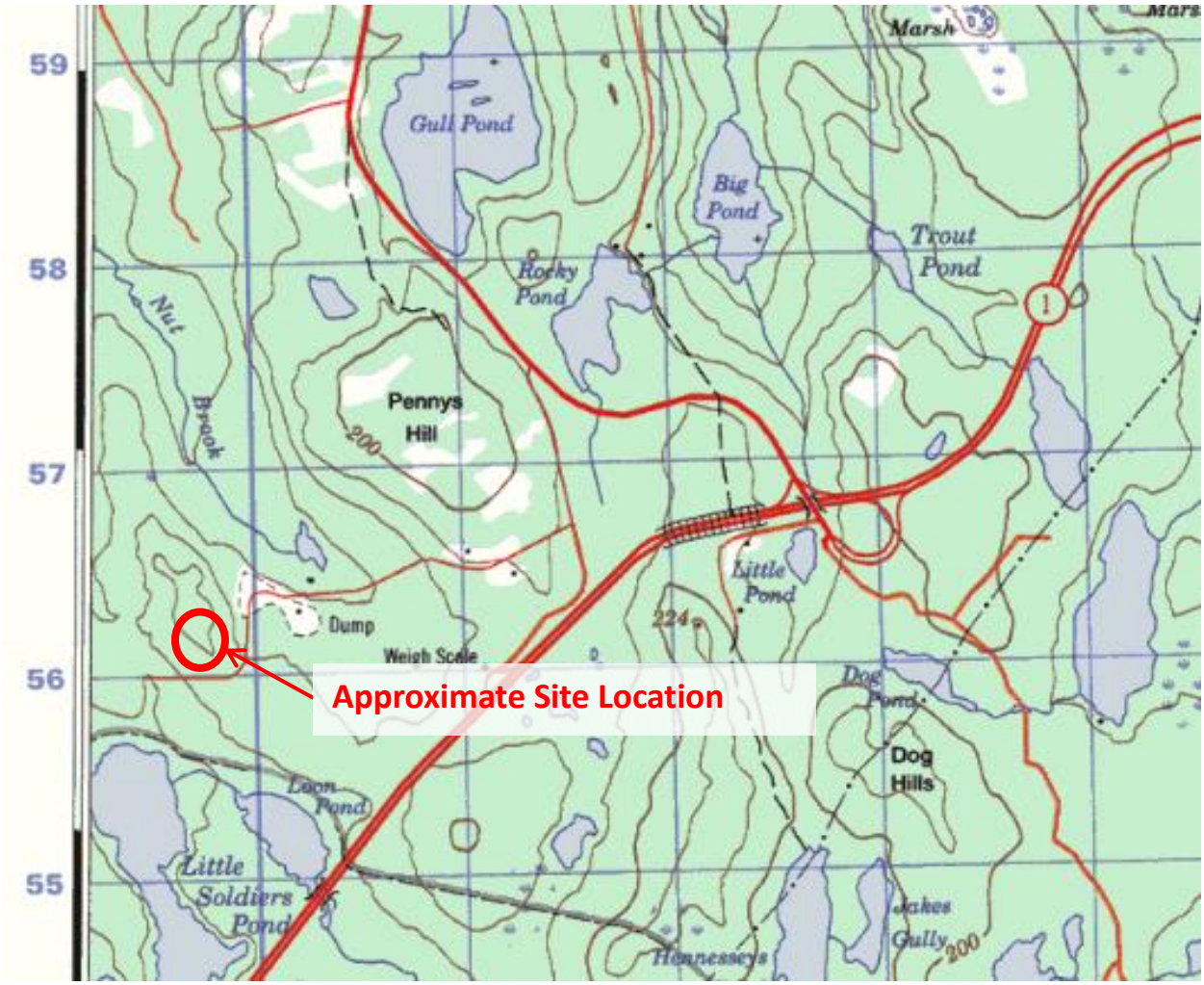


Figure 1: Topographic Map - 390 Incinerator Road

3.3.2 Site Decision Selection Methodology

In planning for the installation, Newco has analyzed a number of possible locations. The criteria that Newco used to rank the suitability of the location is as follows:

a. Proximity to TCH – It is important to be near the highway as most material to be processed will need to be transported to site by heavy equipment from across the province.
b. Proximity to Robin Hood Bay Waste Management Facility – The process will produce an amount of waste that will need to be disposed of at the waste management facility, the nearer the installation is, the less trucking of waste that will be required.
c. Proximity to Residential/Agricultural developments – Given the nature of the operation, it is desirable to place in a location that has space between any housing or farming developments.
d. Reduction in Trucking on Outer Ring – If the installation can be located west of the city of St. Johns/Mount Pearl on the TCH, Newco can significantly reduce the amount of trucking on the Outer Ring Road.
e. Proximity to Argentia – ferrous shred will be exported from Argentia and will need to be transported to this location from the installation.
f. Proximity to St. Johns Services – Services such as mechanical/electrical repair, waste fluid removal, and Newco management are important for the operation.
g. Weather – Because most of the plant will be outdoors, good weather conditions will have a positive impact on the plant efficiency.
h. Previously EA Approved Site – Consideration whether the site was previously released from further environmental assessment for use as scrap metal yard and shredder operation.
i. Industrial Zoning – Consideration whether the site is zoned for industrial use.

Table 1: Site Selection Matrix presents the results from the decision-making process. Criteria are ranked by weight, and locations are rated on a scale from 1-5, with higher numbers representing higher suitability.

Criteria	50 Robin Hood Bay Road	Argentia, NL	390 Incinerator Road	Off-Avalon Location
Proximity to TCH (Criteria Weight: 10%)	5	3	5	5
Proximity to Robinhood Bay Waste Mgmt. (Criteria Weight: 15%)	5	3	4	1
Proximity to Residential/Agricultural Developments (Criteria Weight: 25%)	1	5	5	5
Reduction in Outer Ring Rd. Trucking (Criteria Weight: 7.5%)	1	5	5	5
Proximity to Argentia (Criteria Weight: 7.5%)	3	5	3	1
Proximity to Services in St. John's (Criteria Weight: 10%)	5	2	5	1
Weather (Criteria Weight: 10%)	4	2	4	4
Previously EA Approved Site (Criteria Weight: 10%)	1	1	5	1
Industrial Zoning (Criteria Weight: 5%)	1	5	5	1
Totals:	**2.85**	**3.5**	**4.6**	**3.0**

Table 1: Site Selection Matrix

The 390 Incinerator Road location has a clear advantage over the other sites, as indicated. The site will significantly decrease traffic in the St. John's area as it is on the outskirts, west of the city. The site also is excellent in terms of its location relative to residential and agricultural zones, and overall placed strategically between the Robin Hood Bay Waste Management Facility and Argentia, lowering the carbon footprint of trucks transporting material. The site has also been previously approved for the operation of a shredder, which had a significant impact on Newco's decision to operate there.

3.3.3 Neighboring Properties and Zones

As shown in Figure 2: Google Earth Site Image, the Project site (A) is bound to the south and east by Incinerator Road. A quarry is situated to the southeast (B). The Marine Institute Offshore Safety and Survival Centre (C) is located to the west and to the east is Newalta's Waste Transfer Facility (D). The area north of the site is currently undeveloped. The immediate surroundings and land that border the property line is crown land.

Figure 2: Google Earth Site Image

The nearest residential development is 3.75 km (3750 m) from where the shredder itself will be operating, as shown in Figure 3: Proximity to Residential Area. Appendix A - Geographic Location
, further presents proximities to neighboring locations.

Figure 3: Proximity to Residential Area

The nearest agricultural area relative to the site is located 1.80 km to the North-West, as outlined in Figure 4: Proximity to Agricultural Zoning, from the city of St. John's map center.

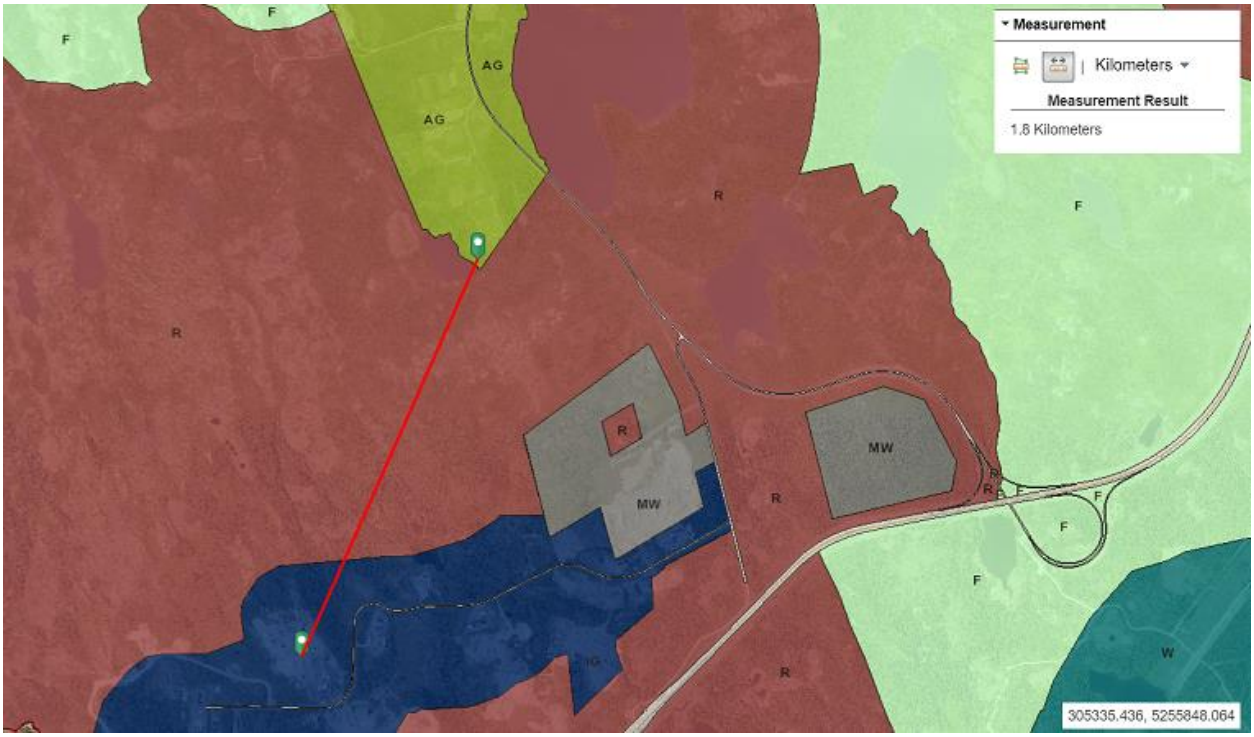


Figure 4: Proximity to Agricultural Zoning

3.3.4 Physical Features

The current site, as indicated in Appendix B - Site Survey
, outlines the current infrastructure on site. This includes but is not limited to a 70' x 140' building, as well as scales and a fence along with mobile equipment for material handling on site. The site is relatively level, with little vegetation from the quarry operation.

The primary components of the development will include the installation of the following:

a. Wendt M6090 Metal Shredder
b. Wendt Non-Ferrous (NFe) ASR Processing Plant
c. Concrete pad, with associated storm water management systems
d. 2 ea. SEDA Automotive De-polluting stations

3.3.5 Wendt M6090 Shredder

The Wendt M6090 Shredder (Figure 5: Wendt M6090 Shredder) will be the key component of the material processing operation. This machine will shred scrap into a size (roughly 5" diameter, "fist-sized" and smaller) that can be separated and processed through the entirety of the plant. The shredder will have the ability to process 60 metric tonnes of material per hour.

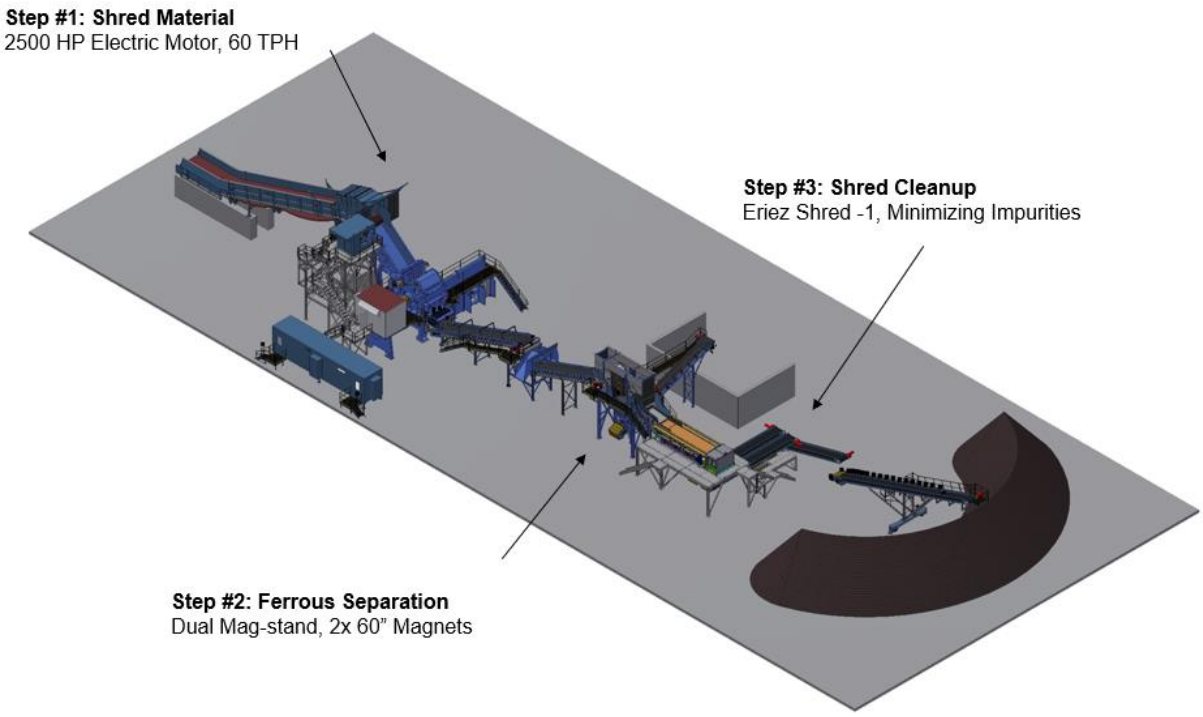


Figure 5: Wendt M6090 Shredder

The Shredder portion of the operation will segregate the ferrous materials from the non-ferrous materials through use of a dual magnetic stand. This plant will prepare a steel shred product, shown in Figure 6: Ferrous Shred, that is ready for market. Both ferrous shred and automotive shredder residue (ASR), shown in Figure 7: ASR (Automotive Shredder Residue) , will be conveyed into concrete bins for storage until trucking offsite or for further processing, as described in Operation.

