

RECEIVED

MAY 17 2012

DIVISION OF AIR
RESOURCE MANAGEMENT

**MINOR SOURCE APPLICATION TO
PERMIT TWO WET SCRUBBERS**

**North Broward Resource Recovery Facility
Pompano Beach, Florida**

Project No. 0112120-011-AC

Prepared For: Wheelabrator North Broward, Inc.
2600 NW 48th Street
Pompano Beach, FL 33073

Submitted By: Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA

Distribution: 4 copies – FDEP
2 copies – Wheelabrator North Broward, Inc.
1 copy – Golder Associates Inc.

May 2012

123-87568

**A world of
capabilities
delivered locally**





0112120011-AC

RECEIVED

MAY 17 2012

DIVISION OF AIR
RESOURCE MANAGEMENT

May 16, 2012

123-87568

Mr. Jeff Koerner, P.E., Program Administrator
Office of Permitting and Compliance
Division of Air Resources Management
2600 Blair Stone Road, MS 5500
Tallahassee, Florida 32399-2400

RE: WHEELABRATOR NORTH BROWARD INC. – NORTH BROWARD RESOURCE RECOVERY FACILITY (FACILITY 0112120) – METAL RECOVERY FACILITY MINOR SOURCE AIR CONSTRUCTION PERMIT

Dear Jeff:

Golder Associates Inc. (Golder), on behalf of Wheelabrator North Broward Inc., is submitting this minor source air construction permit application for two wet scrubbers to be installed in the metal recovery facility. The metal recovery facility was previously approved by the Department as a modification to the Site Certification (Case No. PA 86-22J) for the North Broward Resource Recovery Facility (NBRRF) but did not include the installation of wet scrubbers. An amendment request is being submitted concurrently to the Siting Coordination Office (SCO) to include these scrubbers and other minor changes in the final design of the facility.

The two scrubbers are being added to maintain indoor air quality and for employee comfort and safety. These scrubbers are similar to the wet scrubber currently authorized by the Department in the Title V Air Operation Permit as Emission Unit 006 (Permit No. 0112120-010-AV, Section III, Subsection B). The Title V permit states: "This scrubber has not been installed, but may be installed in the future should the facility management deem it necessary for ash building indoor air quality control." Wheelabrator plans to install this scrubber concurrently with the addition of the metal recovery facility and the scrubber will be a 6,000 standard cubic feet per minute (scfm) Tri-Mer® Corporation Whirl Wet® high efficiency dust collector, identified as WDC-1, that will collect fugitive dust within the existing bottom ash loading area.

If there are any questions please contact me by phone or email (kkosky@golder.com) or Chuck Faller, Environmental Safety and Compliance Director for Wheelabrator North Broward Inc. (954-971-8701; cfaller@wm.com). The Department's expeditious review is appreciated.

Sincerely,

GOLDER ASSOCIATES INC.

Sal Mohammad
Senior Project Engineer

Kennard F. Kosky, P.E.
Principal Engineer

cc: Chuck Faller, Wheelabrator North Broward Inc.
Jim Connolly, Wheelabrator Technologies Inc.
Cindy Mulkey, FDEP SCO

Enclosures

KFK/tz

Y:\Projects\2012\123-87568 WBI\Final\AC App\WNBRRF AC Application Cover Letter for Metal Recovery Scrubbers.docx

Golder Associates Inc.

6026 NW 1st Place
Gainesville, FL 32607 USA

Tel: (352) 336-5600 Fax: (352) 336-6603 www.golder.com



Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

Golder, Golder Associates and the GA globe design are trademarks of Golder Associates Corporation



RECEIVED

MAY 17 2012

DIVISION OF AIR
RESOURCE MANAGEMENT

May 16, 2012

123-87568

Ms. Cindy Mulkey, Program Administrator
Siting Coordination Office (SCO)
3900 Commonwealth Blvd. MS 48
Tallahassee, Florida 32399-3000

RE: WHEELABRATOR NORTH BROWARD INC. – NORTH BROWARD RESOURCE RECOVERY FACILITY – PA86-22J – METAL RECOVERY FACILITY AMENDMENT

Dear Ms. Mulkey:

Golder Associates Inc. (Golder), on behalf of Wheelabrator North Broward Inc., is submitting this amendment to the SCO to present updated information on the final design of the metal recovery facility that was previously approved by the Department as a modification to the Site Certification (Case No. PA 86-22J) for the North Broward Resource Recovery Facility (NBRRF). This modification authorized the construction and operation of a metal recovery facility (see Section A: General Conditions, I. Scope B). This approval was based on the Site Certification Modification Petition (Petition) dated January 2010 and prepared by Golder, which described the project and addressed the requirements of 403.516(1)(c), Florida Statutes (F.S.). The information contained in this document is in accordance with Rule 62-17.205(1), Florida Administrative Code (F.A.C.). Amendments require appropriate revisions to the application text, figures, and photographs to reflect the changes. It is understood that this request for such post-certification amendments shall be processed in accordance with Section 403.5113, F.S. The changes to the metal recovery facility as identified in the Petition are presented below, in the same order as that presented in the original Petition.

- **Project Description** – There are two changes in the final design of the metal recovery facility that are as follows:
 - Addition of a vibrating conveyor (shown as VC-6 on the attached Figure 1), an eddy current separator for ash sized less than 3/8 of an inch (shown as ECS-2), and a non-ferrous bunker for metals less than 3/8 of an inch. The amount of ash will not change; however, it is estimated that the addition of ECS-2 will increase the total amount of non-ferrous metal recovered by 0.3 ton per hour (tph) to a total of 0.6 tph (see Figure 1).
 - Addition of two 17,000 standard cubic feet per minute (scfm) Tri-Mer® Corporation Whirl Wet® high efficiency dust collectors identified as WDC-2 and WDC-3 on the attached Figure 1. WDC-2 will collect fugitive dust from the finger screen, vibrating conveyors, and magnetic separator, while WDC-3 will collect fugitive dust generated from storage and loading areas in the metal recovery building (see Figure 1). These dust collectors are being added to maintain indoor air quality within the metal recovery facility. A minor source air construction permit is being submitted concurrently to the Department's Office of Permitting and Compliance with this amendment request. A complete description is included with the application, including manufacturer information and estimated emissions. The dust collectors use water to collect dust from air and blowdown from WDC-2 and WDC-3; this water will be routed to the process sump pump identified previously. This water is reused within the facility and not discharged.
- **Metal Recovery Facility Building Layout and Site Plan** – There are no changes to the location of the metal recovery facility. Figure 2 shows the partial site plan for the Metal

Y:\Projects\2012\123-87568\WB\Final\SCA\WNBRRF_Metal Recovery Amendment Request.docx

Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA

Tel: (352) 336-5600 Fax: (352) 336-6603 www.golder.com



Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

Golder, Golder Associates and the GA globe design are trademarks of Golder Associates Corporation

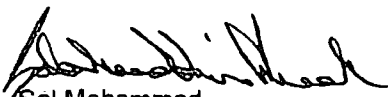
Recovery Facility that now includes a small area for non-ferrous storage. The final design of the building showing external views is presented in Figures 3 through 5.

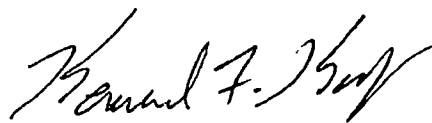
- Metal Recovery Facility Chapter 62-701 F.A.C. Information – Except as presented in the preceding discussion, there is no change in the Chapter 62-701 F.A.C. requirements from that presented in the original Petition that addressed Facility description, site plan, description of operation, design requirements, loading, on-site storage areas, unmarketable recyclable materials and residue, boundary survey, operation plan, closure plan, financial assurance, stormwater, and recordkeeping.
- Air Emissions – A minor source air construction permit is being requested for the wet scrubbers being added to maintain indoor air quality. The application is being submitted to the Division of Air Resource Management, Office of Permitting and Compliance under separate cover.
- Water Use – The Whirl Wet® scrubbers recycle water and only require water lost due to evaporation and particulate removal (i.e., blowdown). Water lost is compensated by automatic water level controls with makeup from the existing process water supplies. There are no changes necessary to the conditions of certification to accommodate the water used in the scrubbers.
- Stormwater – The stormwater flows do not change from the original Petition since the impervious areas identified in the Petition will not change.
- Ash Management Plan – No change from the original Petition.
- Transportation – No change from the original Petition.
- Local Approvals – No change from the original Petition.
- Conditions of Certification – There are no changes necessary to the Conditions of Certification in PA86-22J.

In summary, the changes presented above are minor and do not modify any Conditions of Certification. All changes described in this amendment request are within the metal recovery facility previously identified in the original Petition and there are no changes to the quantities of ash processed. While there will be the addition of wet scrubbers for ventilation dust control, these are being installed for indoor air quality and a minor air construction permit application is being submitted to the Department. The air emission sources are referenced in the Conditions of Certification as part of the Title V Air Operation Permit. As a result, this request appears to be a postcertification amendment to the original approval of the metal recovery facility.

If there are any questions please contact me by phone or email (kkosky@golder.com) or Chuck Faller, Environmental Safety and Compliance Director for Wheelabrator North Broward Inc. (954-971-8701; cfaller@wm.com). The Department's expeditious review is appreciated.

