



May 2011

**AMENDMENT #1
DURHAM YORK ENERGY CENTRE**

**Design and Operations Report
in Support of Environmental
Protection Act Section 27
Certificate of Approval (Waste)
Application**

Submitted to:

Ontario Ministry of the Environment
Director Section 27
Environmental Assessment and Approvals Branch
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REPORT

Report Number: 10-1151-0343 (5000)- Amendment # 1





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Figure 21- Typical Grizzly Building Layout

Drawing C-0110 – Overall Site Plan



1.0 INTRODUCTION

The following are additions and clarifications to the Golder Associates Ltd (Golder) Design and Operations Report (March 2011).

Section 3.3, Para 1:

Replace the 2nd sentence with:

“Normal truck access to the site, including MSW and reagent delivery and residue transport ,will be up to six (6) days a week between 7:00am to 7:00pm, except on statutory holidays. The proposed operating schedule may vary depending on demand and Facility needs.”

Section 5, Para 6:

Replace the 4th Sentence with:

“The Waste Water Holding Tank will be sized to hold approximately the water from one boiler (approx. 100m³, 26,500gal).”

Section 5, Para 6:

Add to the end of the paragraph:

“The Waste Water Holding Tank will have level controls and be vented to the atmosphere.”

Section 5.1, Table 3:

Change “Waste Water Storage Tank” to “Waste Water Holding Tank” in Stream 38



Section 5.2, Para 1:

After the first sentence, insert the following:

“It is not intended that the refuse pit be maintained at a completely full condition for extended periods of time. The refuse pit’s function is to accommodate the fluctuations in refuse delivery schedule and irregular refuse treatment rates (e.g. during thermal treatment unit outages, etc).”

Section 5.2, Para. 2:

Add bullet for “Unacceptable Waste”

Section 5.2, Para 5:

Replace paragraph with:

“Recovered ferrous and non-ferrous metals are stored in bunkers, also located in the residue building. Approximately 106m³ of storage capacity will be provided for ferrous metals and approximately 100m³ for non-ferrous metals. This results in a maximum storage capacity of approximately 77 tonnes of ferrous metals and 120 tonnes of non-ferrous metal storage based on the individual densities referenced in Section 8.1.”

Section 5.2, Para. 6:

Replace paragraph with:

“Incoming non-hazardous unacceptable waste will either be stored in two roll-off bins (maximum 30m³ each) located on the tipping floor (Refer to Figure 13 Rev 1 for estimated bin location) or stored in the appropriate bunker in the Residue Building. The appropriate bunker (residue, non-ferrous metal or ferrous metal bunker) will be determined by the nature of the waste upon visual inspection by facility staff. If tipping hall containers are utilized, containers will be removed and replaced when the container is full. If non-hazardous unacceptable waste is stored in the Residue Building, it will be loaded with the associated residue or metals into a covered trailer on a regular basis and will be sent to a licensed landfill in New York State, or an alternative approved disposal facility. Please also refer to Appendix D on SOPs pertaining to the handling of unacceptable waste.”



Section 5.3:

Add the following paragraphs to the end of the section:

“The maximum number of waste delivery trucks expected to arrive at the site daily is 65 trucks. The maximum number of waste delivery trucks expected to arrive at the site during the peak hour is 7 trucks. The truck traffic flow during the peak hour will not result in a queue at the Facility. The maximum number of delivery trucks expected is based on the availability of delivery trucks and seasonal fluctuations of the waste stream.

The maximum number of residue trucks expected to depart the facility is 20 daily and 2 hourly. The residue removal schedule takes into account a 5 day workweek removal rate with a margin for fluctuations based on holidays, weather, truck availability and disposal site availability. The residue generate rate is based on MSW having the maximum estimate percentage of inert material.