Figure 6: Ferrous Shred

Figure 7: ASR (Automotive Shredder Residue)

3.3.6 Wendt NFe (Non-Ferrous) Processing Plant

The non-ferrous (NFe) processing plant (Figure 8: Wendt NFe (Non-Ferrous) Processing Plant) houses a series of processes which utilize state of the art technology to clean and extract all non-ferrous metals from ASR. The purpose of this plant if to purify the waste that is to be disposed of at local landfill, ensuring no metal scrap is in the mixture. Similar to the shredder, the NFE plant is 100% electric, with no diesel power or emissions.

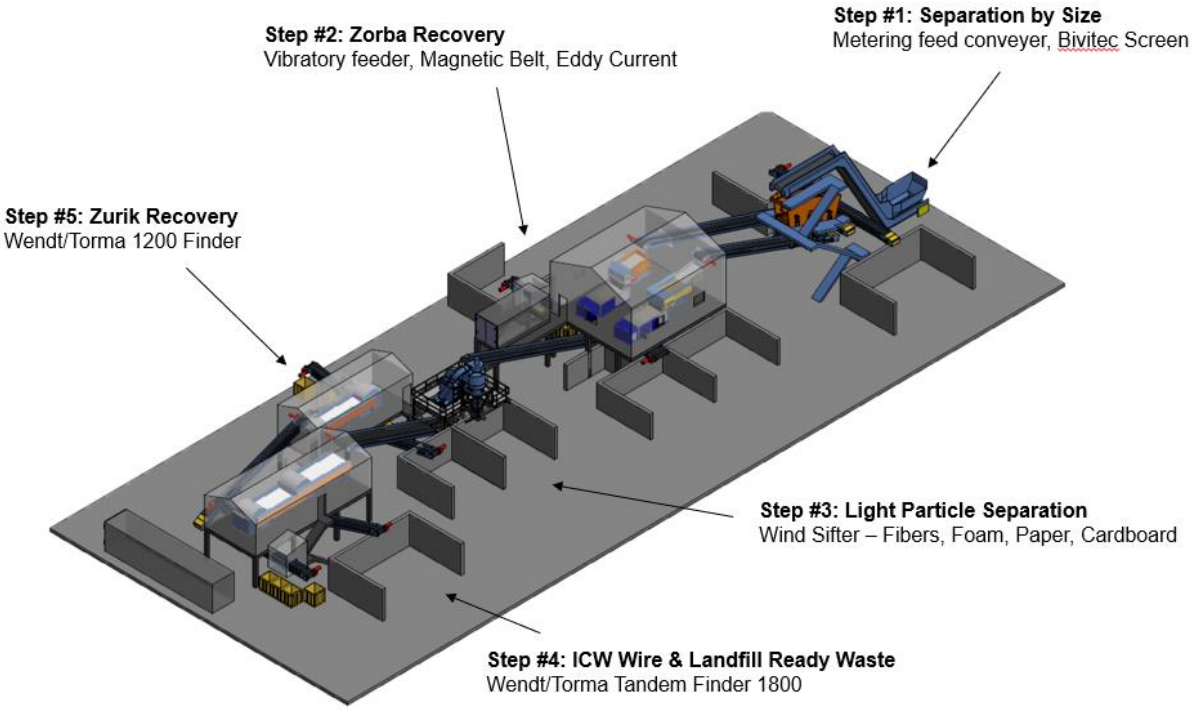


Figure 8: Wendt NFe (Non-Ferrous) Processing Plant

The NFe Plant will be able to extract another 13% of recoverable, marketable material from the total throughput. In older style shredders lacking modern technology used by other Canadian operators, this additional material would normally be disposed of as landfill waste. Table 2: NFe Plant Recoverables outlines the material that will be recovered from the NFe plant.

Product	Description	Photo
Zorba	Product from Eddy current separators, containing mostly Aluminum.	
Zurik	Product from Finders, containing mostly stainless steel.	
ICW	Insulated Copper Wire, produced from finders.	
Landfill Waste	From ASR. Seats, fabrics, plastics etc.	

Table 2: NFe Plant Recoverables

Figure 9: Material Breakdown by % Mass, provides the breakdown of material for automotive shredding operations.

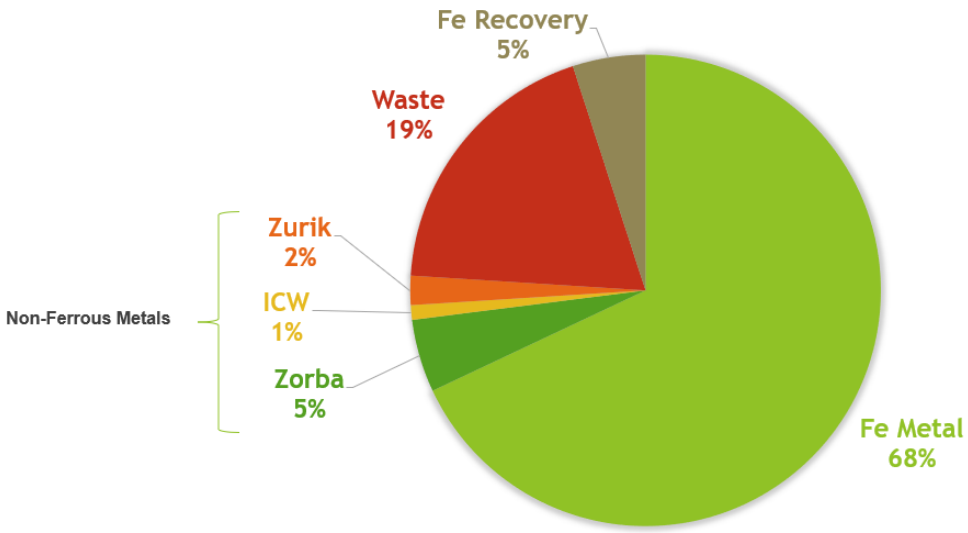


Figure 9: Material Breakdown by % Mass

A variety of studies have been completed to gain knowledge and learn about the composition of waste material from ASR. The material composition of ASR is highly dependent on material throughput and material de-polluting but can broken down as follows.

a. Plastics – 20-45%
b. Metals – 5-20%
c. Rubber – 5-25%
d. Foam – 0-15%
e. Wood/Cardboard – 0-5%
f. Textiles/Fibres – 5-30%
g. Glass – 0-20%

The de-polluting of automobiles is the single most important step to ensure that the quality of the ASR waste is suitable for disposal. Newco's SEDA Easydrain systems that will be installed on site feature the best technology for waste fluid extraction from automobiles, as well as the best containment system to keep the site and surrounding environment free of pollution.

3.3.7 SEDA Easydrain Automotive De-Polluting Stations

Automobiles will undergo a strict de-polluting procedure to ensure the proper drainage, containment and disposal of the following materials:

a. Batteries
b. Tires
c. Motor Oil
d. Transmission Fluid/Gear Oil
e. Glycol (Engine Coolant)
f. Gasoline

g. Refrigerant Contained in Air Conditioning Systems
h. Brake Fluid
i. Windshield Wash
j. Mercury Containing Switches

Fluids will be drained using two SEDA EasyDrain systems (see Figure 10: SEDA Easydrain System). The SEDA systems have been engineered to remove 98% of fluids from vehicles without spilling a drop. This technology is state-of-the-art and is important for the proper drainage and containment of environmentally hazardous materials. The two systems have been strategically planned to process the number of vehicles Newco plans to process daily.

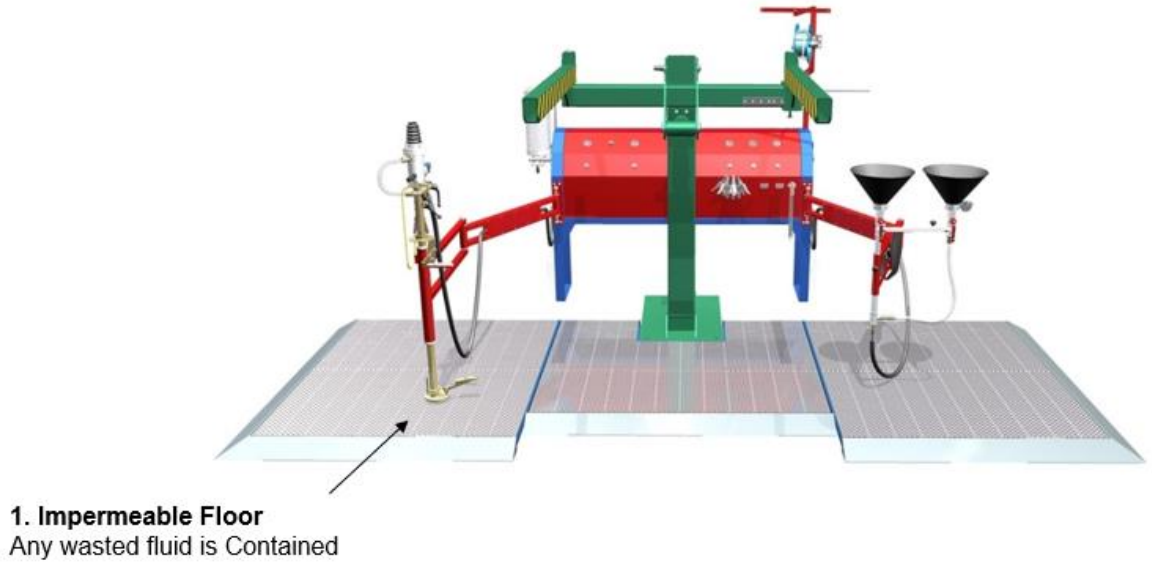


Figure 10: SEDA Easydrain System

The system is fastened to a steel base with an impermeable floor that if for any reason a small amount of fluid is released during the de-polluting process, it is contained and can be drained from the base as a part of the facility maintenance program.

The SEDA system will pump waste fluids to a series of double walled tanks (specifications shown in Site Plan, Appendix C - Site Plan
, specifically designed for the storage of waste fluids. Newco self-sufficiently disposes of its waste oil with a certified waste oil furnace at the Robin Hood Bay facility. The operator of the SEDA system has the ability to inspect gasoline to separate reusable fuels and dirty fuels. Newco has a gasoline recycling program with its employees to have the ability to reuse drained fuels. In this program, reusable fuels are collected on a daily basis in Gasoline tanks and can be used in employee vehicles. Dirty fuels, glycols, brake fluid and mercury switches will be disposed of through local certified disposal facilities. Temporary storage and shipment of these wastes to licenced facilities will be manifested as per provincial requirements to assist with tracking all waste locations and shipments in the province. While the vehicle is on the de-polluting rack, wheels and tires will be removed. Steel wheels will be recycled as #1 steel product which is trucked and stored in Newco's facility in Argentia before it is exported to international markets.

3.3.8 Concrete Pad

The site will have a 128m x 128m (1.60 Ha) concrete pad which will contain the shredding unit and all

other associated equipment and operations. All storm water from the site will be processed by a StormwateRx "Clara" oil/water/sediment separator. This system is a modern separator that uses gravity to remove hydrocarbons and suspended solids from storm water.

A full detention system that will temporarily store the difference in volume between the City's pre-development and post-development design storms is a requirement as a part of the City of St. Johns Stormwater Detention Policy. 25-year, 50-year, and 100-year return periods for 6 hour, 12 hour and 24 hour durations will be analyzed for the design of the stormwater detention system. The system will also ensure the preservation of the environment and fish habitat. It is important to note that the de-polluting systems, described later in this document, are designed to contain all waste fluids from vehicles, so it is not anticipated the separator will have to process any hydrocarbons. The separator is installed as a contingency as well as to improve stormwater runoff water quality. From there the run off will be handled to meet or exceed standards set out by the City of St. John's and the *Environmental Control Water and Sewer Regulations, 2003.* Details of the stormwater management system are outlined in Appendix G – Storm Water Management System Details.

Newco will operate using a strict spill prevention and management plan that will meet the following criteria:

a. A spill cleanup procedure that outlines process and materials to be used to clean up a spill of chemical waste.
b. The location of main drain of the concrete pad.
c. Location of material to temporarily block the drain in a spill event.
d. A schedule for inspecting storage areas and spill containment systems.

This will ensure that if any fluid is released on the concrete pad, it will be contained and removed for disposal, before reaching the drain.

3.4 Operation

Scrap materials that will be processed with the development are white goods, automobiles and light irons. Figure 11: Scrap Metal Processing Flowchart, presents the flow of material through the facility.