GOLDER ASSOCIATES INC.


Sal Mohammad
Senior Project Engineer

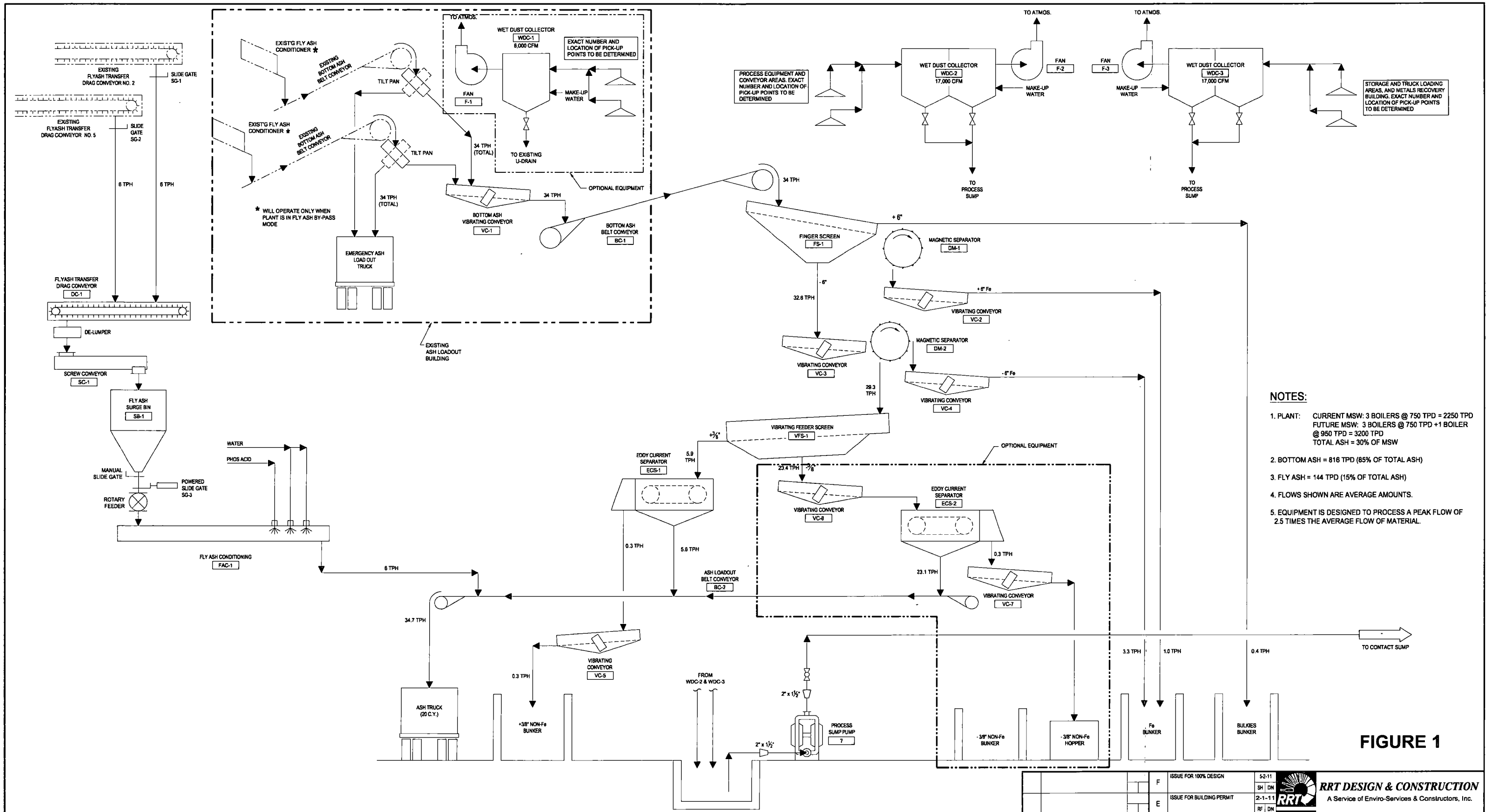

Kennard F. Kosky, P.E.
Principal

cc: Chuck Faller, Wheelabrator North Broward Inc.
Jim Connolly, Wheelabrator Technologies Inc.
Joe Lurix, Administrator, Waste Management Program, FDEP SE District
Jeff Koerner, FDEP DARM

Enclosures

KFK/tz

FIGURES



- NOTES:**
1. PLANT: CURRENT MSW: 3 BOILERS @ 750 TPD = 2250 TPD
FUTURE MSW: 3 BOILERS @ 750 TPD + 1 BOILER @ 950 TPD = 3200 TPD
TOTAL ASH = 30% OF MSW
 2. BOTTOM ASH = 816 TPD (85% OF TOTAL ASH)
 3. FLY ASH = 144 TPD (15% OF TOTAL ASH)
 4. FLOWS SHOWN ARE AVERAGE AMOUNTS.
 5. EQUIPMENT IS DESIGNED TO PROCESS A PEAK FLOW OF 2.5 TIMES THE AVERAGE FLOW OF MATERIAL.

FIGURE 1

rml 3573F001
04-16-12 @ 07:17

CASE ENGINEERING, INC
5925 IMPERIAL PARKWAY, SUITE 226
MULBERRY, FLORIDA 33860
CERTIFICATION OF AUTHORIZATION 2270

PROFESSIONAL ENGINEER **DAVID NEDERVELD**
PROFESSIONAL LICENSE NUMBER **18820**

F	ISSUE FOR 100% DESIGN	5/2/11
		SH DN
E	ISSUE FOR BUILDING PERMIT	2-1-11
		RF DN
D	ISSUE FOR GMP	12-3-10
		RF DN
C	ISSUE FOR FDEP PERMIT	1/11/10
		MH DN
B	ISSUE FOR PERMIT	12/09/10
		MH DN
REV	DESCRIPTION	DATE
	PROPRIETARY DATA	5/2/11
	THIS DOCUMENT IS THE PROPERTY OF ENVIRO-SERVICES & CONSTRUCTORS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. ANY REPRODUCTION OR UNAUTHORIZED USE WITHOUT WRITEN CONSENT OF ENVIRO-SERVICES & CONSTRUCTORS, INC. WILL BE SUBJECT TO PROSECUTION.	
	RRT Design & Construction ENGINEERING ARCHITECTURE CONSTRUCTION 133 English Road Middletown, NY 11767	607-756-1888 607-756-1884

RRT DESIGN & CONSTRUCTION
A Service of Enviro-Services & Constructors, Inc.