The maximum number of delivery trucks expected to access the site daily is 5 and 1 hourly. “

Section 5.5:

Add the following paragraph to the end of the section:

“Non-hazardous MSW generated by the Facility and its staff will also be accepted at the Facility. MSW generated by the Facility will be subject to applicable Regional waste diversion policies.”

Section 5.7:

Add the following paragraph as the second paragraph to the section:

“Although no hazardous waste is expected to enter the site, when identified it will be handled according to regulations and guidelines. Depending on the quantity and nature of the hazardous waste, the truck may be reloaded and its contents returned to the originator of the waste for proper disposal or the waste may be handled appropriately immediately in the tipping hall. If the waste is allowed to be moved, it will be appropriately secured and isolated in the curbed area in the tipping building.”



Section 5.7, Para. 1:

Replace the last sentence with:

“ A 2.5m x 3m curbed area will be located on the south-west side of the tipping hall (see Figure 13) for temporary storage of unacceptable waste. The curbed area is a circumferentially curbed, impervious, reinforce concrete area, and it will not have drains.”

Section 5.8, Para. 2:

Add after first sentence:

“This results in a slope of approximately 0.5%. “

Section 5.8, Para 4:

Insert between first and second sentence:

“There will be no truck wash down area on site.”

Section 5.8, Para 6:

Add the following sentences at the end of the paragraph:

“The design of the louvers will be based on a face velocity of 90m/min with both boilers operating at MCR conditions when the tipping hall doors closed.”



Section 5.9, Para 1:

Replace Paragraph 1 with:

“The refuse pit is constructed of concrete up to the charging floor level on all four sides except above the tipping bays and is designed to prevent seepage of water into or out of the pit. The refuse pit design is based on a thorough understanding of the local civil conditions and a design by an engineering firm with experience in this subject. The final design will be generally consistent with designs at existing facilities which have proven over time to remain without cracks.

In regards to design details, the walls of the refuse pit will be constructed of minimum 41MPa reinforced concrete and will be approximately 1m thick. All wall joints will be equipped with water stops. A water stop is a section of flexible waterproof material placed at any joint in concrete to prevent the passage of water. No leak monitoring is proposed for the refuse storage pit.

The refuse pit enclosure roof elevation includes space for the two overhead, traveling cranes. The structure also includes a concrete charging floor with feed hoppers. The refuse enclosure is separated from the boiler enclosure by a wall. This wall will be constructed of steel framing and bracing and will be composed of metal paneling. This wall not only restricts any particulate matter generated in the Refuse Building from migrating to the Boiler Building, but it also acts as a boundary for the Refuse and Tipping Buildings from which the combustion air is drawn.”

Section 6.1.3, Para 1:

Add the following sentences to the end of the paragraph:

“The Facility will have a similar cross section to Exhibit 3. The ash discharger will be located above the floor elevation as shown on the Exhibit 3.”

Section 7.3, Para 1:

Replace the last sentence with:

“The storage silos for lime and recirculated residue (if applicable) will be located inside the Facility enclosure. The storage silo for carbon will be located outside of the Facility enclosure, adjacent to the APC Building.”



Section 8, Para 1:

Add the following sentences to the end of the paragraph

“There will be no truck wash down area on site.”

Section 8.2

Add the following paragraph after the second paragraph:

“The grizzly scalper is a heavy duty screen for separation of large objects (approx. 200mm or greater) in the bottom ash stream. Large objects are taken out of the stream to increase metals recovery percentages and prevent damage to upstream equipment. After being separated by the grizzly, the large objects fall to the floor in front of a pushwall at the base of the grizzly. The objects are then scooped up using a front end loader and transported to the Residue Building. The overs will be visually inspected to determine the material type and deposited in the appropriate bunker (residue, ferrous or non-ferrous) with the balance of the respective material. The overs are part of the residue or metals recovery stream and will be transported to the proper disposal facility with the balance of the respective material. Please refer to Figure 21 for a typical Grizzly Building layout. The Grizzly Building proposed for the Facility will be laid out similarly. Please also refer to Figures 17 and 18 of the Application for the residue and metals storage bunker layout.”