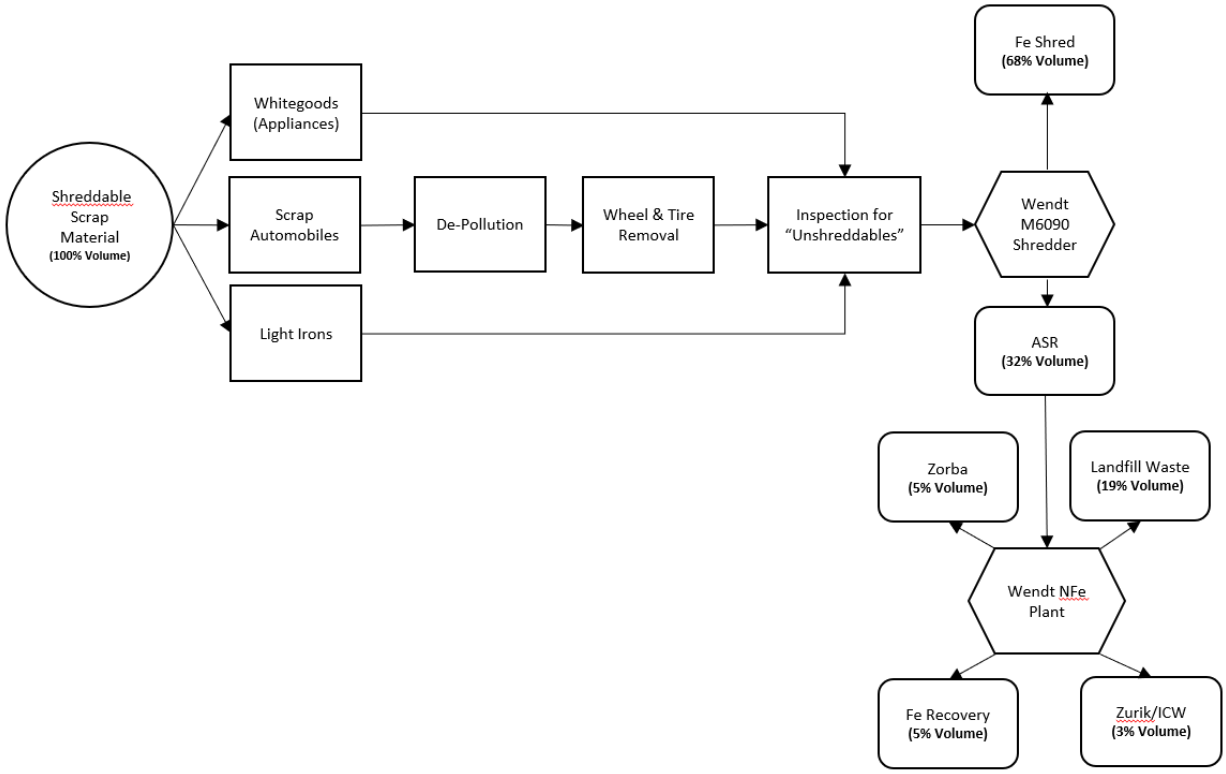


Figure 11: Scrap Metal Processing Flowchart

3.4.1 De-Pollution

Scrap automobiles will be de-polluted prior to shredding to ensure any environmental hazardous materials are contained, this is important for all stages of the end of life vehicle for ensuring waste material isn't released at the site and isn't contained in material that will be disposed of at the landfill.

Whitegoods (i.e. refrigerators, freezers, washers, dryers, dishwashers, etc), and vehicles are typically accepted free of any refrigerants or damaged by disposer such that refrigerant piping has been damaged. In cases where material still contains refrigerants (CFC's, HCFC's), Newco will have a licensed handler remove the material to properly contain, recover and dispose of such materials.

3.4.2 Wheel & Tire Removal

While at the de-polluting station, wheels and tires are removed to prepare vehicle for the next step of processing.

3.4.3 Inspection for Unshreddables or Explosives

This step involves a final inspection of the vehicle to ensure all mercury containing switches are removed, and verification that there are no combustible or explosive materials and no heavy steel plate that could potentially damage the shredder and associated components of the equipment. If any "Unshreddables" are found, they will be immediately transported to a licensed facility on Incinerator Road. This inspection step will also be important for confirmation of adequate de-pollution of the automobile. A trained employee will ensure all fluids, mercury switches, and all other de-pollutions steps are complete.

3.4.4 Wendt M6090 Shredder

De-polluted Automobiles, white goods and light irons will be picked and loaded into the Wendt M6090 Infeed conveyer, to start the shredding process. The shredder will reduce material in volume and sort ferrous from non-ferrous materials. The ferrous materials (i.e. shred), produced from the shredder will be stacked, loaded into scrap material haulers, and stored in Argentia until shipped by bulk vessel to international markets. All materials, once processed by the shredder, can be handled with a front-end loader with either a bucket or plate attachment.

3.4.5 Wendt NFe (Non-Ferrous) Processing Plant

Non-ferrous material from the shredder (also called ASR, an acronym for Automotive Shred Residue) will undergo processing and in the non-ferrous plant. This unit is composed of a series of state-of-the-art technologies designed to take all metal out of the ASR and will further separate aluminum, copper, stainless steel and waste materials for market and disposal.

3.4.6 Disposal of ASR Waste

Non-marketable waste (Automotive Shredder Residue, ASR) from the entire process collected from the non-ferrous plant will be disposed of at the Robin Hood Bay Waste Management Facility. Newco will have a truck dedicated to transporting waste to the disposal facility multiple times a day to manage storage and prevent overstocking. All materials, once processed by the shredder, can be handled with a front-end loader with either a bucket or plate attachment.

Newco has obtained a letter of acceptance from the City's Department of Public Works regarding the disposal of ASR waste at the Robin Hood Bay Waste Management Facility, presented in Appendix D - Letter of Acceptance ASR Waste Disposal. It is a requirement of the waste management facility as well as Newco to ensure that the disposal of waste material meets applicable standards.

Newco has engaged a qualified and experienced ASR testing and analysis contractor to assist with the development of our ASR waste monitoring and disposal protocols. Having an experienced contractor is important, especially since ASR disposal is new in this Province, to ensure that the results are precise, defensible and accurate and that the material meets requirements for disposal of solid waste and associated leachate testing guidelines.

ASR will be tested on regular basis, with the frequency and parameters to be outlined in the Certificate of Approval for the Incinerator Road site. In other jurisdictions (e.g., Nova Scotia and New Brunswick), chemical analysis and leachate testing of the ASR is conducted quarterly. It is anticipated that sampling protocol for the Newco site will be based on a "Collect 10 – Analyze 3 sample" procedure, with ten discrete samples collected during operation in a two-hour timeframe by trained technical staff. A random number generator will then be utilized to select three samples for analysis. Complete details outlining the sampling protocol, chemical analysis parameters and leachate testing will be included in the Certificate of Approval to be issued for Newco's proposed operations by the Government of Newfoundland and Labrador.

Based on the Guidance document, GP-PPD-26.1, from the Pollution Prevention Division, the contractor will use a monitoring program that tests for the following:

a. Total PCB.
b. Percent Moisture.
c. TCLP Metals

- Aluminum, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Sulfur, Uranium, Vanadium, Zinc.

All testing, sampling, and analysis will comply with the protocols in Guidance Document GP-PPD-26.1. Newco's automotive de-pollution procedures and equipment, as outlined in SEDA Easydrain Automotive De-Polluting Stations, will be paramount in the assurance of containing hazardous materials, and meeting the standards as outlined above. This type of de-polluting technology is proven and used at many facilities in Canada and around the world. The ASR testing will be an effective tool to evaluate the infeed control (de-pollution) performance, to ensure the operation is producing material within specifications of Guidance Document GP-PPD-26.1. If for any reason the ASR generated by Newco does not meet regulatory requirements for disposal of solid waste or associated leachate testing parameters, Newco will work with the Province to determine alternative ASR handling and disposal methods to achieve regulatory compliance.

3.4.7 Operations Schedule

Table 3: Weekly Operations Schedule outlines the projected weekly operation of the equipment, which includes a maintenance day. Newco anticipates the running of the equipment for a total of 40 hrs a week and that the shredder will not be in use during weekends or statutory holidays.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
No Operation	Operation (10 hrs)	Operation (10 hrs)	Operation (10 hrs)	Operation (10 hrs)	Maintenance (10 hrs)	No Operation

Table 3: Weekly Operations Schedule

3.4.8 Air Pollution Sources & Prevention

Dust Control

Many modern shredder manufacturers have incorporated dust control into the equipment and Wendt is no exception with the M6090 shredder. The shredder component has a dust control system to limit any airborne particles during operation and keep a suitable amount of moisture in the material as to optimize processing efficiency.

Wendt uses a system called *Smartwater Injection*, where water is injected into the infeed to keep a certain level of moisture in the material to eliminate the production of dust to limit emissions and air pollution as well as improving the system's ability to handle material. This is a computer-controlled system that regulates the temperature of the mill assembly from the creation of a water vapour.

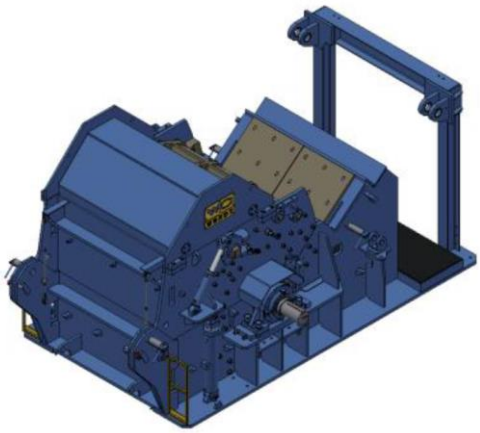


Figure 12: Shredder Mill with Water Injection

Figure 13: Water Injection HPU

The expansion of the injected water due to rapid evaporation in the presence of the heat of the process fills the shredding chamber with water vapor, reducing the entrance of atmospheric oxygen into the shredding chamber, greatly reducing the potential for deflagrations due to any unforeseen fuel source, not only in the shredder, but also in the immediately adjacent area. This function, the rejection of "air" from the shredding chamber, is best achieved through the use of a feedback loop using the shredder motor load to automatically adjust the volume of water injected.

Wendt states that *"The benefits of water injection have been proven over decades to such a degree that computer-controlled water injection is supplied generally as standard equipment for all new shredders, regardless of brand, and as upgrades for legacy machines."*

Water, for the purpose of the system, will be supplied to the equipment by the water storage tanks Newco will have installed at the facility, as indicated in Appendix B - Site Survey
. The equipment consumes anywhere from 0-15 GPM of water, depending on moisture level of material, sourcing water from the artesian well installed on site.

Dust is not expected to go beyond the fence line of the property. Use of the *Smartwater* injection system, as well as weather (i.e., dampness, humidity) will mitigate the development and propagation of dust.

Figure 14: Google Maps Image of Shredding Plant, presents a shredding operation, very similar to the operation proposed by Newco, that is completely bound by other businesses situated directly adjacent to the property. This demonstrates the effectiveness of the dust control system of the Wendt M6090 shredder in that neighboring businesses do not see any dust pollution effects from the operation. The location shown is in Goodwood, Nova Scotia, at 44° 36' 24" N and 63° 40' 35" W and the shredder in use is an older model Wendt M6090.

Figure 14: Google Maps Image of Shredding Plant

Electrical Power

Both the M6090 Shredder and NFe processing plant are powered electrically. This provides a vast improvement in emissions in comparison to older diesel-powered shredders, as there are zero emissions. All motors associated with the equipment (over 50), are powered electrically and connected back to the grid.

3.4.9 Noise Prevention

Noise pollution to neighboring properties is not anticipated by operating the M6090 shredder. Newco has also studied a variety of items pertaining to the site that make it a suitable location to operate with no adverse effect to neighboring properties and residential/agricultural areas.

Proximity to Neighbors: The decision to install on 390 Incinerator Road leaves a significant amount of distance between neighboring operations. Appendix A - Geographic Location
, outlines proximities to neighboring properties. The nearest industrial neighbor is approximately 250 m from the shredder, and nearest residential area is 3.75 km from the facility.

a. Area of Installation: The Incinerator Road area contains a variety of heavy industrial sites including rock crushers, hazardous waste disposal facilities, firefighting facilities, all of which are most appropriately operated away from residential areas, and do not cause any issues with the nearest residential/agricultural areas.

b. Site Plan and Geography: The nearest residential area is located North of the property. Also located near the property boundary is a high elevation peak which will be an effective noise barrier to ensure that no noise will be audible near residences. Figure 15: Natural Noise Barrier presents the area of high elevation that is located directly between the site and the nearest residential area. Breaking the line of sight with this physical barrier provides a very effective noise barrier.

Figure 15: Natural Noise Barrier

c. The site is also located at high elevation, avoiding any effects of echo or resonance which could have intensifying effects in a valley location.

Appendix E - Noise Level Diagram
outlines the expected level of noise generated by the Wendt M6090 shredder. At 30 m, it is expected that the sound level will be 85 db. 85 dB, according to the "Loudness comparison chart", published by DOT Canada, is equivalent to the sound of a vacuum cleaner at 10 feet away. Sound is inversely proportional to the square of the distance between the source and the receptor. There are other factors (i.e., reflective surfaces) that can add or subtract to the sound level, but the inverse square relationship provides an accurate estimate of the decrease in sound.

At 2000 m (2 km) from the source, the expected sound level is 0.023 % of that at the source. There is also a significant mass of land that acts as a barrier between the source and receptor. Given these items, the sound generated by the shredder will likely be inaudible due to the distance/noise level relationship and the presence of a physical barrier (raised land between the source and the distant residences).

At 3750 m (3.75 km) from the source, the expected sound level is 0.00653 % of that at the source. Again, there is significant mass of land between the source and receptor, meaning it is highly likely the noise will be inaudible.