**WHEELABRATOR NORTH BROWARD
METALS RECOVERY SYSTEM**

PROCESS FLOW SHEET

DRAWN	BY	DATE	PROJ. No:	SCALE:
CHECKED	DWL/MLH	5/23/08	633-008	NONE
DESIGNED				
APPROVED				

CAD FILE: 3573F001
SHEET SIZE: D-24x36

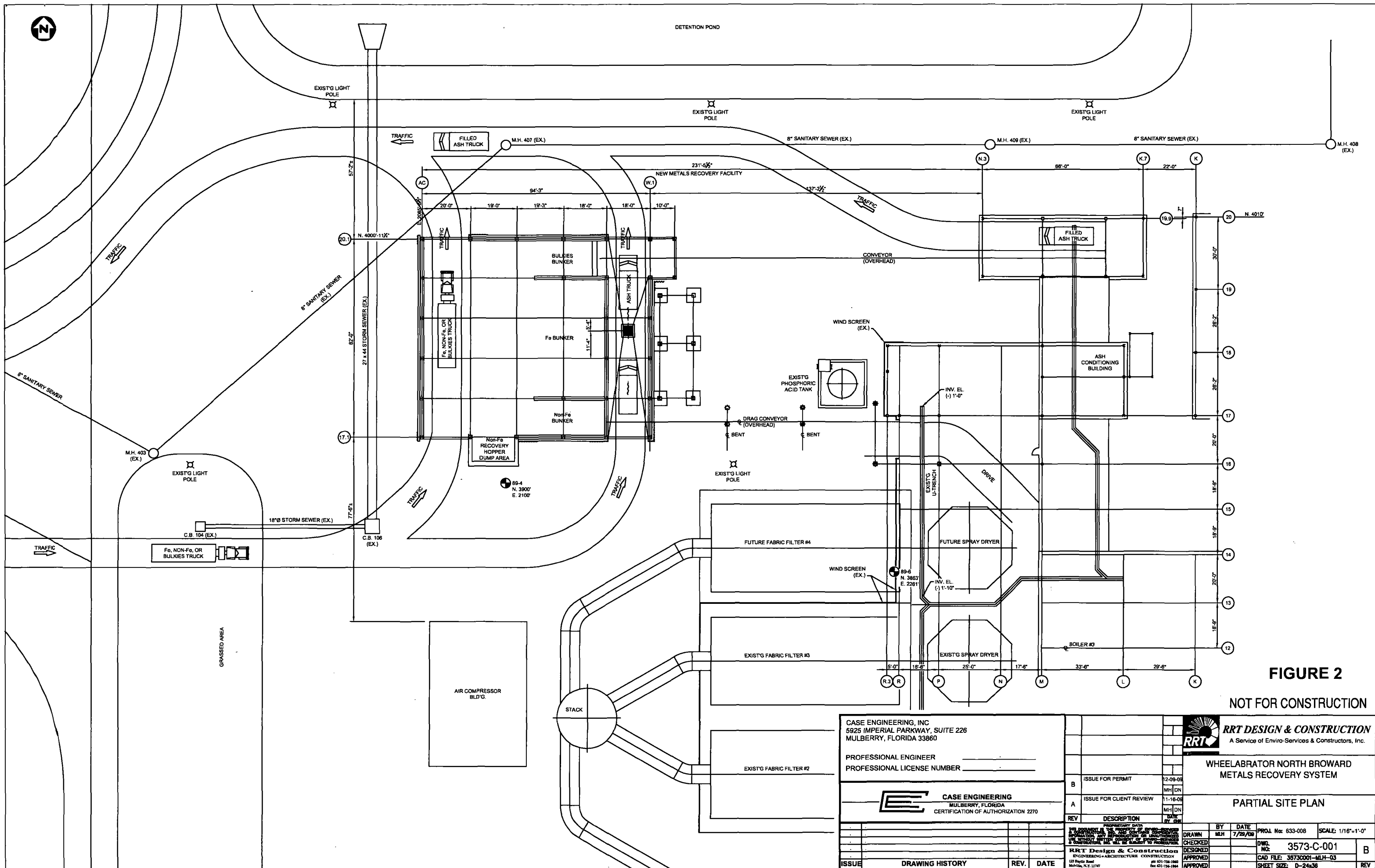


FIGURE 2

NOT FOR CONSTRUCTION



**WHEELABRATOR NORTH BROWARD
METALS RECOVERY SYSTEM**

PARTIAL SITE PLAN

CASE ENGINEERING, INC
5925 IMPERIAL PARKWAY, SUITE 226
MULBERRY, FLORIDA 33860

PROFESSIONAL ENGINEER _____
PROFESSIONAL LICENSE NUMBER _____



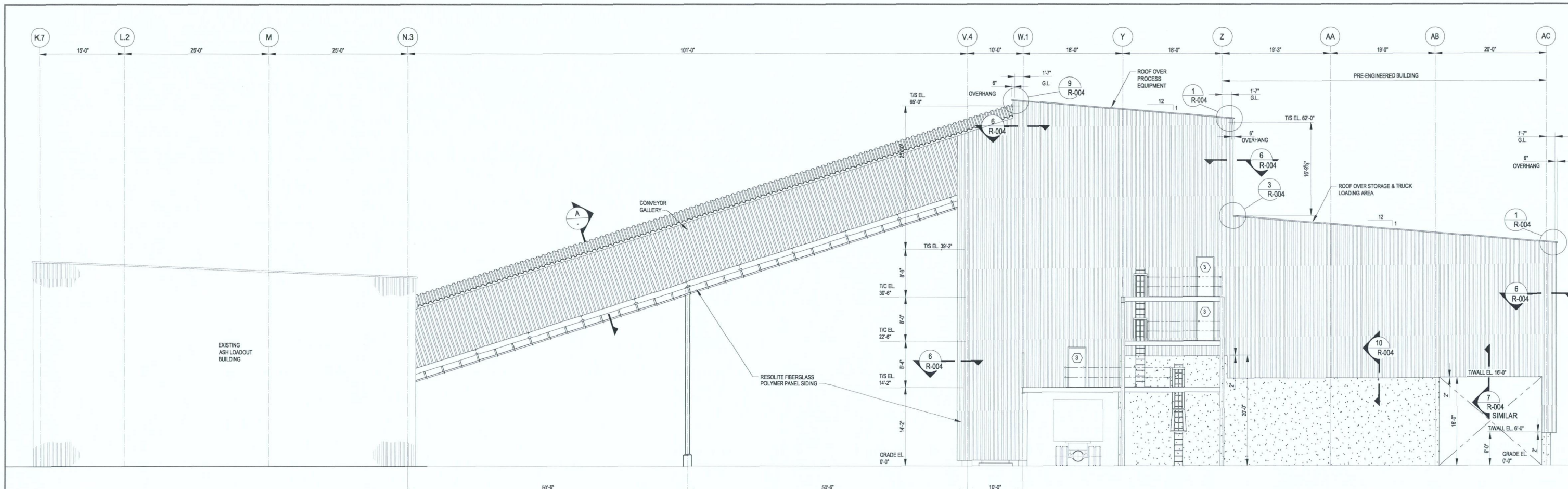
REV	DESCRIPTION	DATE
B	ISSUE FOR PERMIT	12-09-08
MH	DN	
A	ISSUE FOR CLIENT REVIEW	11-18-08
MH	DN	

BY	DATE	PROJ. No:	SCALE:
MH	7/29/08	633-008	1/16"=1'-0"
CHECKED:		DWG. NO.:	
DESIGNED:		CAD FILE:	
APPROVED:		SHEET SIZE:	

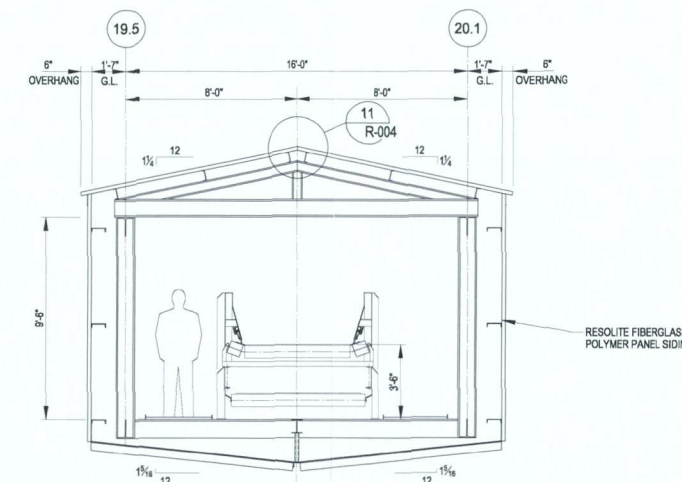
ISSUE	DRAWING HISTORY	REV.	DATE

REV	DATE	BY	DATE

B
REV

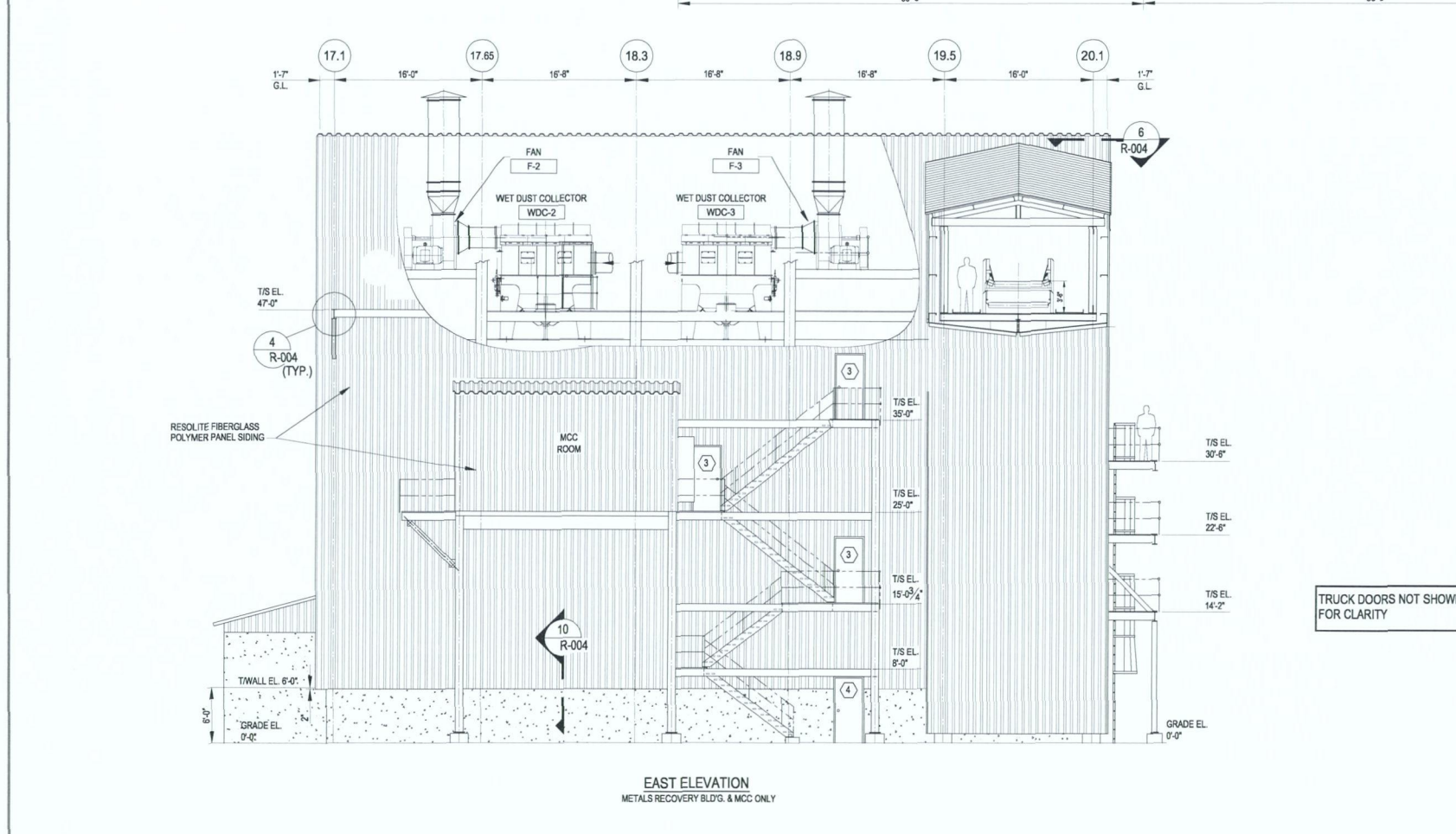


NORTH ELEVATION



SECTION A

FIGURE 3



EAST ELEVATION
METALS RECOVERY BLDG. & MCC ONLY

NOTES:
1. ALL NEW SIDING IS TO BE OPAQUE (CRFS25A,1040).
2. FOR GENERAL NOTES AND DOOR SCHEDULE SEE DWG. #3573-R-004.