Section 8.3.1, Para 1:

Replace the last sentence in the paragraph with the following:

“After 21 days, the ash is stabilized and ready for transport to an appropriately licensed disposal facility in New York State or other alternative approved disposal facility.”



Section 8.5.4, Para 1:

Replace the second sentence with:

“The aqueous ammonia storage tank and containment area and the aqueous ammonia unloading area will be designed in accordance with Guidelines for Environmental Protection Measures at Chemical and Waste Storage Facilities (May, 2007) and other applicable requirements.”

Section 8.5.4, Para 1:

Add the following sentence to the end of the paragraph:

“The aqueous ammonia containment area will be constructed of reinforced concrete.”

Section 8.5.4, Para 2:

Add the following sentence to the end of the paragraph:

“The unloading area will be adjacent to the ammonia tank.”

Section 10.3, Para 2:

Add the following to the third bullet point:

“There will be no drains located in the Tipping Hall or Residue Building.”



Section 10:

Add Section 10.5:

“10.5 Grey water Drains, Trenches and the Settling Basin

Building floors will be periodically washed down to clean away dust and small debris accumulation. The floors will be sloped to a series of trenches and drains that will catch and direct the wash down water to the settling basin. Water will flow from the extreme east and west side of the buildings to a centrally located trench and from the north end of the buildings to the south where the settling basin is located. The Boiler Building will have a trench extending across it (east to west) near the ash dischargers and a trench running north to south close to the center of the building. This trench running north to south will extend all the way through the APC Building between the scrubbers and the baghouses. The APC building will also have an east to west oriented trench located near the scrubbers. The floor drains from the Turbine Building and Maintenance Building will drain to the nearest trench. The centrally located trench running north to south will exit the south end of the APC building and continue to the settling basin. This external portion of the trench will be covered, and the finished grade will be sloped away from the trench.

The central trench leads to a settling basin, which is used remove the solids from the water in order for it to be reused in the process, specifically in the ash discharger. Upon entering the settling basin, the water flows through a basket to remove coarse solids. The basket will be manually removed and cleaned out, as necessary. Any fine solids left in the water settle out on the bottom of the settling basin. Periodically a vacuum truck will be used to clean out the bottom of the basin. The basin will also include an oil skimmer partition that will contain any oil residue in the water. A portable oil skimmer will be used to remove the oil as necessary. The water is then pumped by a skimmer pump to the ash dischargers. The location of the pumps will be next to the basin on a concrete pad that is sloped towards the basin (See Figure 19).

The settling basin will be made of reinforced concrete with water stops at all of the joints (Water stops are illustrated on Figure 19). The basin will be below grade, but it will have a lip or curb above grade to avoid rain water runoff and debris infiltration. It will be open to the atmosphere. The storage capacity of the basin will be approximately 38,000 liters (10,000 gallons). The settling basin will have liquid level control to control makeup to the basin.

Due to the low organic matter content of the solids being filtered in the settling basin, no odour issues are expected. Additionally, none of our currently operating facilities with an “open” design have experienced an issue with odour from the settling basin. “



Section 13.3:

Add the following paragraph to the end of the section.

“The design of the louvers for the tipping hall ensures slight negative pressure at the doors and louvers where air enters the tipping hall. In addition, the Covanta standard configuration of drawing combustion air from the doors and louvers, through the tipping hall across the refuse pit and up to the combustion air inlets located over the refuse pit has proven successful at Covanta’s currently operating facilities. There are no known odour complaints from any of the currently operating facilities with this configuration. As such, no pressure sensor is planned to be located in the tipping hall for odour control purposes. “

Appendix D, Section 2:

Change Section 2 Heading from “SOPs for Handling of Rejection Material and Bulk Waste” to “SOPs for Handling of Unacceptable Waste”

Appendix D, Section 2.2:

Replace the Table of Unacceptable Waste with:

Type of Waste	Examples and/or Definition
BATTERIES	dry cells, mercury batteries, and vehicle batteries.
WHITE GOODS	refrigerators, freezers, stoves, dishwashers, washers, and dryers.
BULKY ITEMS	mattresses and box springs; hot water heaters and storage tanks; tires; air conditioners; oil storage tanks; propane tanks; gas barbecues; swing sets; vehicle frame parts; engines; crank cases; transmissions; lawn equipment; snow blowers; bicycles; file cabinets; furniture; rolled carpets; metal piping; fuel containers; construction and demolition debris; and logs larger than 2 inches in diameter or 4 feet long.
REGULATED MEDICAL WASTE	Any waste generated in the diagnosis, treatment, or immunization of humans or animals. It includes pathological waste (human tissue, body parts, and specimens); blood waste (liquid or dried blood and blood saturated products); animal carcasses; and sharps (used or unused hypodermic needles, suture needles, syringes, scalpel blades, and pipettes).



Figures

Replace the following figures with their appropriate revisions.

Figure 13(Rev1)

Figure 14 (Rev1)

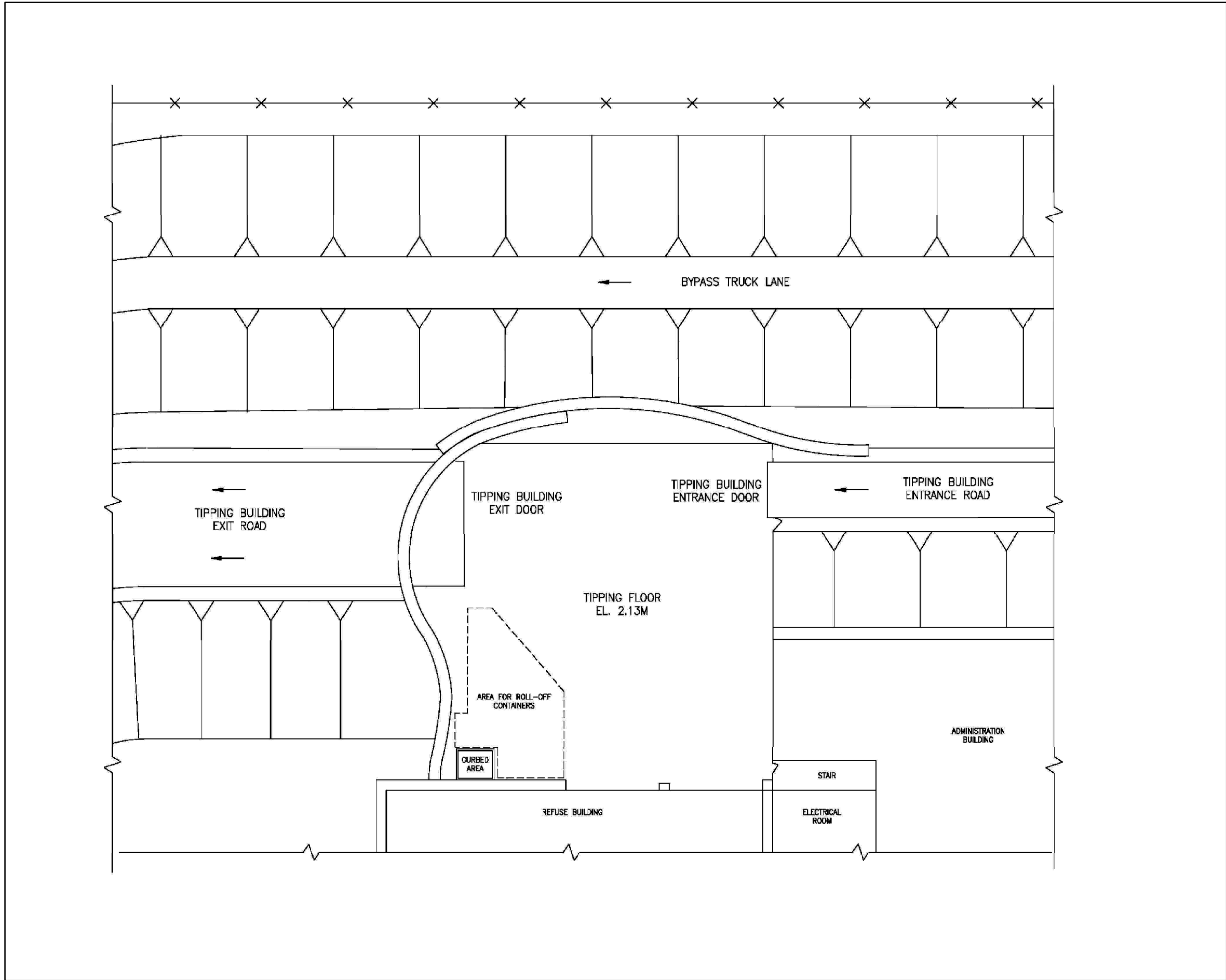
Figure 21: Typical Grizzly Building Layout