Modern shredders are operated in areas that may be considered sound sensitive without issue. An example of this is presented in Figure 16: Shredder near Golf Course, a shredder and NFe plant that is situated next door to a golf course. The location shown is in Montreal East, at 45^{o} 38' 1" N and 73^{o} 33' 29" W.

Figure 16: Shredder near Golf Course

3.5 Storage & Material Handling

Newco currently processes approximately 40,000 Metric tonnes of shreddable material per year. It is estimated that approximately 75% of this is crushed automobiles. This data will be used for the purpose of estimating the material generated in the following sections.

3.5.1 Batteries

Used car batteries and other types of batteries will be collected from garages and the public and palletized for shipment to smelters, utilizing the following battery shipping criteria.

a. All batteries removed from scrap vehicles will be stored in an indoor facility to ensure no precipitation makes contact with the same.
b. Batteries will be shipped from the facility on a monthly basis for recycling at locations outside of the province in containers.
c. Batteries are stacked with wood or dense cardboard for separation, with the use of heavy shrink-wrap to contain them on pallets, and to ensure no contact or arching.

Battery processing is a continuance from the existing operation on Incinerator Road, except on a larger scale, given the additional throughput of material on site.

3.5.2 Mercury Containing Switches/Lead Weights

Mercury containing switches and tire weights that contain lead will be removed and stored in containers that meet the following criteria.

a. Stored in an above ground container.
b. Contain a label indicating the contents of the container.
c. Contained to ensure precipitation doesn't contact material.
d. Capable of storing contents without any degradation.
e. Container is sealed when not actively used.

Newco Metal & Auto Recycling is a member of the "Switch Out" mercury switch recovery program. Although mercury switches are used less and less in vehicles, Newco still sends a shipment of a pail of mercury switches to the licensed disposal facility annually.

3.5.3 Fluids

Fluids that have been removed from the vehicle or other material will be stored in double walled tanks, specifically designed for waste fluid storage. Newco will have 3 tanks installed on site to contain and store waste oil (500 gal), Waste Fuel (500 gal), and Waste Glycol (2 gal), as outlined in Appendix C - Site Plan .

Newco is anticipating the generation of waste fluids from a maximum of 5,000 vehicles per year. This number is significantly less than the total number of vehicles processes as the majority of end of life vehicles are processed are drained prior to taking ownership.

Average # of vehicles/ day: 20
Volume of oil per vehicle: 5 Litres x 20 vehicles = 100 L per day.
Volume of fuel per vehicle: 5 Litres = 100 L per day.
Volume of glycol per/vehicle: 5 Litres = 100 L per day.

Waste oil will be consistently transported to the St. John's location for waste oil furnace heat. Glycol and fuels will be disposed via waste disposal truck as needed and processed at the vendors licenced facility for waste disposal.

3.5.4 Tires

Where possible, tires will be culled for resale or disposed of through the MMSB Used Tire Management Program. Newco is a large contributor to this program, making up 7% of the total volume MMSB exports, contributing 21,935 tires to the MMSB in 2017. Tries are stored on site in piles until loaded into a container. Piles contain no more than 500 tires, and the total number of tires stored on site will not exceed 2000. Newco anticipates the generation of 80 waste tires/day at the incinerator road facility; at this production volume, used tires will be removed from site approximately once per month on average.

3.5.5 Ferrous Shred

Ferrous shred will be the primary product generated from the operation. A third-party contractor will be hired by Newco to provide trucking services of steel shred from Incinerator Road to Newco Argentia where it will be stockpiled for export by marine vessel.

As a guide, Newco will not store more than (1) day of produced ferrous shred on site.

# of Operating hours/day: 10
# of days: 1
Average TPH (Tonnes per Hour): 40
Percentage of total throughput: 73 % (assuming processing of scrap automobiles).

The maximum amount of ferrous shred that will be stored on site at any point is 292 MT.

3.5.6 Non-Ferrous Metals

Non-ferrous metals produced by the Wendt Non-ferrous plant will be handled using front end loaders and

stored/exported in shipping containers. Newco will store a maximum of (4) containers on site at any time with non-ferrous materials.

Non-ferrous metals make up approximately 8% of total produced material from the processing plant.

# of Operating hours/day: 10
# of days: 1
Average TPH (Tonnes per Hour): 40
Percentage of total throughput: 8 % (assuming processing of scrap automobiles).

With an anticipated weekly throughput of 1600 metric tonne, based on the above, Newco anticipates the generation of 128 MT of non-ferrous materials (Zorba, Zurik, and ICW) per week.

3.5.7 ASR Waste

ASR Waste, defined as the total volume of ASR subtracting the volume of non-ferrous metals removed by the Wendt NFe plant, makes up 19% of the total product produced from the operation, and will be transported via truck to the Robin Hood Bay landfill on a daily basis.

ASR Waste Generation:

# of Operating hours/day: 10
# of operating days/week: 4
Average TPH (Tonnes per Hour): 40
Percentage of total throughput: 19 % (assuming processing of scrap automobiles).

The total amount of ASR Waste generation on a weekly basis will be 304 metric tonnes. The maximum amount of ASR that will be stored on site at any time is (1) day of produced material, which is 76 metric tonnes. Newco processes approximately 40,000 Metric Tonnes a year, therefore a good estimate of total ASR disposed of at the landfill annually is 7600 Metric Tonnes.

3.5.8 Inspections

It will be a part of the weekly site maintenance program that storage areas, containers and systems are inspected to ensure adequate containment. Daily inspections for spills and leaks will also be conducted. Construction of the site will occur in two phases, each subject to Government of NL approvals. Following initial approval of the Project plans, Government inspectors will conduct a site inspection to ensure installations were constructed according to approved plans prior to issuance of the site's Certificate of Approval to operate. The Certificate of Approval will also outline any required environmental management procedures and material testing that will apply to the operations.

3.6 Occupations

The new facility will have the following staff for operation:

1 x General Manager
1 x Operation & Maintenance Engineer
1 x Yard Foreman
2 x Crane Operator
1 x Shear Operator
2 x Steel Cutters

1 x Shredder Operator
1 x NFe Plant Operator
2 x Welder/Maintenance Personnel
2 x Loader Operators
8 x Laborers for Picking Material
1 x Administrative Person
6 x Truck Operators

As outlined in Table 3: Weekly Operations Schedule, the operation will run 5 days a week, with 4 days of shredding, and one day of site cleanup and maintenance.

3.7 Application for Property Extension

Newco Metal & Auto Recycling has submitted an application to Crown Lands (Application No. 153391) to extend the property around the perimeter of the existing land, as show in Figure 17: Application for Crown Lands.

Figure 17: Application for Crown Lands

The expansion is important for two reasons:

1. Area A – Stormwater Detention – In order is effectively connect the stormwater detention system

to the existing ditch, there will have to be some infrastructure and piping installed in 'Area A' in blue.

2. Area B – Equipment Storage & Laydown – Newco currently has many acres of gravel lot storage and laydown at the 50 Robin Hood Bay Rd. site. Here, Newco parks trucks, trailers, scrap material haulers, roll-off scrap metal bins, car crushers, balers, and other material. Although important to the business, some of this equipment may be considered unsightly in the area. Area B already has had some development and use from previous owners and would be appropriate for additional parking. By obtaining the additional land, Newco can transition the 390 Incinerator Road site as a primary equipment dispatch location, significantly reducing the amount of equipment parked at Robin Hood Bay Road as well as significantly reducing the amount of equipment transported through St. John's. Newco also has the intention to leave a 10 m buffer zone around the perimeter of the property to decrease visibility of the operation and improve property aesthetics.

Newco has obtained the letter of approval for this application of Crown Lands, under the agreement that the development follows the City's development policy and program.

3.8 Groundwater Monitoring Program

Newco will contract a qualified environmental consultant to perform environmental site monitoring and investigations to monitor groundwater quality. Once the site is operational, a series of monitoring wells will be installed on the property to analyze groundwater conditions. Samples will be taken at planned intervals and laboratory tested/documented to ensure groundwater quality is maintained.

Testing of groundwater quality may include the following parameters; final analysis requirements will be outlined in the Certificate of Authorization for the operation to be issued by the Province:

a. Petroleum Hydrocarbons
b. VOC's
c. PAH's
d. Dissolved Metals

4 Requirements of Other Jurisdictions

As part of its permitting and approval process, Newco has held discussions with various Government of Newfoundland and Labrador regulators, including the Environmental Assessment Division, Pollution Prevention Division, Water Resources Management Division, and the City of St. John's. Since automobile shredding and associated ASR waste disposal are new activities within the Province, Newco was asked to provide some background information regarding how these activities are addressed by other jurisdictions. Within Atlantic Canada, two other provinces, New Brunswick and Nova Scotia, are host to operating metal recycling companies which shred cars and dispose of ASR. There are also notable differences among the operations. Following is a brief outline and comparison of these activities and regulatory requirements.

In New Brunswick there is an approved automobile shredder operating within the City of Saint John, located very close (approximately 250m) to the nearest residence. In that province, the regulatory process for approval of the operation was subject to the *Clean Environment Act – Environmental Impact Assessment Regulations* because of the importation of waste (scrap metals and ELVs) into the province, thus triggering the Act. As a consequence, the proponent was required to submit a Registration Document. In 2010, the activity was released from the environmental assessment process, subject to Conditions of Approval which accompanied the Ministers Determination. More detailed site-specific terms and

conditions are listed in the Approval to Operate for the proponent. All commitments made in the registration document as well as the requirements outlined in the Minister's Determination and the Approval to Operate are binding on the proponent. The mitigation measures and associated monitoring must be conducted in order for the approvals to remain valid. These measures include quarterly testing of the ASR and monthly sampling of surface water discharge to ensure levels of various parameters, including heavy metals, PCBs and Total Petroleum Hydrocarbons fall within accepted levels as outlined by government requirements. The New Brunswick operation is different from that proposed by Newco. Firstly, the operation is located very close to a residential neighborhood so there are specific requirements related to noise monitoring and particulate emissions monitoring. Secondly, the New Brunswick operation stockpiles ASR and subsequently ships it to its companion operation in Montreal, Quebec, for further processing to remove non-ferrous metals and for ultimate disposal of the ASR in that province.

The approval process for New Brunswick is analogous to the approval process that is in place in Newfoundland and Labrador. Here, the proposed activity is also required to undergo environmental assessment and any commitments made in the registration document and any conditions required by the Minister upon release from further environmental assessment will be binding upon the proponent. Additional site-specific terms and conditions for mitigation and monitoring will be outlined in the Certificate of Approval.

In Nova Scotia there is also a similar metal shredding project in operation. Environmental assessment of the operation in Nova Scotia was not required and work is currently underway to establish an approval document for the site. Similar to New Brunswick, the Nova Scotia approval document will outline terms and conditions for the site activities including measures to minimize or eliminate environmental effects and meet regulatory requirements for environmental protection. In the interim, ASR from that operation is disposed of as solid waste in a licenced municipal landfill. Prior to disposal, the company generating the ASR conducts chemical analysis for metals and PCBs as well as leachate testing. Results of the analysis and testing are compared with guidelines for the disposal of solid waste in place in the province. Since the ASR meets guideline requirements, it is disposed of as solid waste in the licenced municipal landfill without any further treatment.

5 Approval of the Undertaking

Newco purchased the site from Newfoundland Recycling Limited in 2016. In 2003 the previous site operator submitted a registration for a metal salvage yard (Reg # 1058), which included allowance for the installation and operation of a metal shredder. The Project was released from further environmental assessment subject to conditions. Because too much time had elapsed between the former approval and Newco's plans to upgrade its metal recycling facility, the Environmental Assessment Division advised Newco that its undertakings would require Registration per Part X of the *Environmental Protection Act*. This document is intended to meet that regulatory requirement.

The use of the area as a metal salvage yard was approved by efforts of the former operator. These approvals included a City of St. John's letter dated November 6, 2002 approving the application for the proposed commercial salvage site.

The Project will also require a Building and Development Permit from the City of St. John's (in progress) and a certificate of Approval from the Department of Municipal Affairs and Environment (following EA Release).

Prior to project start up a Water Use Licence will be required from the Water Resources Management Division, Department of Municipal Affairs and Environment, for use of water in the dust control system. Prior to project start up, a permit to alter a body of water will also be required from the Water Resources

Management Division for any ditch or culvert installation that may alter a water body. Finally, the Water Resources Management Division will require that Newco obtain a Permit for Constructing a Non-Domestic Well for the existing on site well. This is required to ensure the well meets terms and conditions regarding testing for quantity in order to ensure there is adequate water for the intended use.

6 Schedule

It is expected that the requirements of the Environment Assessment Registration and Review and anticipated release will occur in early May, allowing work to commence on the schedule as outlined in Appendix F - Project Schedule.

The Site development, equipment installation, commissioning and start up will occur over the course of 2018, as outlined in the schedule.

7 Funding

Funding for this project will be from private sources and financial institutions. Atlantic Canada Opportunities Agency (ACOA) has provided a $ 1,950,000.00 loan for Project development and equipment.

8 References

EPA. (2015, November 19). *Emission Factors for Green Gas Inventories.* Retrieved from EPA.GOV: https://www.epa.gov/sites/production/files/2015-12/documents/emission-factors_nov_2015.pdf

NRCAN. (2016, April 28). *Fuel Efficiency Benchmarking in Canadas Trucking Industry*. Retrieved from Natural Resources Canada: https://www.nrcan.gc.ca/energy/efficiency/transportation/commercial-vehicles/reports/7607

9 Regulatory Requirements

The activities associated with the operation will involve gaining permitting from the following bodies or regulations prior to operation.

9.1 City of St. John's

It will be the responsibility of Newco to ensure that the following requirements pertaining to the City of St. John's development regulations are met prior to operating the plant. These include but are not limited to the following.