CASE ENGINEERING, INC
5925 IMPERIAL PARKWAY, SUITE 226
MULBERRY, FLORIDA 33860

PROFESSIONAL ENGINEER DAVID L. NEDERVELD
PROFESSIONAL LICENSE NUMBER 16820

CASE ENGINEERING
MULBERRY, FLORIDA
CERTIFICATION OF AUTHORIZATION 2270

RRT DESIGN & CONSTRUCTION
A Service of Enviro-Services & Constructors, Inc.

C ISSUE FOR 100% DESIGN 5-2-11
RE DN

B ISSUE FOR BUILDING PERMIT 02/01/11
KCDLN

A ISSUE FOR GMP 12-3-10
KCDLN

WHEELABRATOR NORTH BROWARD
METAL RECOVERY SYSTEM
ARCHITECTURAL

ELEVATIONS
NORTH & EAST

REV	DESCRIPTION	DATE	BY	CHK

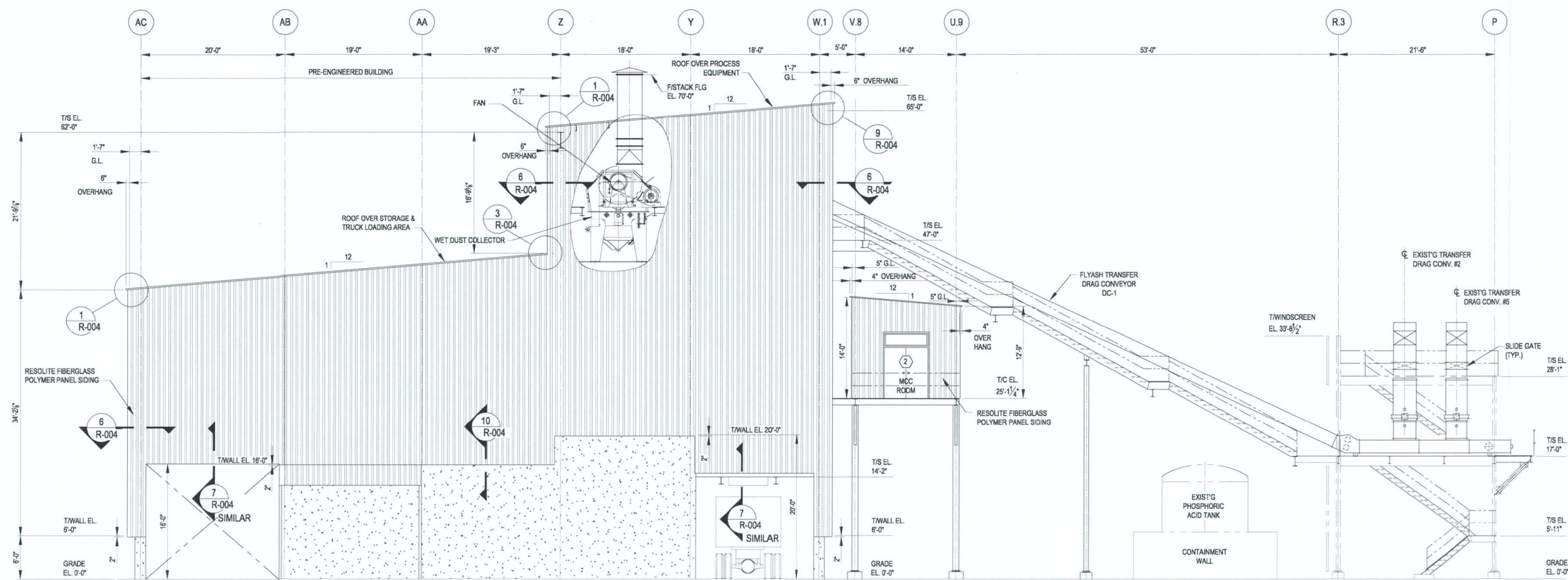
BY	DATE	PROJ. No.	SCALE
JKC	10/12/10	633-008	1/8" = 1'-0"

DRAWN	DESIGNED	APPROVED	DWG. NO.	CAD FILE	SHEET SIZE	REV
JKC	JKC	JKC	3573-R-003	3573R003	D-24x36	C

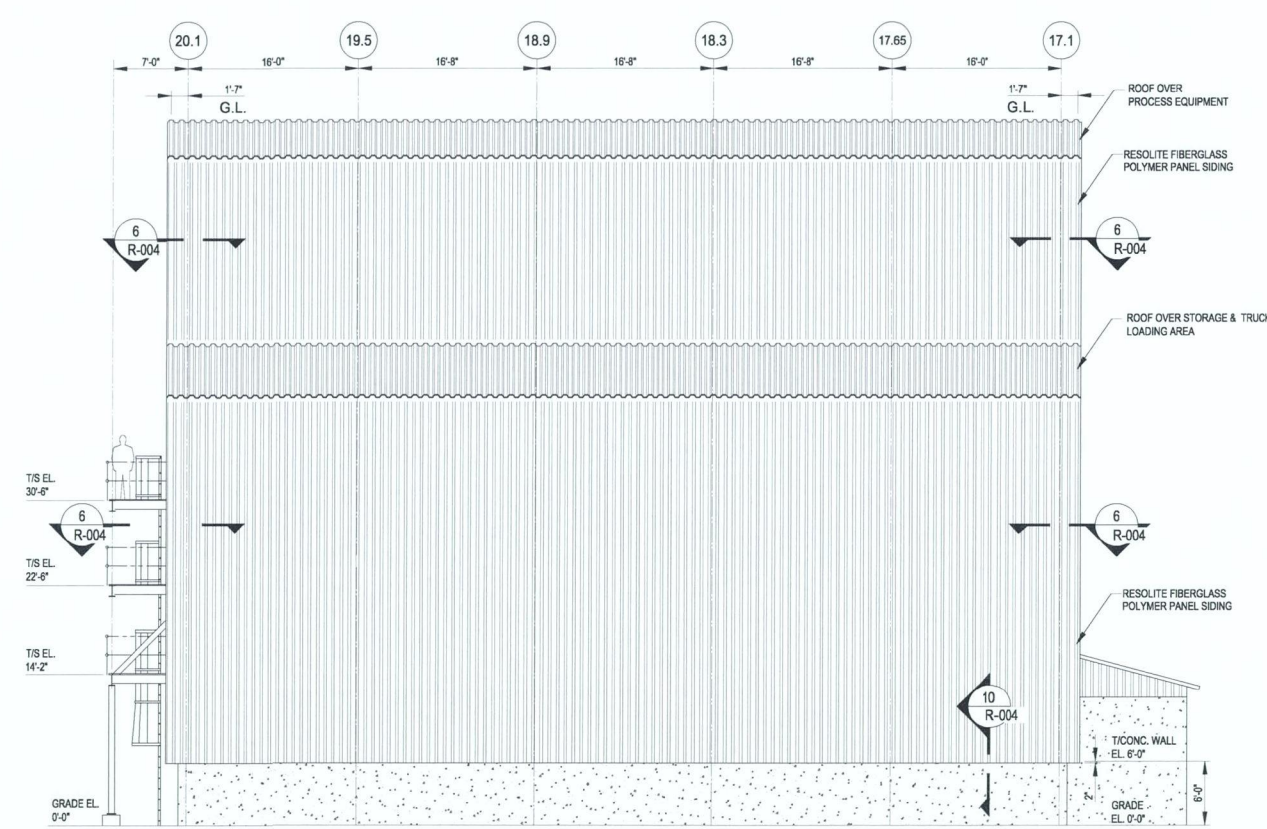
ISSUE	DRAWING HISTORY	REV.	DATE

RRT Design & Construction
ENGINEERING ARCHITECTURE CONSTRUCTION
125 Bayville Road
Melville, N.Y. 11747
ph: 631-756-1860
fax: 631-756-1864