Drawing C-0110 – Overall Site Plan



FIGURES


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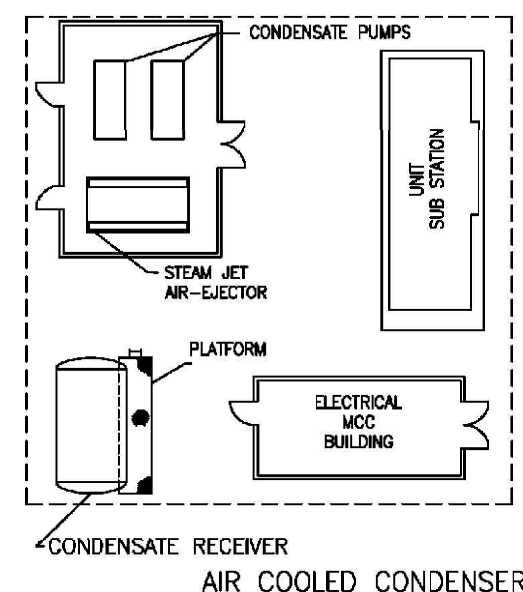
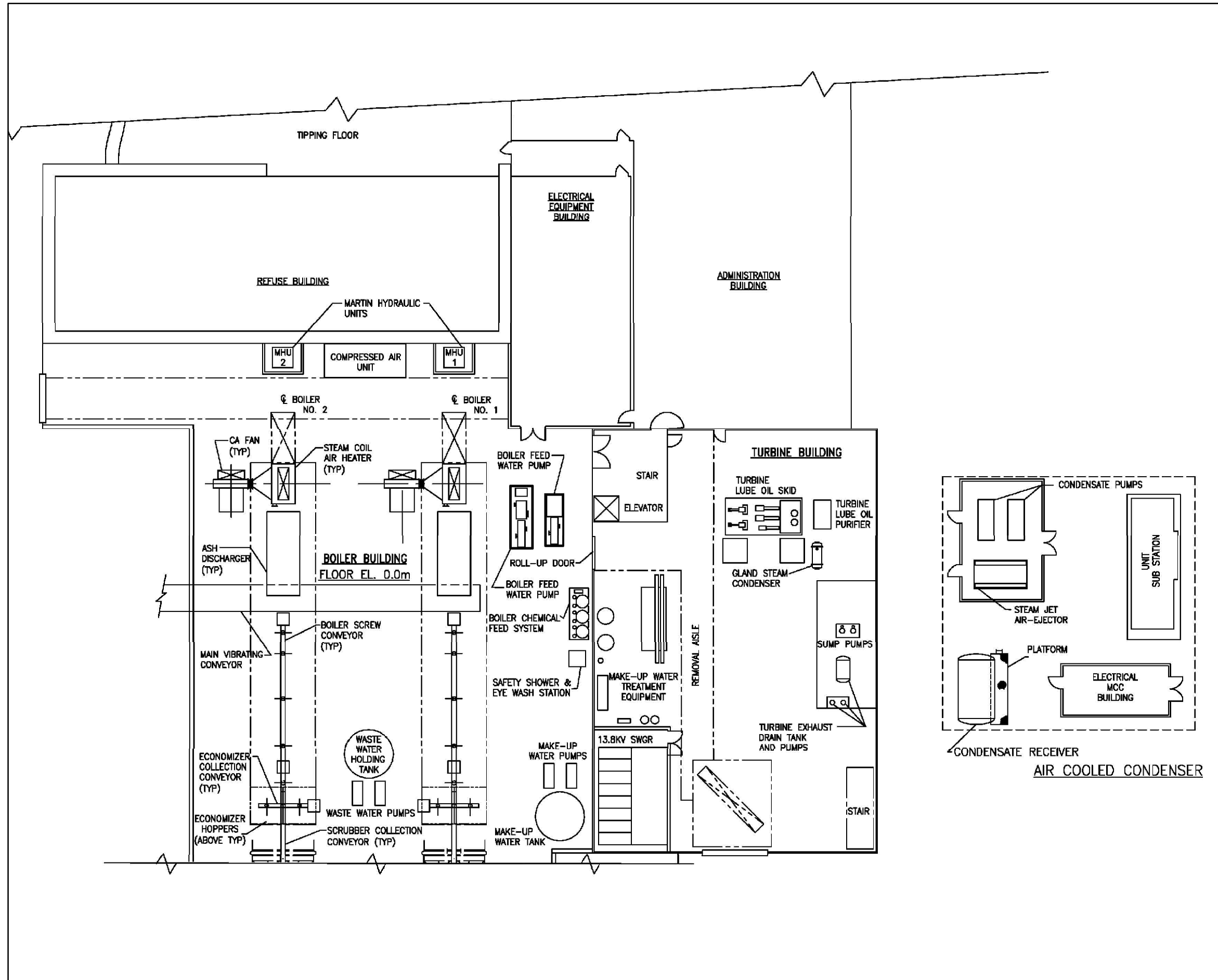
LEGEND