- *Stormwater Detention Policy.*
- *City ditch or watercourse connection details.*
- *St. John's Regional Fire Department fire protection requirements.*
- *Road connections in accordance with Transportation Association of Canada.*
- *Waste Container storage requirements.*
- *Flammable and combustible liquid storage in conformance with National Fire Code.*
- *Sightline requirements for entry and exit of property in conformance with City of St. John's.*
- *Migratory Birds Convention Act.*
- *Licenced rodent control professional for rodent control.*
- *All drawings must be signed by a Professional Engineer.*

9.2 Water Resources

Water Usage

Newco will obtain a water use license prior to operating the facility, as per the *Water Resources Act, 2002*, for use of water on site. Newco will also apply for a permit for construction of a non-domestic well, also under the *Water Resources Act, 2002.*

Water Runoff

Any runoff leaving the site will be required to conform to the requirements of the *Environmental Control Water and Sewage Regulations, 2003.* A groundwater monitoring program is also required during operation of the facility, as per section 3.8, groundwater monitoring program.

9.3 Environment and Climate Change Canada

The following regulations and acts are applicable to the project, as indicated by ECCC (Environment and Climate Change Canada.

- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Canadian Environmental Protection Act*
- *Provisions for Movement of Hazardous Waste and Hazardous Recyclable Materials*

All activities associated with this operation may involve, but are not limited to, the following Provincial Acts and Regulations:

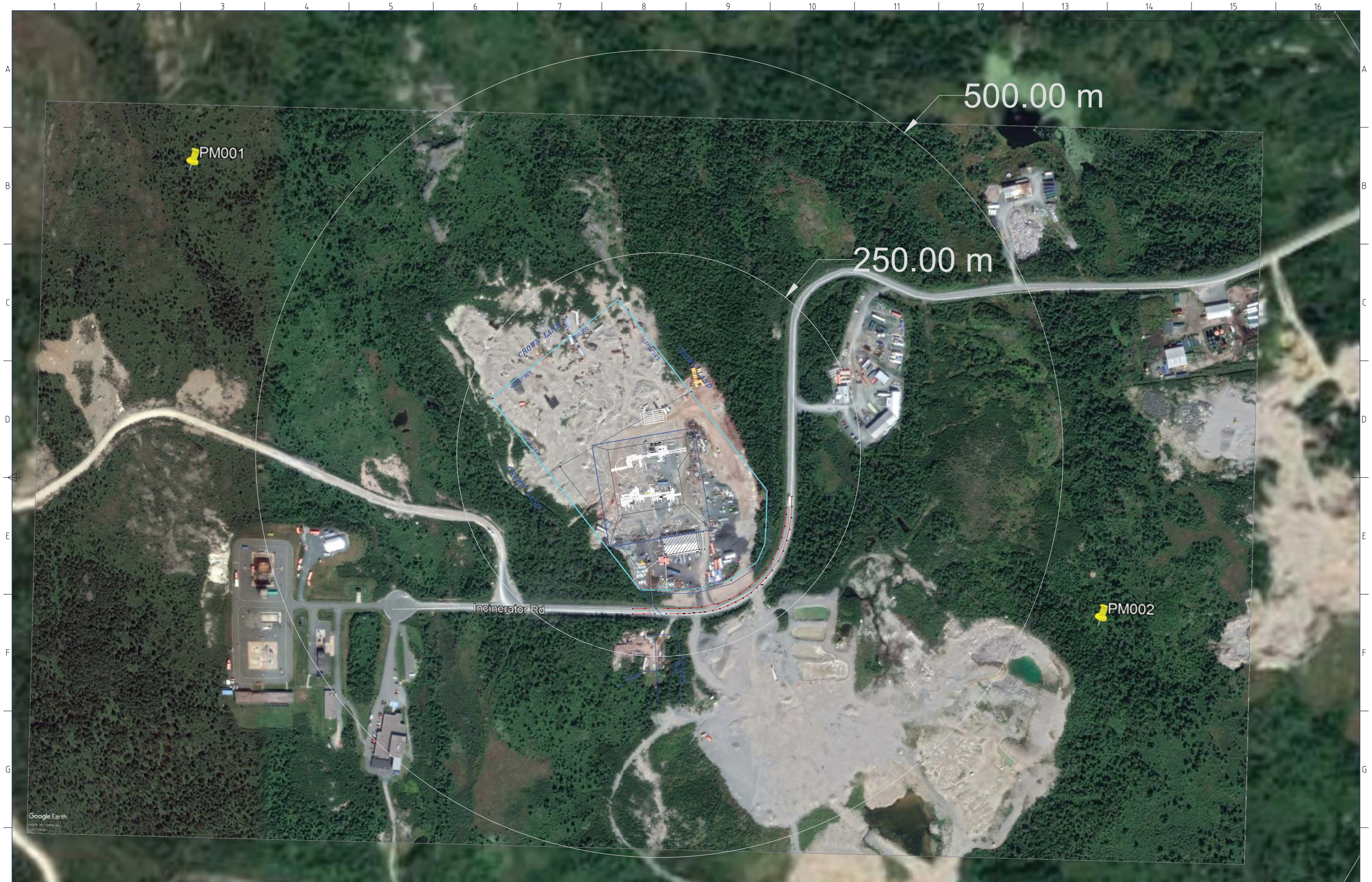
- *Environmental Protection Act*
- *Water Resources Act*
- *Storage and Handling of Gasoline and Associated Products Regulations, 2003*
- *Ozone Depleting Substances Regulations*
- *Environmental Control Water and Sewer Regulations.*
- *Dangerous Goods and Transportation Act and Regulations*
- *Fire Prevention Act and Regulations*
- *Air Pollution Control Regulations, 2004*
- *Halocarbon Regulations*
- *Used Oil Control Regulations*
- *Occupational Health and Safety Act and Regulations*

10 Signature

March 26th, 2018
Date

Robert Anstey, President

Appendix A - Geographic Location



Itemref	Quantity	Title/Name, designation, material, dimension etc			Article No./Reference	
Designed by NJH	Checked by ROD	Approved by - date ROD - 9/2/18	Filename R1		Date 28/01/18	Scale NTS
NEWCO METAL		AERIAL MAP				
		1		Edition 0	Sheet 1 OF 1	

Itemref	Quantity	Title/Name, designation, material, dimension etc			Article No./Reference
Designed by NJH		Checked by ROD	Approved by - date ROD - 9/2/18	Filename R1	Date 28/01/18	Scale NTS
NEWCO METAL		AERIAL MAP			
		3		Edition 0	Sheet 1 OF 1

Appendix B - Site Survey

DO NOT SCALE FROM PRINT

BENCH MARK
N 5 255 638.409
E 305 451.708
ELEVATION 163.294

NO.	REVISIONS	DATE
B	GRAVEL ACCESS AND ADDITIONAL GRADES SHOWN	DEC. 20, 2017
A	SIZE AND ORIENTATION OF CONCRETE PAD REVISED	JUNE 05, 2017

OWNER :

Newco Metals
390 Incinerator Road
St. John's, NL.

ENGINEERING:

SURVEYING :

BROWN & WAY SURVEYS
314 HAMILTON AVENUE
ST. JOHN'S, NL
A1E 1J9
PROFESSIONAL SURVEYING SERVICES
email : brownsur@nl.rogers.com
TEL. (709) 726-1040 FAX (709) 726-1041

PROJECT :

TITLE :

PROPOSED
NEW CONCRETE PAD
& GRADING PLAN

390 INCINERATOR ROAD, ST. JOHN'S, NL.

AUTHORITY :

SCALE : 1 : 500	DATE : DECEMBER, 2017
DRAWN BY: G.N.	SHEET 1 of 1
CHECKED BY:	SURVEYED BY:
APPROVED BY:	JOB NO. 11067-1

Appendix C - Site Plan

RevNo	Revision note	Date	Signature	Checked

N52°07'5

N37°52'24"W

3x 24000 L WATER STORAGE
HOOKUP FOR LOCAL FIRE DEPARTMENT

SPARE PARTS STORAGE CONTAINERS

128.016 m x 128.016 m CONCRETE SURFACE
SELF CONTAINED - SLOPED TO SINGLE DRAIN

WENDT M6090 SHREDDER

WENDT NFe PLANT

SEPTIC FIELD

AUTOMOTIVE DE-POLLUTING STATION

WASTE FLUIDS STORAGE TANKS

EXISTING BUILDING
SEE SURVEY FOR DIMENSIONS/LOCATION

ENTRANCE TO PROPERTY

FENCE

Itemref	Quantity	Title/Name, designation, material, dimension etc			Article No./Reference
Designed by NJH		Checked by RGA	Approved by - date RGA - 23/03/18	Filename SITE PLAN	Date 23/03/18	Scale NTS
NEWCO METAL				SITE PLAN		
				x	Edition 0	Sheet 1 OF 1

Appendix D - Letter of Acceptance ASR Waste Disposal

March 5, 2018

Newco Metals
50 Robin Hood Bay Rd
St. John's NL

Attn: Nicholas Henderson

Re: Disposal of Automotive Shredder Residue (ASR)

Mr. Henderson,

I am writing this letter in response to your request for Robin Hood Bay Landfill to accept Automotive Shredder Residue (ASR). The following information regarding this material was provided via email on February 28, 2018:

Annual ASR Generation:

Newco is planning to process around 40,000 MT of shreddable material annually, +/- 5000 MT. Although not all of this material will be vehicles, most will be.

About 19 % of material from shredding automobiles will be disposed of as ASR.

Therefore, total annual generation of ASR can be estimated at (0.19)*(40,000) = 7600 MT

Peak Weekly ASR generation & disposal:

On a peak production week, Newco will process 1600 MT total, equating to 304 MT of generated ASR.

This will be generated in a 4 day span, therefore maximum ASR generation and disposal should be 80 MT/day.

ASR Composition:

ASR will mostly be made up of most fine particles (almost looks like dirt, ~1mm), but will also contain some materials up to approximately 100 mm in smaller concentrations. This could be plastic particles, or foam from seats.

Decision:

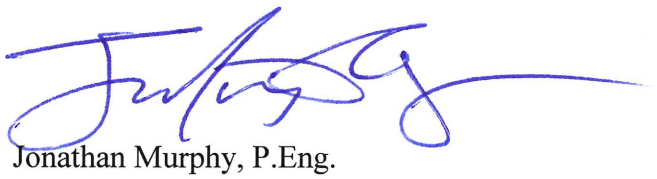
Based on the information provided by Newco Metals, Robin Hood Bay Waste Management Facility is willing to accept this material for landfill disposal. It is anticipated that the material will be handled and disposed of as regular waste, and will be subject to the applicable tipping fee at the time. At the time of the issuance of this letter, the regular tipping fee is $67.60 per tonne. Tipping fees are reviewed annually and are subject to change at any time.

Once the process is up and running, Robin Hood Bay may request that the material undergo a Toxicity Characteristic Leaching Procedure (TCLP) test to ensure concentrations of metals satisfy the guidelines in guidance document GD-PPD-26.1 (*Leachable Toxic Waste, Testing and Disposal).*

It should also be noted that Robin Hood Bay Landfill currently does not accept this specific material from any other source, and therefore is not familiar or aware of any operational or OHS challenges that may exist with handling and/or landfilling. Should any operational issues arise as the result of the disposal of this material, Robin Hood Bay will contact Newco Metals and attempt to find a way to mitigate any potential issues with disposal.

Should you have any further questions, please contact me.

Regards,

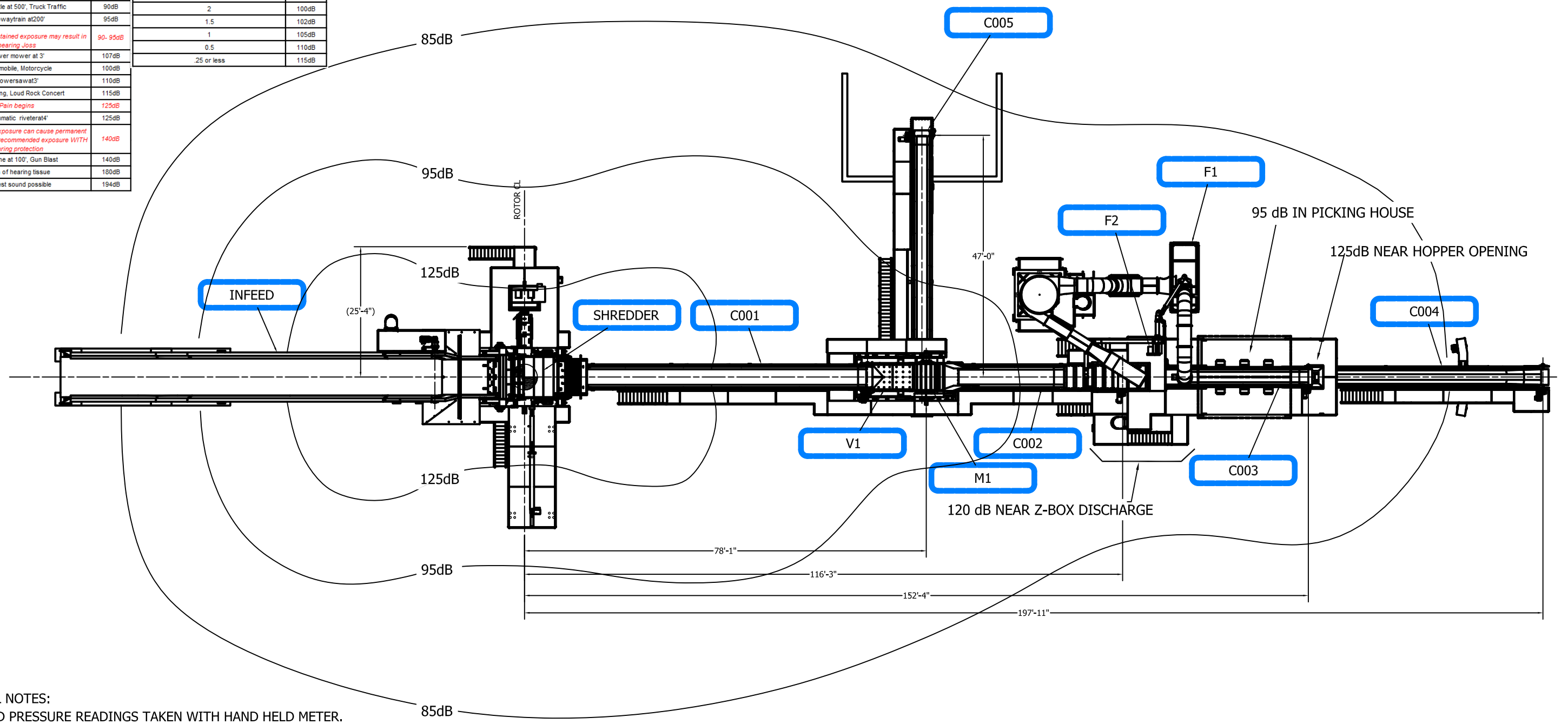


Jonathan Murphy, P.Eng.
Waste Mangement Engineer
Robin Hood Bay Regional Waste Management Facility
709-576-0355
jemurphy@stjohns.ca