re • 3573 • 3573R003 • 04-28-11 @ 13:06

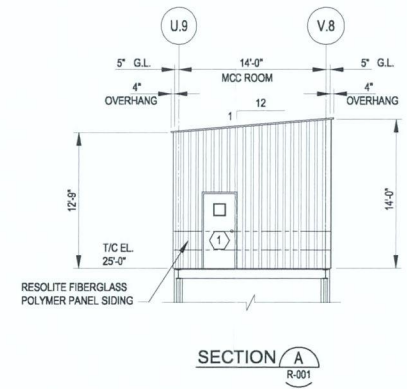


SOUTH ELEVATION



WEST ELEVATION

TRUCK DOORS NOT SHOWN FOR CLARITY

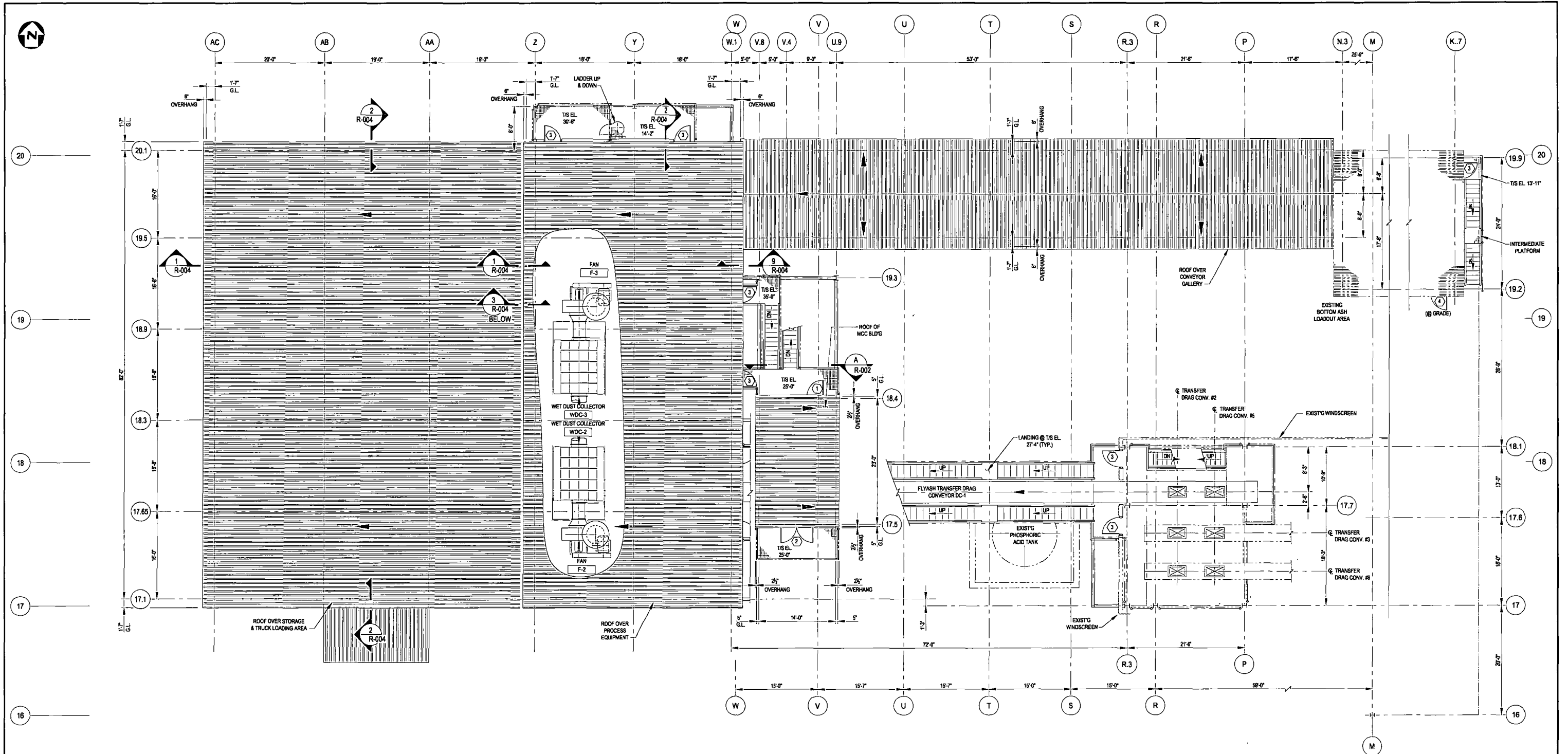


SECTION A-A

- NOTES:
1. ALL NEW SIDING IS TO BE OPAQUE (CRFS25A, 1040).
 2. FOR GENERAL NOTES AND DOOR SCHEDULE SEE DWG. #3573-R-004.

FIGURE 4

CASE ENGINEERING, INC 5925 IMPERIAL PARKWAY, SUITE 226 MULBERRY, FLORIDA 33860		RRT DESIGN & CONSTRUCTION A Service of Enviro-Services & Constructors, Inc.	
PROFESSIONAL ENGINEER DAVID L. NEDERVELD PROFESSIONAL LICENSE NUMBER 16820		WHEELABRATOR NORTH BROWARD METAL RECOVERY SYSTEM ARCHITECTURAL	
CASE ENGINEERING MULBERRY, FLORIDA CERTIFICATION OF AUTHORIZATION 2270		ELEVATIONS SOUTH & WEST	
C ISSUE FOR 100% DESIGN 5-2-11 RE DN	B ISSUE FOR BUILDING PERMIT 02/01/11 JK/DLN	A ISSUE FOR GMP 12-3-10 KCDN	REV DESCRIPTION DATE BY
DRAWN: JKC CHECKED: [] DESIGNED: [] APPROVED: []		PROJ. No: 633-008 DWG. No: 3573-R-002 CAD FILE: 3573R002 SHEET SIZE: D-24x36	SCALE: 1/8" = 1'-0" REV C
123 Bayle Road Mahwah, N.J. 07447 973-831-7561		123 Bayle Road Mahwah, N.J. 07447 973-831-7561	



* ROOFING SIDING CONNECTED WITH 1/4" SELF-TAPPING SCREWS
S.S. @ 7" WITH 1/8" WASHERS.

RESOLITE SIDING LOCAL PRODUCT APPROVAL

COMPONENTS/LADDING DESIGN WIND PRESSURE = 90 PSF. DESIGN CRITERIA:

1. 1620 (H-VZ) 140 MPH FOR NOMINAL DESIGN, 3-SECOND GUST.
2. BUILDING CATEGORY II.
3. INTERNAL PRESSURE COEFFICIENT ±0.55.
4. IMPORTANCE FACTOR 1.0
5. WIND EXPOSURE FACTOR 'C'

THE ALLOWABLE LOAD FOR THE RESOLITE 1940 PANEL (7'2"x11'5") IS 80 PSF WITH A 5'-0" ALLOWABLE SPAN CRITERIA. THE MAXIMUM ROOFING & SIDING SPAN FOR THIS PROJECT DOES NOT EXCEED 4'-0". THE LOADSPAN LIMITS IN THE RESOLITE DESIGN CHARTS IS BASED ON FASTENER WITH 3/4" WASHERS IN EVERY LOW (7'2"). SIGNIFICANT SPAN OR WIND PRESSURE ALLOWABLE INCREASES CAN BE ACHIEVED BY USING 1/2" WASHERS.

THIS STRUCTURE HAS BEEN DESIGNED USING AN INTERNAL PRESSURE COEFFICIENT OF ±0.55. THEREFORE, THE IMPACT OF WIND BORNE DEBRIS CRITERIA IS NOT APPLICABLE AND WILL AFFECT THE ROOFING AND SIDING PANELS IMPACTED IN CASE OF ROOFING AND SIDING PANEL DAMAGE.



NOTES:

1. ALL NEW ROOFING IS TO BE TRANSLUCENT (FS25A.1040).
2. FOR GENERAL NOTES AND DOOR SCHEDULE SEE DWG. #3573-R-004.

FIGURE 5

CASE ENGINEERING, INC 5925 IMPERIAL PARKWAY, SUITE 226 MULBERRY, FLORIDA 33860		RRT DESIGN & CONSTRUCTION A Service of Enviro-Services & Constructors, Inc.	
PROFESSIONAL ENGINEER DAVID L. NEDERVELD PROFESSIONAL LICENSE NUMBER 16820		WHEELABRATOR NORTH BROWARD METALS RECOVERY SYSTEM ARCHITECTURAL	
CASE ENGINEERING MULBERRY, FLORIDA CERTIFICATION OF AUTHORIZATION 2270		ROOF PLAN	
C ISSUE FOR 100% DESIGN 5-2-11 RE: DN	PROJECT No: 633-008 SCALE: 1/8" = 1'-0"		
B ISSUE FOR BUILDING PERMIT 07-01-11 XCDLN	DWG. NO: 3573-R-001		
A ISSUE FOR GMP 12-3-10 XCDN	CAD FILE: 3573R001		
REV. DESCRIPTION DATE BY	SHEET SIZE: D-24x36		
PROPRIETARY DATA THIS DRAWING IS THE PROPERTY OF ENVIRO-SERVICES & CONSTRUCTORS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. ANY REPRODUCTION OR UNAUTHORIZED USE, WITHOUT WRITTEN CONSENT OF ENVIRO-SERVICES & CONSTRUCTORS, IS STRICTLY PROHIBITED.	APPROVED		
RRT Design & Construction ENGINEERING-ARCHITECTURE-CONSTRUCTION 132 Bayville Road Mahwah, N.J. 07430	APPROVED		
ISSUE	DRAWING HISTORY	REV.	DATE