REFERENCE

PROJECT	DURHAM YORK ENERGY CENTRE		
TITLE	PRELIMINARY TIPPING FLOOR LAYOUT		
 Mississauga, Ontario	PROJECT NO.	10-1151-0343	SCALE AS SHOWN
	DESIGN	PRM	25 Aug. 2010
	GIS	PRM	24 May. 2011
	CHECK	PN	24 May. 2011
	REVIEW	AC	24 May. 2011
			FIGURE: 13

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LEGEND



REFERENCE


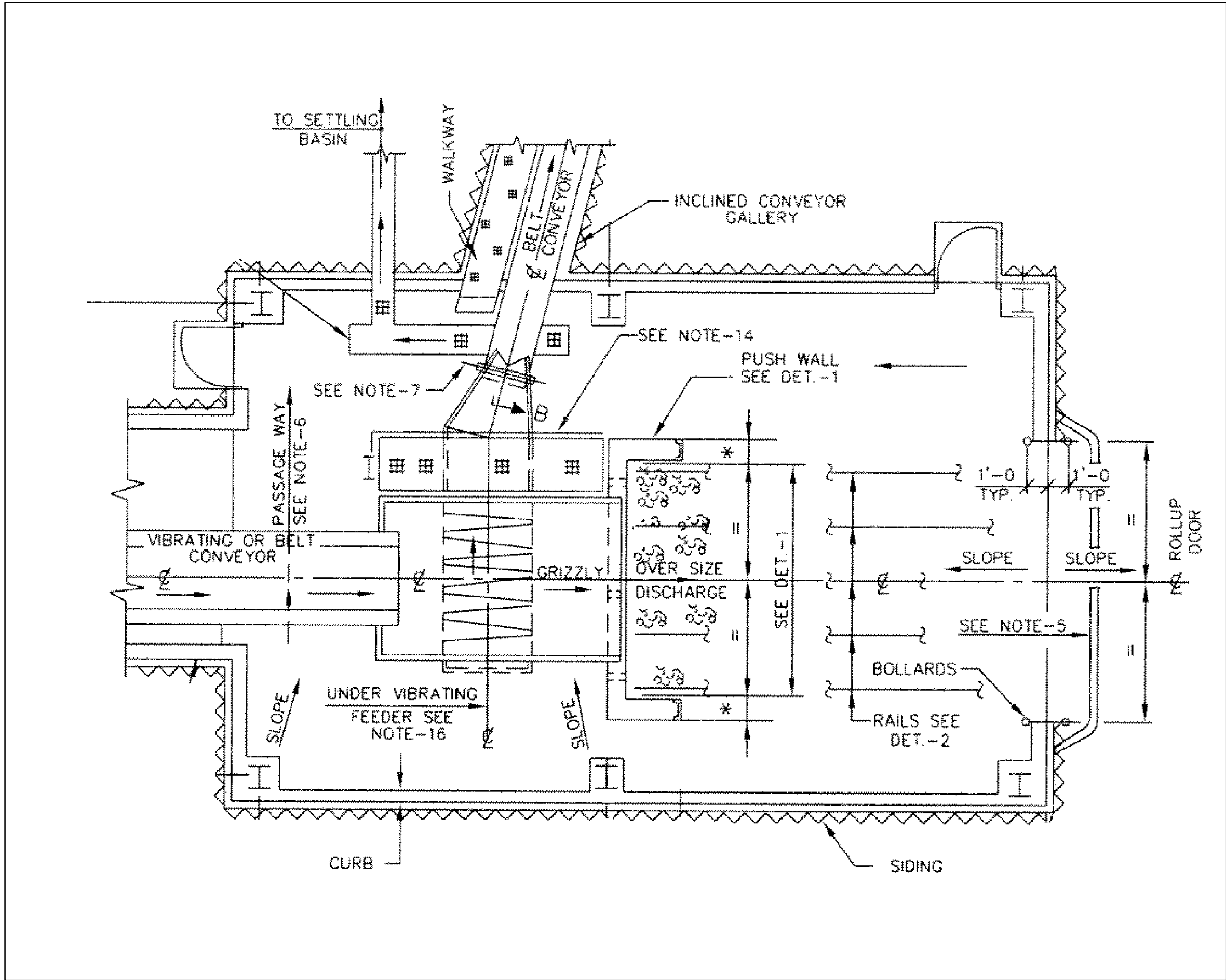
PROJECT		DURHAM YORK ENERGY CENTRE	
TITLE		PRELIMINARY BOILER, TURBINE GENERATOR AND AIR COOLED CONDENSER AREA (ELEVATION. 0.0 METRES)	
 Golder Associates Mississauga, Ontario	PROJECT NO.	10-1151-0343	SCALE AS SHOWN
	DESIGN	PRM 25 Aug. 2010	REV. 0.0
	GIS	PRM 24 May. 2011	
	CHECK	PN 24 May. 2011	
	REVIEW	AC 24 May. 2011	

FIGURE: 14


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LEGEND



REFERENCE

PROJECT	DURHAM YORK ENERGY CENTRE		
TITLE	TYPICAL GRIZZLY BUILDING LAYOUT		
 Golder Associates Mississauga, Ontario	PROJECT NO.	10-1151-0343	SCALE AS SHOWN
	DESIGN	PRM	25 Aug. 2010
	GIS	PRM	24 May. 2011
	CHECK	PN	24 May. 2011
	REVIEW	AC	24 May. 2011
			FIGURE: 21

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.

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