Appendix E - Noise Level Diagram

Environmental Noise	
Weakest sound heard	0dB
Whisper Quiet Library	30dB
Normal conversation (3-5')	60-70dB
Telephone dial tone	80dB
City Traffic (inside car)	85dB
Train whistle at 500', Truck Traffic	90dB
Subwaytrain at200'	95dB
Level at which sustained exposure may result in hearing Joss	*90- 95dB*
Power mower at 3'	107dB
Snowmobile, Motorcycle	100dB
Powersawat3'	110dB
Sandblasting, Loud Rock Concert	115dB
Pain begins	*125dB*
Pneumatic riveterat4'	125dB
Even short term exposure can cause permanent damage- Loudest recommended exposure WITH hearing protection	*140dB*
Jet engine at 100', Gun Blast	140dB
Death of hearing tissue	180dB
Loudest sound possible	194dB

OSHA Daily Permissible Noise Level Exposure	
Hours per day	Sound level
8	90dB
6	92dB
4	95dB
3	97dB
2	100dB
1.5	102dB
1	105dB
0.5	110dB
.25 or less	115dB



GENERAL NOTES:

1. SOUND PRESSURE READINGS TAKEN WITH HAND HELD METER.
2. VALUES ARE "A" WEIGHTED .
3. VALUES ARE "AVERAGE" AND DO NOT INCLUDE SPIKES.
4. READINGS TAKEN DURING SHREDDING A MIXTURE OF LIGHT IRON AND AUTO BODIES.
5. DISTANCES ARE APPROXIMATE AND CAN BE AFFECTED BY SITE SPECIFIC CONDITIONS.
6. dB AVERAGE READINGS NEAR FERROUS STACKING PILE VARY GREATLY BY THE HEIGHT OF FREEFALL
7. dB AVERAGE READINGS IGNORE INFLUENCES OF MOBILE EQUIPMENT.

METERS SCALE 0 5 10

FEET SCALE 0 5 10 15 20 25 30

AUTODESK INVENTOR GENERATED DRAWING

8/11	CHG# 9414	
DATE	WHERE USED	

TOLERANCES UNLESS STATED
INCH .X ± .06 .XX ± .015 .XXX ± .005
FINISH MICRO INCH
ANGLES ± 0° 30'

DRAWN BY: BDP DATE: 11/10/11
CHECKED:

WENDT CORPORATION
2080 MILITARY ROAD
TONAWANDA, NY 14150-6765
TEL. (716) 873 - 2211
FAX. (716) 873 - 9309

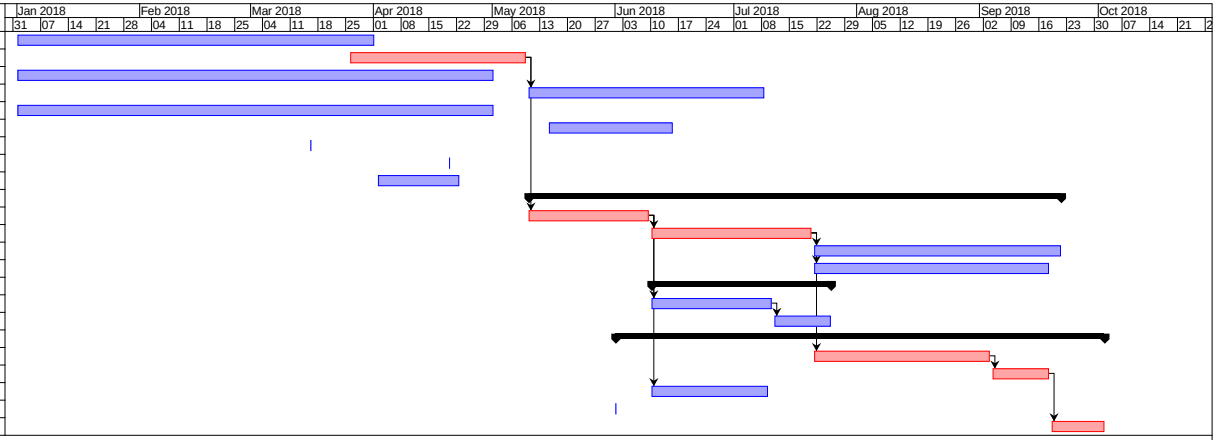
TITLE: ROCHESTER IRON & METAL NOISE LEVEL DIAGRAM

SCALE	SHEET	OF
NTS	1	5

CODE	DWG SIZE	DWG NO.	REV.
945	4	1302	00

Appendix F - Project Schedule

		Name	Duration	Start	Finish	Predecessors
1		Site Engineering	90 days	1/1/18 9:00 AM	4/1/18 9:00 AM	
2		EA Registration	45 days	3/26/18 8:00 AM	5/9/18 5:00 PM	
3		Permitting - City of St. Johns	120 days	1/1/18 9:00 AM	5/1/18 9:00 AM	
4		Electrical Conduit Installation	60 days	5/10/18 8:00 AM	7/8/18 5:00 PM	2
5		Wendt NFe Plant Shipping	120 days	1/1/18 9:00 AM	5/1/18 9:00 AM	
6		Wendt M6090 Shredder Shipping	32 days	5/15/18 8:00 AM	6/15/18 5:00 PM	
7		Wendt NFe Plant Installation Drawings	0.5 days	3/16/18 8:00 AM	3/16/18 1:00 PM	
8		Wendt M6090 Shredder Installation Drawings	0.5 days	4/20/18 8:00 AM	4/20/18 1:00 PM	
9		Mechanical Installation Tender	21 days	4/2/18 8:00 AM	4/22/18 5:00 PM	
10		**Concrete Foundation Installation**	**135 days**	**5/10/18 8:00 AM**	**9/21/18 5:00 PM**	
11		NFe Plant Foundation	31 days	5/10/18 8:00 AM	6/9/18 5:00 PM	2
12		M6090 Plant Foundation	41 days	6/10/18 8:00 AM	7/20/18 5:00 PM	11
13		Foundation Installation - Rest of Pad	63 days	7/21/18 8:00 AM	9/21/18 5:00 PM	12
14		Installation of Oil/Water Seperator & Stormwater Detention	60 days	7/21/18 8:00 AM	9/18/18 5:00 PM	12
15		**Construction of NFe Plant**	**46 days**	**6/10/18 8:00 AM**	**7/25/18 5:00 PM**	
16		Mechanical Installation NFe	31 days	6/10/18 8:00 AM	7/10/18 5:00 PM	11
17		Electrical Installation NFe	15 days	7/11/18 8:00 AM	7/25/18 5:00 PM	16
18		**Construction of Wendt M6090 Shredder**	**124 days**	**6/1/18 8:00 AM**	**10/2/18 5:00 PM**	
19		Mechanical Insallation	45 days	7/21/18 8:00 AM	9/3/18 5:00 PM	12
20		Electrical Installation	15 days	9/4/18 8:00 AM	9/18/18 5:00 PM	19
21		SEDA Automotive De-polluting Facility Installation	30 days	6/10/18 8:00 AM	7/9/18 5:00 PM	11
22		NL Power Site Service	0.5 days	6/1/18 8:00 AM	6/1/18 1:00 PM	
23		Equipment Commissioning	14 days	9/19/18 8:00 AM	10/2/18 5:00 PM	20



Appendix G – Storm Water Management System Details

NEWCO METAL
STORMWATER DETENTION
ST. JOHN'S, NL

CLIENT:

NEWCO METAL AND AUTO RECYCLING

PINNACLE
ENGINEERING LIMITED

SUITE 202, 40 ABERDEEN AVENUE
ST. JOHN'S, NL, CANADA A1A 5T3
TEL: (709) 754-2114
FAX: (709) 738-0707

DRAWING LIST

C1 GENERAL PLAN
C2 GENERAL ARRANGEMENT PLAN
C3 PLAN AND PROFILE
D1 CONSTRUCTION DETAILS - 01
D2 CONSTRUCTION DETAILS - 02

Project No. 18004

FEBRUARY 2018

PINNACLE ENGINEERING LIMITED

GENERAL NOTES

1. CONTOURS ON PLAN AREA BASED ON LIDAR DIGITAL MAPPING.
2. ALL WORK TO BE DONE IN ACCORDANCE WITH CITY OF ST. JOHN'S SPECIFICATIONS BOOK.
3. AERIAL PHOTO SHOWN ON DWG C1 IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY NOT REFLECT CURRENT EXISTING SITE CONDITIONS.
4. ALL MEASUREMENTS ARE HORIZONTAL GROUND DISTANCES IN METERS AND REFERENCED TO NAD 83 DATUM.
5. CONTRACTOR RESPONSIBLE TO SECURE SITE DURING CONSTRUCTION FOR SUBLIC SAFETY.
6. DO NOT SCALE FROM DRAWINGS.

GRADING AND SERVICING NOTES

7. CONTRACTOR RESPONSIBLE FOR LOCATING EXISTING UNDERGROUND INFRASTRUCTURE BEFORE PROCEEDING WITH ANY WORK. ADVISE ENGINEER OF ANY DISCREPANCIES.
8. PROVIDE SAFETY LANDINGS FOR ALL MANHOLES DEEPER THAN 5.0m.
9. BED STORM SEWERS IN CLASS 'B' BEDDING.
10. CONTRACTOR TO OBTAIN AN EXCAVATION PERMIT PRIOR TO COMMENCING ANY WORK WITHIN EX. STREET RIGHT-OF-WAY.
11. CONTRACTOR RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UNDERGROUND INFRASTRUCTURE (I.E. WATERMAINS, STORM SEWERS, TELEPHONE,CABLE, POWER LINES, FIBRE OPTICS LINES, ETC.) BEFORE PROCEEDING WITH THIS WORK. ADVISE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR TO PROCEED WITH EXTREME CAUTION WHEN WORKING IN AREAS OF EX. UNDERGROUND ELECTRICAL CONDUIT. ANY DAMAGE TO EXISTING INFRASTRUCTURE SHALL BE CORRECTED AT THE CONTRACTORS EXPENSE.
12. MANHOLE/CATCHBASIN SIZES SHOWN TO BE CONFIRMED BY MANHOLE SUPPLIER. CONTRACTOR TO PROVIDE SHOP DRAWINGS OF ALL MANHOLES AND CATCHBASIN-MANHOLES FOR APPROVAL.
13. CONSTRUCT, TEST AND INSPECT STORM SEWER IN ACCORDANCE WITH CITY OF ST. JOHN'S SPECIFICATIONS BOOK.

NO.	REVISIONS	DATE
A	ISSUED FOR REVIEW	23/03/18

PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ENGINEER — pegnl — TREVOR G. MOORE — SIGNATURE — 23 MARCH 2018 — DATE — PROVINCE OF NEWFOUNDLAND

PROVINCE OF NEWFOUNDLAND
pegnl
PERMIT HOLDER
Class "A"
This Permit Allows
PINNACLE ENGINEERING LIMITED
To practice Professional Engineering in Newfoundland and Labrador.
Permit No. as issued by PEGNL L0331
which is valid for the year 2018.