Table of Contents

Application for Air Permit

Part II

Table 1 Scrubber Calculations for Minor Source Air Permit Application

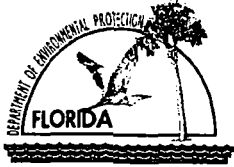
Figure 1 Partial Site Plan

Figure 2 Process Flow Sheet

Attachment A Scrubber Manufacturer Information

Attachment B Metal Recovery Facility Elevations and Plan Views

APPLICATION FOR AIR PERMIT
LONG FORM



Department of Environmental Protection

RECEIVED

Division of Air Resource Management

MAY 17 2012

APPLICATION FOR AIR PERMIT - LONG FORM

DIVISION OF AIR RESOURCE MANAGEMENT

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: Wheelabrator North Broward, Inc.	
2. Site Name: Wheelabrator North Broward	
3. Facility Identification Number: 0112120	
4. Facility Location... Street Address or Other Locator: 2600 NW 48th Street City: Pompano Beach County: Broward Zip Code: 33073	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Application Contact

1. Application Contact Name: Chuck Faller, Environmental Safety and Compliance Director	
2. Application Contact Mailing Address... Organization/Firm: Wheelabrator North Broward, Inc. Street Address: 2600 NW 48th Street City: Pompano Beach State: FL Zip Code: 33073	
3. Application Contact Telephone Numbers... Telephone: (954) 971-8701 ext. Fax: (954) 971-8703	
4. Application Contact E-mail Address: cfaller@wm.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 5-17-12	3. PSD Number (if applicable):
2. Project Number(s): 0112120-011-AC	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This application is for two new wet scrubbers to be located in the metal recovery building.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
007	Two Wet Scrubbers in Metal Recovery Building	AC1F	

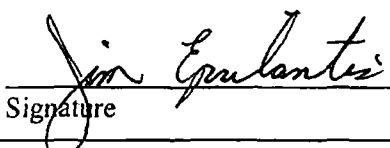
Application Processing Fee

Check one: Attached - Amount: \$ _____ Not Applicable

APPLICATION INFORMATION

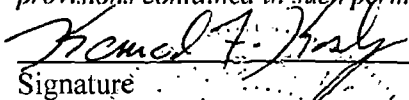
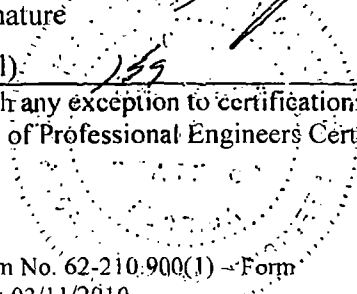
Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name : Jim Epsilantis, Plant Manager
2. Owner/Authorized Representative Mailing Address... Organization/Firm: Wheelabrator North Broward, Inc. Street Address: 2600 NW 48th Street City: Pompano Beach State: FL Zip Code: 33073
3. Owner/Authorized Representative Telephone Numbers... Telephone: (954) 971-8701 ext. 212 Fax: (954) 971-8703
4. Owner/Authorized Representative E-mail Address: jepsilantis@wm.com
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>  Signature <u>5-15-12</u> Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Kennard F. Kosky Registration Number: 14996
2. Professional Engineer Mailing Address... Organization/Firm: Golder Associates Inc.** Street Address: 6026 NW 1st Place City: Gainesville State: FL Zip Code: 32607
3. Professional Engineer Telephone Numbers... Telephone: (352) 336-5600 ext. 21156 Fax: (352) 336-6603
4. Professional Engineer E-mail Address: kkosky@golder.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> , if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/> , if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i>  Signature _____ Date <u>5/16/12</u> (seal): 

* Attach any exception to certification statement.

**Board of Professional Engineers Certificate of Authorization #00001670.

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Kennard F. Kosky Registration Number: 14996
2. Professional Engineer Mailing Address... Organization/Firm: Golder Associates Inc.** Street Address: 6026 NW 1st Place City: Gainesville State: FL Zip Code: 32607
3. Professional Engineer Telephone Numbers... Telephone: (352) 336-5600 ext. 21156 Fax: (352) 336-6603
4. Professional Engineer E-mail Address: kkosky@golder.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> , if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/> , if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> _____ Signature (seal) _____ Date

*. Attach any exception to certification statement.

**Board of Professional Engineers Certificate of Authorization #00001670.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates...		2. Facility Latitude/Longitude...	
Zone 17	East (km) 583.541	Latitude (DD/MM/SS) 26/17/12	Longitude (DD/MM/SS) 80/09/48
	North (km) 2907.498		
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4953
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: Chuck Faller, Environmental Safety and Compliance Director
2. Facility Contact Mailing Address... Organization/Firm: Wheelabrator North Broward, Inc. Street Address: 2600 NW 48th Street City: Pompano Beach State: FL Zip Code: 33073
3. Facility Contact Telephone Numbers: Telephone: (954) 971-8701 ext. Fax: (954) 971-8703
4. Facility Contact E-mail Address: cfaller@wm.com

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: () ext. Fax: ()
4. Facility Primary Responsible Official E-mail Address:

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment: MSW Units 1, 2, and 3 are subject to NSPS - 40 CFR 60, Subpart Cb, and NESHAP - 40 CFR 61, Subpart C (for Beryllium)	

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Particulate Matter Total – PM	A	N
Particulate Matter – PM10	A	N
Sulfur Dioxide – SO2	A	N
Nitrogen Oxides – NOx	A	N
Carbon Monoxide – CO	A	N
Fluoride – FL	A	N
Lead – Pb	B	N
Beryllium – H021	B	N
Cadmium – H027	B	N
Hydrogen Chloride – H106	A	N
Mercury – H114	B	N
Dioxin/Furan – DIOX	B	N

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

<p>1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>June 2010</u></p>
<p>2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>June 2010</u></p>
<p>3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>June 2010</u></p>

Additional Requirements for Air Construction Permit Applications

<p>1. Area Map Showing Facility Location:</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (existing permitted facility)</p>
<p>2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL):</p> <p><input type="checkbox"/> Attached, Document ID: _____</p>
<p>3. Rule Applicability Analysis:</p> <p><input type="checkbox"/> Attached, Document ID: _____</p>
<p>4. List of Exempt Emissions Units:</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (no exempt units at facility)</p>
<p>5. Fugitive Emissions Identification:</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
 Attached, Document ID: _____ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only)
 Attached, Document ID: _____ Not Applicable (revision application)
2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)
 Attached, Document ID: _____
 Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)
 Attached, Document ID: _____
Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)
 Attached, Document ID: _____
 Equipment/Activities Onsite but Not Required to be Individually Listed
 Not Applicable
5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)
 Attached, Document ID: _____ Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:
 Attached, Document ID: _____ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

<p>1. Acid Rain Program Forms:</p> <p>Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable (not an Acid Rain source)</p> <p>Phase II NO_x Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p> <p>New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p>
<p>2. CAIR Part (DEP Form No. 62-210.900(1)(b)):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable (not a CAIR source)</p>

Additional Requirements Comment

<p>This application is for a minor source air construction permit for two wet scrubbers. Two wet scrubbers will be installed in the metal recovery building. See Part II. The two wet scrubbers are being installed to maintain indoor air quality.</p>
--

PART II

PART II

INTRODUCTION

Wheelabrator North Broward Inc. is submitting this minor source air construction permit for the addition of wet scrubbers to the authorized metal recovery facility. These wet scrubbers are being installed to maintain indoor air quality for employee comfort and safety. The metal recovery facility was approved by the Department as a modification to the Site Certification (Case No. PA 86-22J) for the North Broward Resource Recovery Facility (NBRRF) on April 15, 2011. This modification authorized the construction and operation of a metal recovery facility (see Section A: General Conditions, I. Scope B). In the modification approval, wet scrubbers were not included in the design as the metal recovery building is enclosed and the ash contains 20 percent moisture that ensures minimal fugitive air emissions. In the final design, two wet scrubbers are being added to maintain indoor air quality and for employee comfort and safety.

PROJECT DESCRIPTION

The metal recovery system involves a series of conveyors and mechanical devices that will separate ferrous and non-ferrous metals from the bottom ash of the MSW-fired boilers. In addition, the facility will be designed to handle fly ash.

The processing of bottom ash will occur in a new building, to be constructed adjacent to the existing ash loadout buildings at the site, which will represent an extension of the ash handling system. Figure 1 presents a partial site plan for NBRRF showing the metal recovery facility building. The building will be enclosed, with entrance and exit openings for ash and recovered metals.

Figure 2 presents a process flow diagram for the metal recovery facility. Bottom ash and fly ash will enter the facility through new conveyors. Bottom ash will be transported to the metal recovery facility using an enclosed belt conveyor. The enclosed belt conveyor will have a roof, sides, and a bottom pan. The bottom ash belt conveyor is shown in Figure 1 entering the metal recovery facility in the northeast corner of the building. Fly ash will be transported to the metal recovery facility in a totally enclosed drag conveyor. The totally enclosed drag conveyor will have four sides without any opening where fugitive emissions can escape. The fly ash drag conveyor enters the southeast corner of the metal recovery facility as shown in Figure 1.

The ferrous and non-ferrous material from bottom ash will be removed from other material using a series of equipment that includes screens, magnetic separators, eddy current separators, and associated conveyors. Metals recovered from the system will be discharged into concrete bunkers. Metals will then be transferred using a front end loader to trucks parked within the building.