CLIENT

NEWCO METAL
AND AUTO RECYCLING

PROJECT TITLE

NEWCO METAL
STORMWATER DETENTION

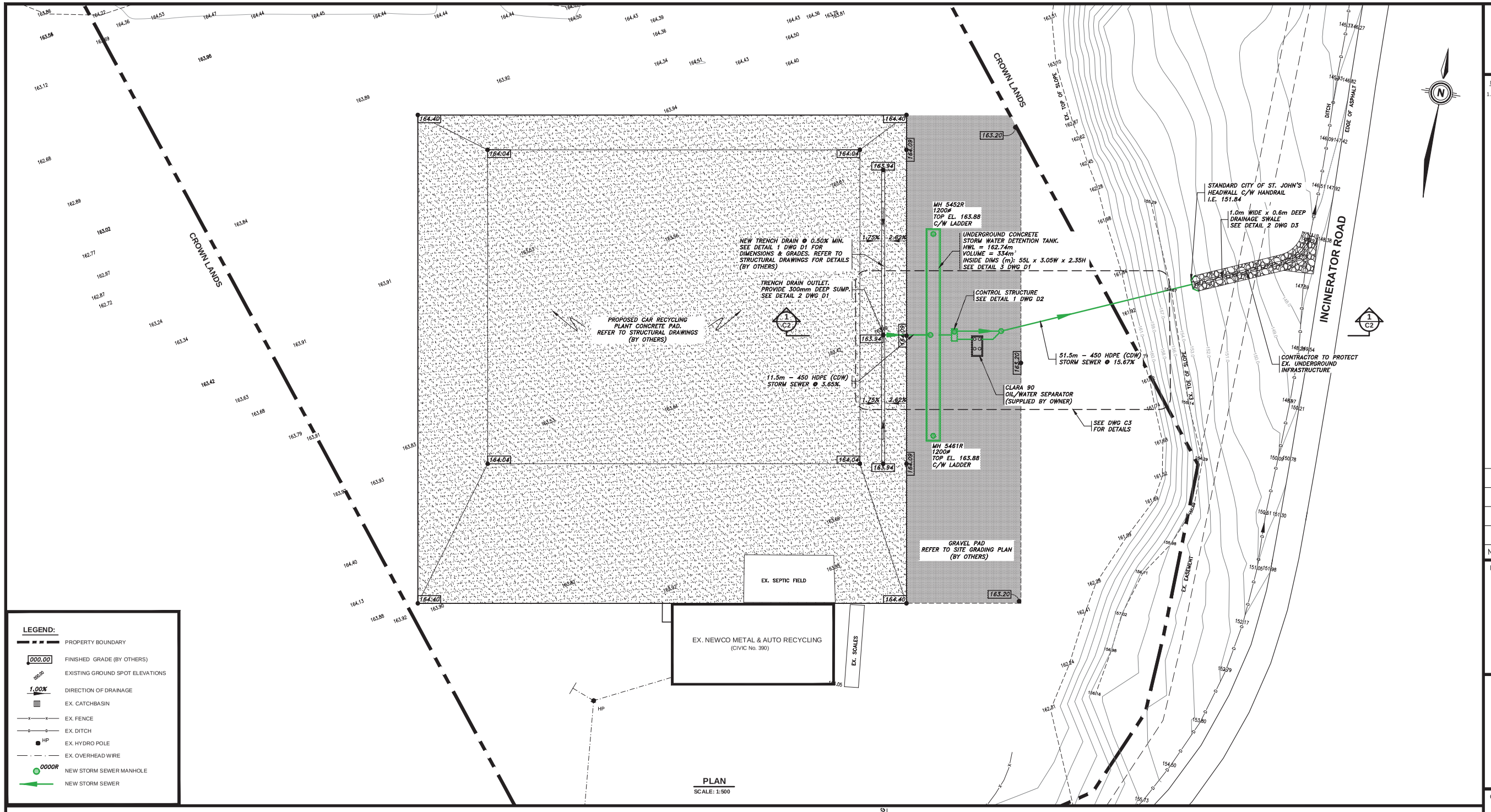
SHEET TITLE

GENERAL PLAN

PROJECT NO.

18004

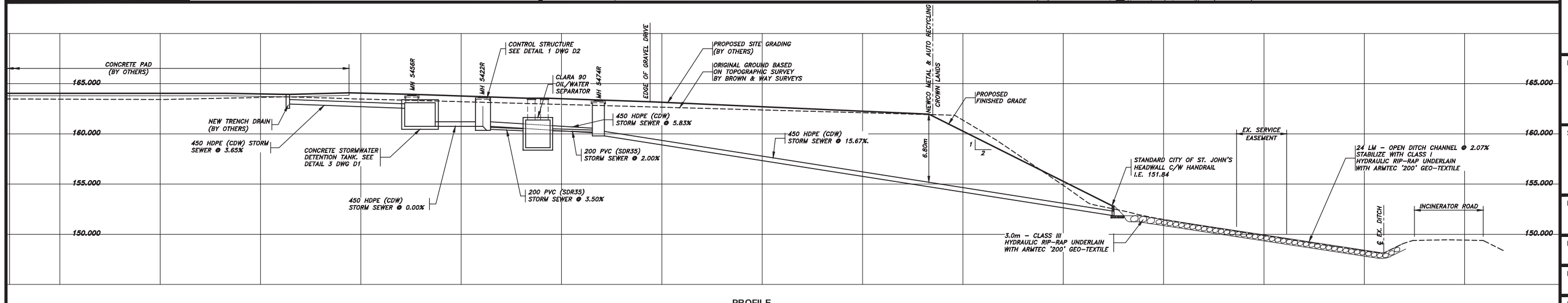
DRAWN BY	CHECKED BY
SDB	TM
DATE	DRAWING NO.
FEBRUARY 2018	C1
SCALE 1 : 3000	



PLAN
SCALE: 1:500

LEGEND:

- PROPERTY BOUNDARY
- 000.00 FINISHED GRADE (BY OTHERS)
- 000.00 EXISTING GROUND SPOT ELEVATIONS
- 1.00% DIRECTION OF DRAINAGE
- EX. CATCHBASIN
- EX. FENCE
- EX. DITCH
- HP EX. HYDRO POLE
- EX. OVERHEAD WIRE
- 0000R NEW STORM SEWER MANHOLE
- NEW STORM SEWER



PROFILE
SCALE: 1:200

PINNACLE ENGINEERING LIMITED

NOTES

1. CONTOURS ON PLAN AREA BASED ON TOPOGRAPHIC SURVEY BY BROWN AND WAY SURVEYS OF FEBRUARY 2018.

NO.	REVISIONS	DATE
A	ISSUED FOR REVIEW	23/03/18

PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ENGINEER
pegnl
PROFESSIONAL ENGINEERS AND GEOSCIENTISTS NEWFOUNDLAND & LABRADOR
TREVOR G. MOORE
SIGNATURE
23 MARCH 2018
DATE
PROVINCE OF NEWFOUNDLAND

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AND AUTO RECYCLING

PROJECT TITLE
NEWCO METAL
STORMWATER DETENTION

SHEET TITLE
GENERAL ARRANGEMENT
PLAN

PROJECT NO.
18004

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SDB	TM
DATE: FEBRUARY 2018	DRAWING NO.: C2
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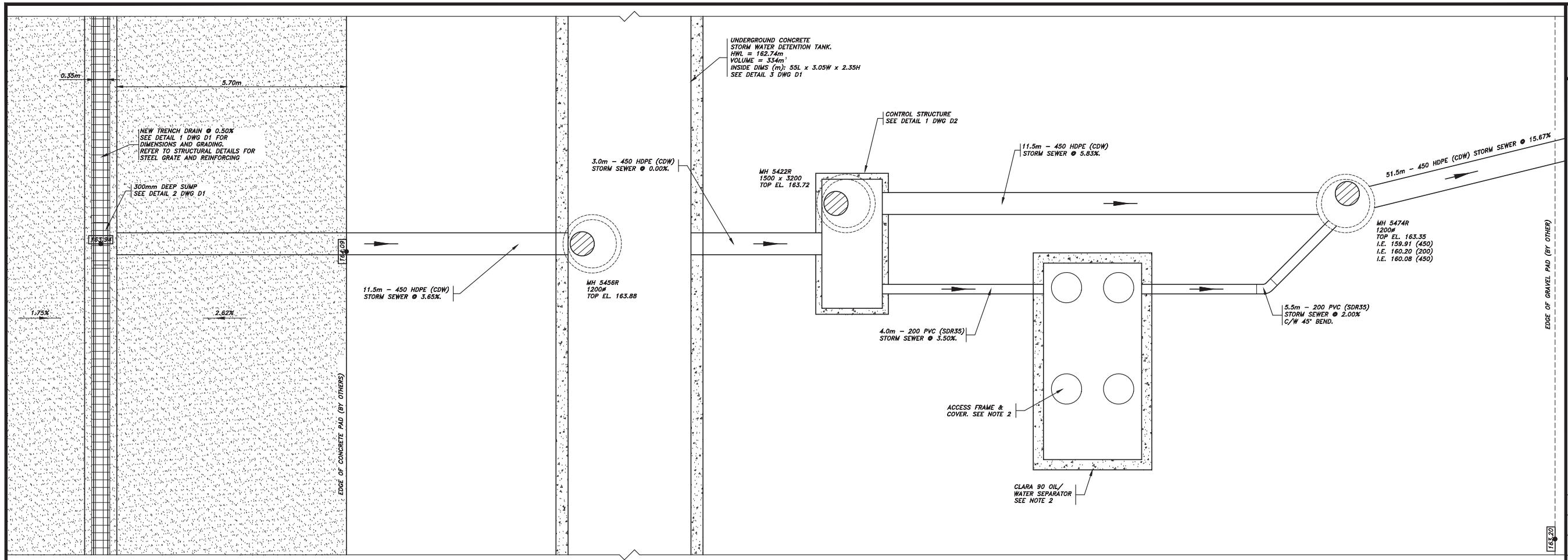
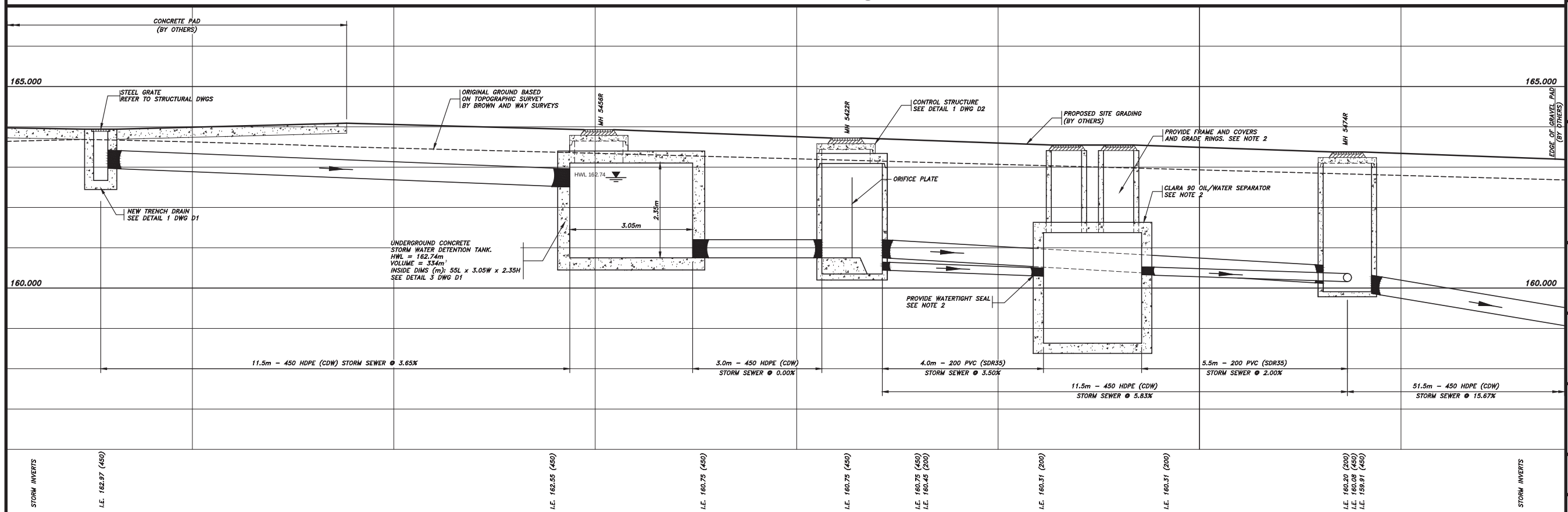


SITE PLAN (1 / C3)
SCALE: 1 : 50



SITE SECTION (2 / C3)
SCALE: 1 : 50

PINNACLE ENGINEERING LIMITED

NOTES

1. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR UNDERGROUND PRE-CAST CONCRETE STORMWATER DETENTION CHAMBER, CONTROL STRUCTURE, MANHOLES AND ORIFICE PLATE. SHOP DRAWINGS SHALL BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN NEWFOUNDLAND AND LABRADOR. THE UNDERGROUND STORAGE CHAMBER SHALL BE CAPABLE OF WITHSTANDING VEHICLE LIVE LOAD (CL-625). CHAMBER SHALL BE WATERTIGHT AND DESIGNED TO RESIST FLOATATION. WALL AND SLAB THICKNESS TO BE CONFIRMED BY STRUCTURAL ENGINEER.
2. CLARA 90 OIL/WATER SEPARATOR CHAMBER TO BE SUPPLIED BY OWNER AND INSTALLED BY CONTRACTOR. CONTRACTOR TO RELOCATE THE OIL/WATER SEPARATOR TO NEW LOCATION ONSITE AND SUPPLY FRAME AND COVERS AND GRADE RINGS AS REQUIRED. SHOP DRAWINGS OF THE OIL/WATER SEPARATOR CHAMBER TO BE PROVIDED TO CONTRACTOR FOR COORDINATION. EXISTING 610mm DIAMETER INLET AND OUTLET HOLES TO BE MODIFIED TO ACCOMMODATE NEW 200mm STORM SEWER. PROVIDE WATERTIGHT SEAL WITH APPROPRIATE RATED LINK SEAL OR APPROVED EQUAL.