The metal recovery process will handle on average 34 tons per hour (TPH) of bottom ash, producing about 4.3 TPH of ferrous metal and 0.6 TPH of non-ferrous metals. The equipment will be designed to

handle 2.5 times the average to allow for peak loads. The bottom ash with ferrous and non-ferrous metals removed will be conveyed to ash trucks that will be transported to the adjacent landfill, as is the current practice for all ash. Oversized bottom ash, referred to as "bulkies" and also known as "overs," will also be placed in ash trucks for transport to the adjacent landfill. Bulkies typically consist of non-metallic materials (e.g., large pieces of wood not combusted, concrete, etc.) that are 6 inches in size and larger.

The metals are not expected to contain significant amounts of dust and will therefore not generate fugitive emissions during loading.

Two 17,000 standard cubic feet per minute (scfm) Tri-Mer® Corporation Whirl Wet® model W/W-170 high efficiency dust collectors are identified as WDC-2 and WDC-3 on the attached Figure 2. WDC-2 will collect fugitive dust from the processing equipment area, while WDC-3 will collect fugitive dust generated from storage and loading areas in the metal recovery building (see Figure 2). These scrubbers are being added to maintain indoor air quality within the metal recovery facility.

The metal recovery facility will also handle and process fly ash. Fly ash will enter the metal recovery facility using a totally enclosed drag conveyor that empties into a totally enclosed fly ash surge hopper. From the surge hopper, the fly ash will be transported to a conditioning system using a totally enclosed screw conveyor. The fly ash will be conditioned and mixed with processed bottom ash on the ash loadout conveyor for transport to ash trucks. Mixing fly ash and bottom ash in this manner is the same as the current practice.

Fly ash may be processed during certain conditions such as when the new ash processing equipment is not operating. In this case, fly ash from the existing fly ash processing system will be routed to the existing bottom ash belt conveyor as shown in Figure 2. Fly ash typically makes up only about 15 percent of the total ash from the facility.

Attachment A contains manufacturer information on the Whirl Wet® scrubbers. Attachment B contains the final design of the exterior views of the Metal Recovery Facility including the location of the wet scrubbers.

The trucks will deliver the metals to a separately-owned, operated, and permitted metal processing facility. The number of trucks leaving the NBRRF site is not expected to change relative to current operations.

AIR EMISSION ESTIMATES

Table 1 presents the estimated air emissions for the wet scrubbers. The ash processed in the metal recovery facility typically has a moisture content of 20 percent or higher. As a result, using the EPA AP-42 batch drop method of calculating particulate matter (PM) emissions, extremely low air emissions are estimated based on the amount of ash processed. Since the wet scrubbers are being added for employee comfort and safety, a conservative inlet concentration based on the Occupational Safety and Health Administration (OSHA) permissible exposure (PEL) limit for total particulate matter of 15,000 µg/m³ was

used to calculate uncontrolled PM emissions from the wet scrubbers. This inlet concentration is conservative since representative sampling within other Wheelabrator ash processing facilities averaged less than $1,000 \mu\text{g}/\text{m}^3$ with a maximum of $2,100 \mu\text{g}/\text{m}^3$.

Based on manufacturer information, a particulate control efficiency of 99 percent was used to calculate estimated particulate emission exiting the wet scrubbers. This resulted in estimated particulate emissions of 0.0416 tons per year (TPY) each for WDC-2 and WDC-3.

REGULATORY APPLICABILITY

The magnitude of PM emissions in Table 1 is less than the generic exemption from permitting pursuant to Rule 62-210.300(3)(b), Florida Administrative Code, and would otherwise be considered an insignificant activity. In addition, an amendment to the Site Certification is being submitted to the Siting Coordination Office to include a minor process change within the metal recovery facility and include the wet scrubbers planned to be installed for employee comfort and safety. As a result, a minor source air construction permit is being submitted to include WDC-2 and WDC-3 as Emission Unit 007 associated with the metal recovery facility.

TABLES

Table 1. Scrubber Calculations for Minor Source Air Permit Application

Calculations based on scrubber inlet information

	Data	Units
Scrubber Inlet Basis - OSHA Limit	15,000	ug/m ³
	0.006516901	grains/scf
Scrubber Efficiency	99%	
WDC-2 & 3		
Uncontrolled based on 15,000 ug/m ³	17,000	scfm
Uncontrolled based on 15,000 ug/m ³	6,647.24	grains/hr
Uncontrolled based on 15,000 ug/m ³	0.9496	lb/hr
Uncontrolled based on 15,000 ug/m ³	4.1593	tons/year
Controlled	0.0095	lb/hr
Controlled	0.0416	tpy