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NEWCO METAL
AND AUTO RECYCLING

PROJECT TITLE
NEWCO METAL
STORMWATER DETENTION

SHEET TITLE
PLAN AND PROFILE

PROJECT NO.
18004

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SDB	TM
DATE	DRAWING NO.
FEBRUARY 2018	C3
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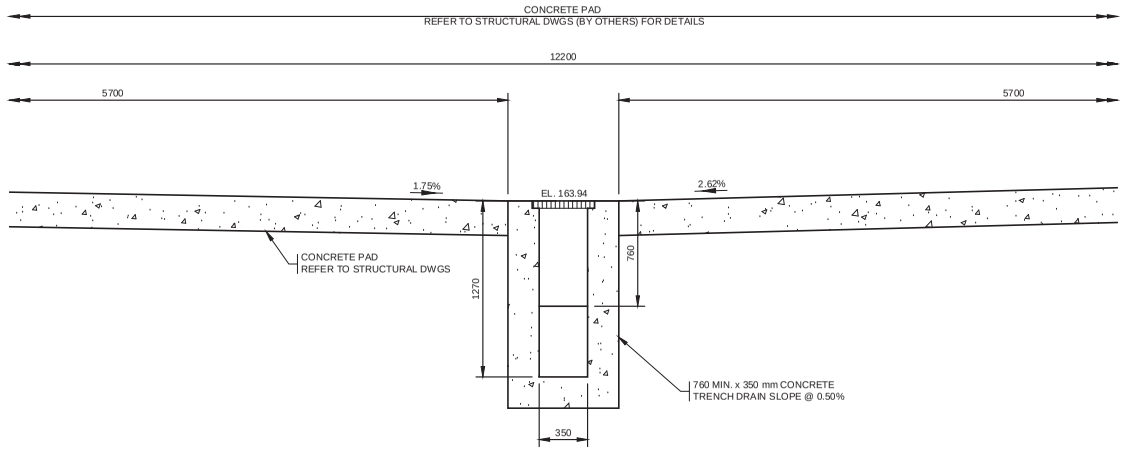

TYPICAL TRENCH DRAIN SECTION (1 / D1)
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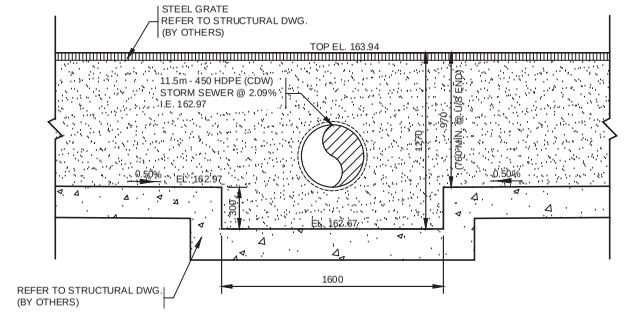

TRENCH DRAIN SUMP SECTION (2 / D1)
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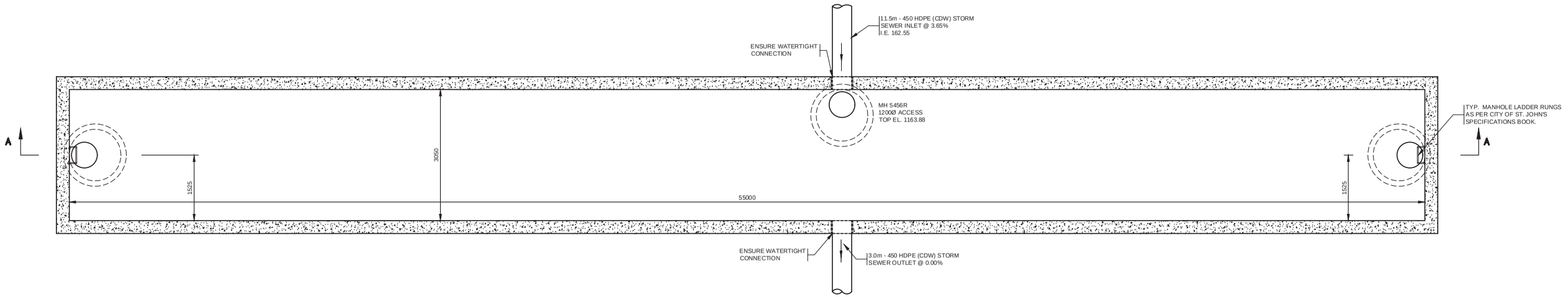
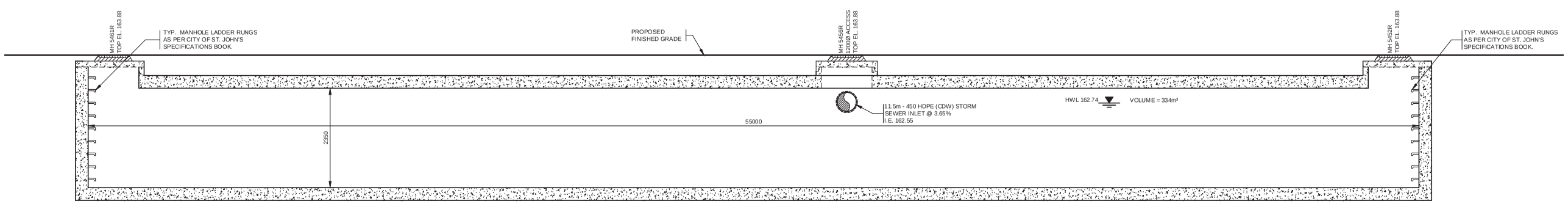


PLAN



SECTION A-A

DETENTION CHAMBER DETAILS (3 / D1)
SCALE: NTS

PINNACLE ENGINEERING LIMITED

NOTES

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pegnl
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NEWCO METAL
AND AUTO RECYCLING

PROJECT TITLE
NEWCO METAL
STORMWATER DETENTION

SHEET TITLE
CONSTRUCTION DETAILS - 01

PROJECT NO.
18004

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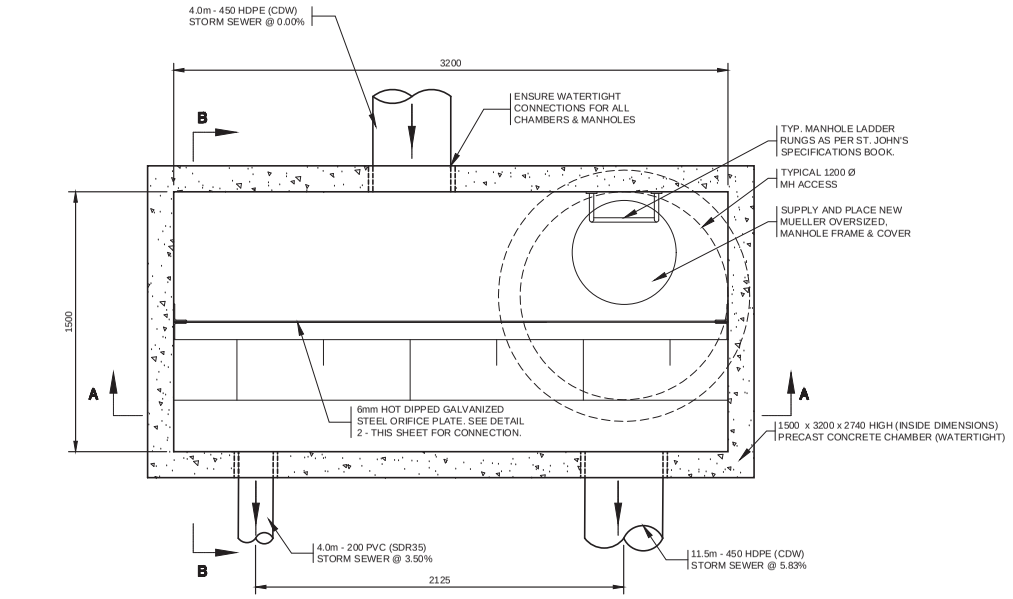
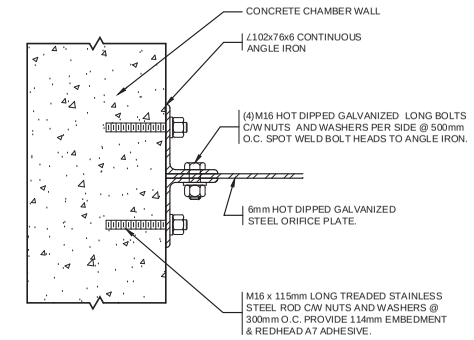
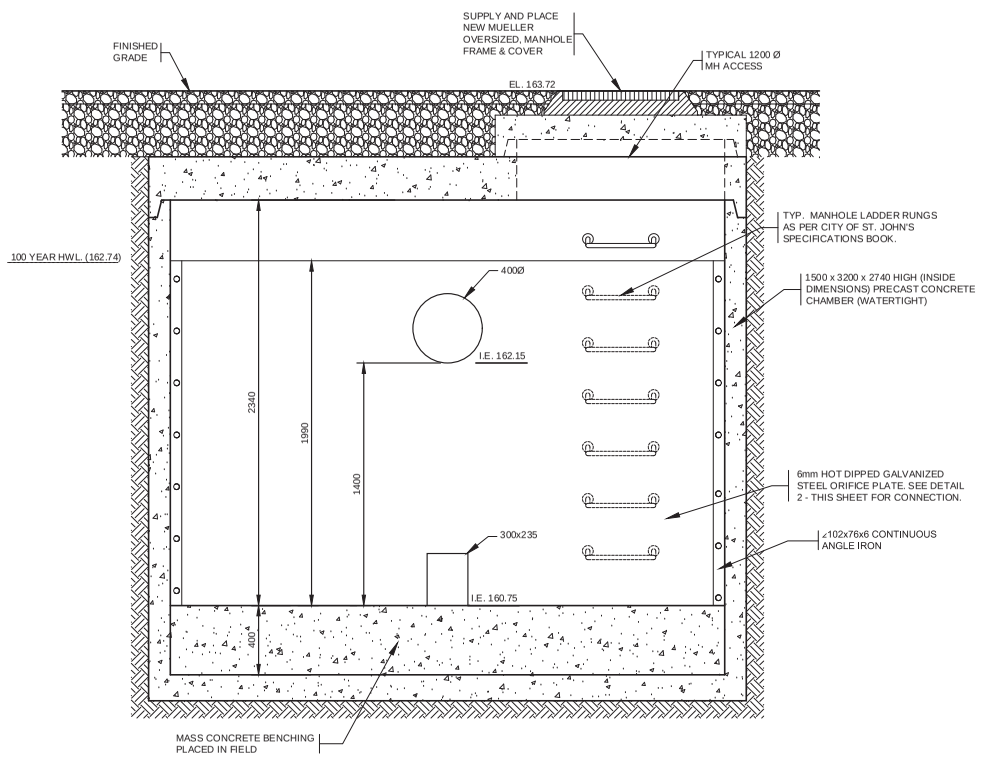
SDB	TM
DATE	DRAWING NO.
FEBRUARY 2018	D1
SCALE: AS SHOWN	



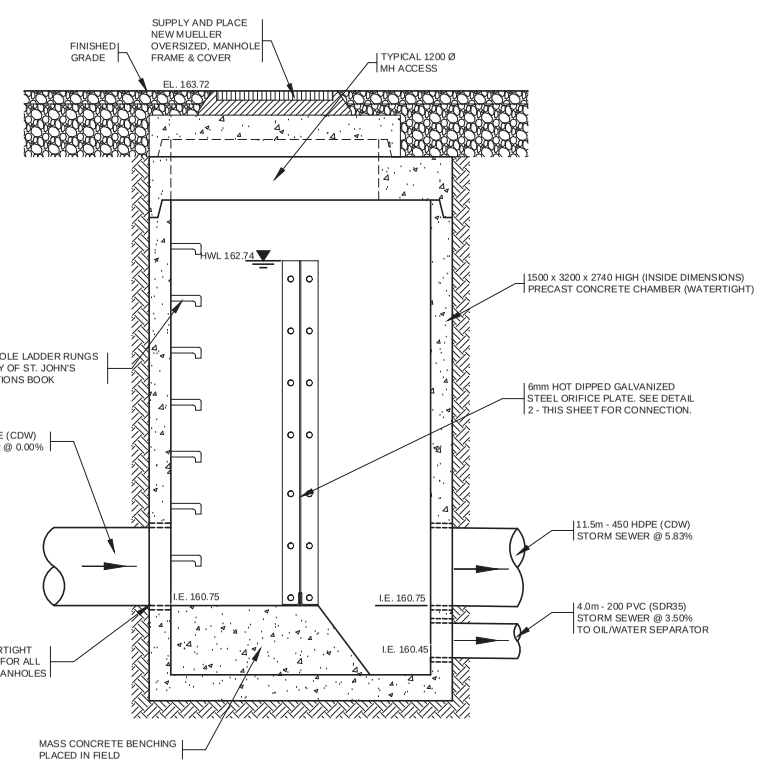
PLAN



ORIFICE PLATE CONNECTION DETAIL (2 / D2)
SCALE: 1 : 5



SECTION A-A



SECTION B-B

OUTLET CONTROL STRUCTURE (1 / D2)
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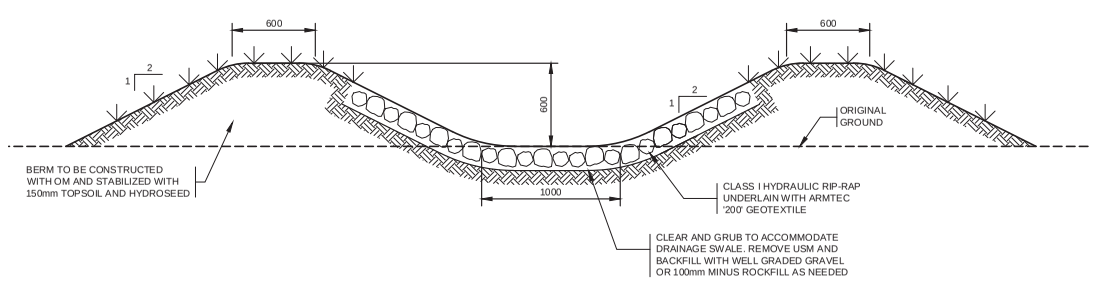

DRAINAGE SWALE (3 / D2)
SCALE: 1:25

PINNACLE ENGINEERING LIMITED

NOTES

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pegnl
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NEWCO METAL
STORMWATER DETENTION

SHEET TITLE
CONSTRUCTION DETAILS - 02

PROJECT NO.
18004

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SDB	TM
DATE	DRAWING NO.
FEBRUARY 2018	D2
SCALE: AS SHOWN	