FIGURES

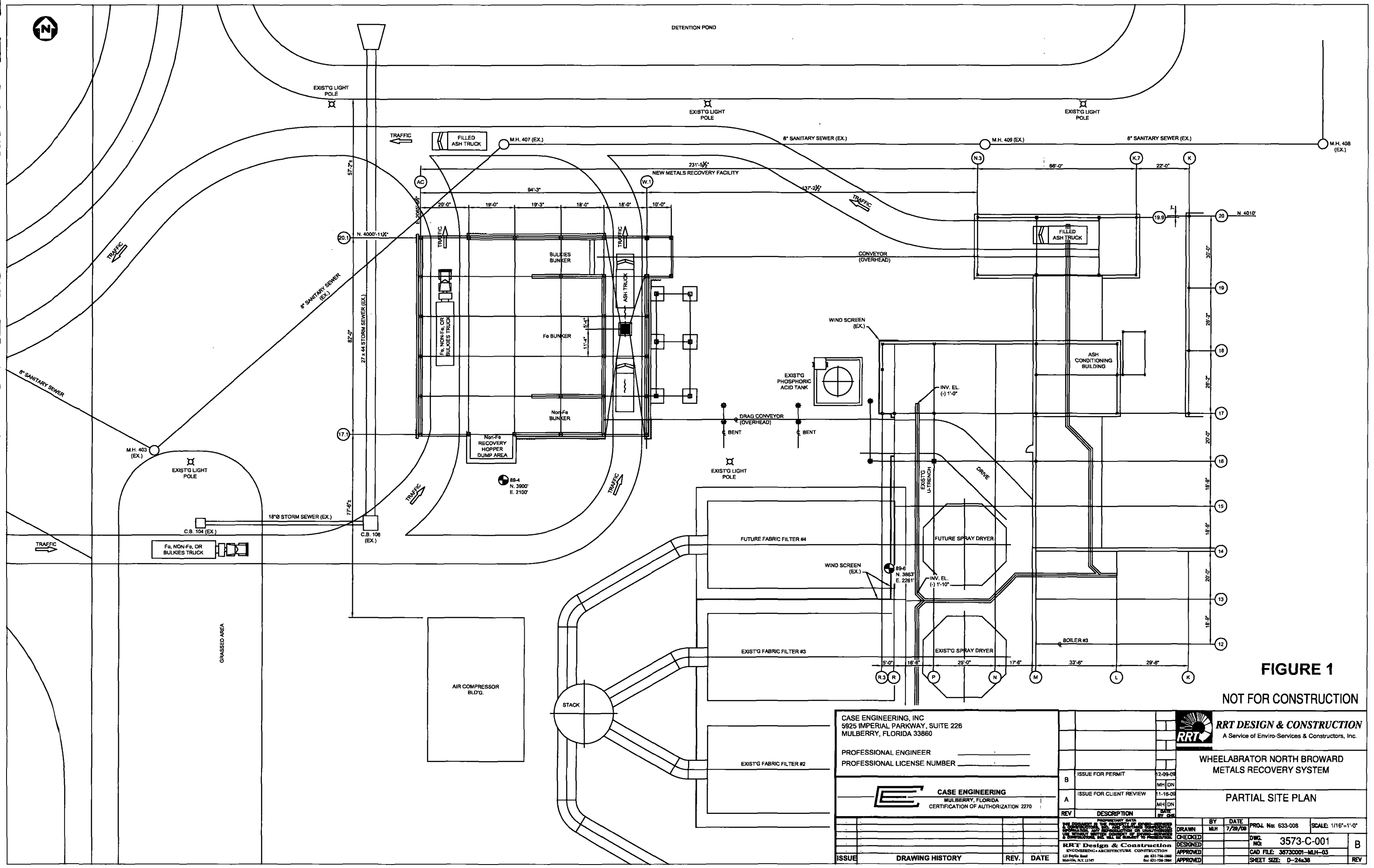


FIGURE 1

NOT FOR CONSTRUCTION



WHEELABRATOR NORTH BROWARD
METALS RECOVERY SYSTEM

PARTIAL SITE PLAN

CASE ENGINEERING, INC
5925 IMPERIAL PARKWAY, SUITE 226
MULBERRY, FLORIDA 33860

PROFESSIONAL ENGINEER _____
PROFESSIONAL LICENSE NUMBER _____

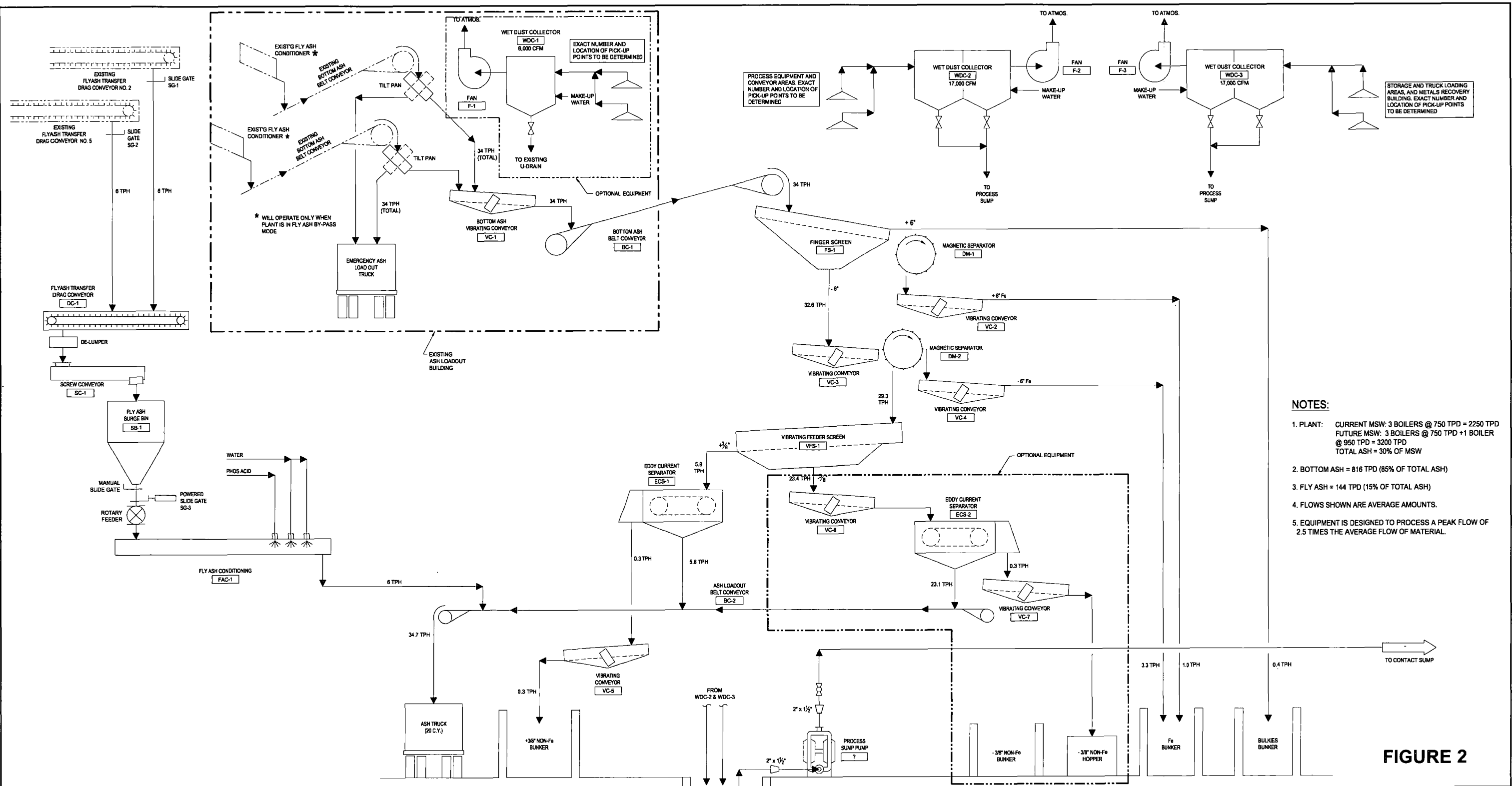


REV	DESCRIPTION	DATE
B	ISSUE FOR PERMIT	12-09-08
MH	DN	
A	ISSUE FOR CLIENT REVIEW	11-16-08
MH	DN	
RT	BY	DATE

ISSUE	DRAWING HISTORY	REV.	DATE

DRAWN	CHECKED	DESIGNED	APPROVED

BY	DATE	PROJ. No:	SCALE:
MH	7/29/08	633-008	1/16"=1'-0"
DWG. NO.:	3573-C-001		B
CAD FILE:	3573C001-MH-03		REV
SHEET SIZE:	D-24x36		



- NOTES:**
1. PLANT: CURRENT MSW: 3 BOILERS @ 750 TPD = 2250 TPD
FUTURE MSW: 3 BOILERS @ 750 TPD + 1 BOILER @ 950 TPD = 3200 TPD
TOTAL ASH = 30% OF MSW
 2. BOTTOM ASH = 816 TPD (85% OF TOTAL ASH)
 3. FLY ASH = 144 TPD (15% OF TOTAL ASH)
 4. FLOWS SHOWN ARE AVERAGE AMOUNTS.
 5. EQUIPMENT IS DESIGNED TO PROCESS A PEAK FLOW OF 2.5 TIMES THE AVERAGE FLOW OF MATERIAL.

FIGURE 2

RRT DESIGN & CONSTRUCTION A Service of Enviro-Services & Constructors, Inc.	
WHEELABRATOR NORTH BROWARD METALS RECOVERY SYSTEM	
PROCESS FLOW SHEET	
F ISSUE FOR 100% DESIGN 5-2-11 SH DN	DRAWN: CML/MLH 9/23/08 CHECKED: [] DESIGNED: [] APPROVED: [] PROJECT No: 633-008 SCALE: NONE DWG No: 3573-F-001 SHEET SIZE: D-24x36
E ISSUE FOR BUILDING PERMIT 2-1-11 RF DN	
D ISSUE FOR GMP 12-3-10 RF DN	
C ISSUE FOR FDEP PERMIT 1/11/10 MH DN	
B ISSUE FOR PERMIT 12/09/10 MH DN	
REV DESCRIPTION DATE	APPROVED: []

CASE ENGINEERING, INC
 5925 IMPERIAL PARKWAY, SUITE 226
 MULBERRY, FLORIDA 33860
 CERTIFICATION OF AUTHORIZATION 2270

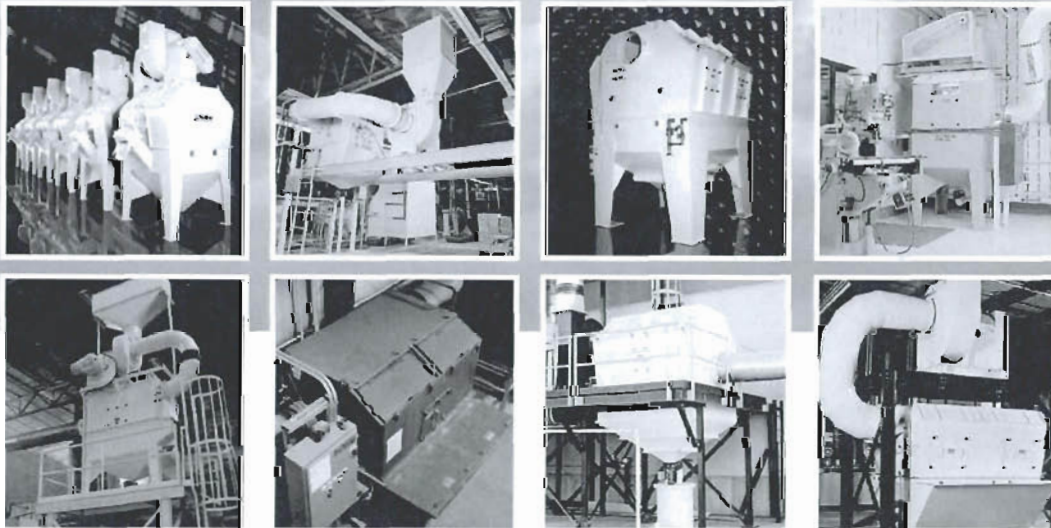
PROFESSIONAL ENGINEER **DAVID NEDERVELD**
 PROFESSIONAL LICENSE NUMBER **16820**

ATTACHMENT A
SCRUBBER MANUFACTURER INFORMATION

Whirl Wet[®] High Efficiency Dust Collection

with Low Maintenance and Operating Expense

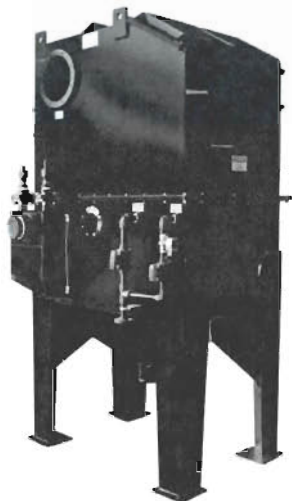
50
1960 - 2010
YEARS



 **Tri-Mer**[®]
CORPORATION
www.tri-mer.com

Commemorating 50 Years of Service in 2010

High Efficiency Dust Collection with



Tri-Mer's Whirl Wet® is a time-proven "workhorse" designed for continuous, predictable collection of dusts, both soluble and insoluble, that are 3 microns and above.

For companies in a broad range of industries, Whirl Wet is the most efficient way to collect and manage dusts and particulate, while offering numerous distinct advantages:

> Efficiency

Systems are 95% efficient on 2 microns and higher for larger micron sizes.

> Superior Design

Patented design has no moving parts and does not use "high maintenance" components such as spray nozzles, pumps or bags that can disrupt production and stress maintenance budgets.

> Downtime

Energy generated inside the unit will not allow the system to clog under any operating conditions; therefore, the agglomeration and sticky residues that can plug dry collectors are not an issue with the Whirl Wet system. *Note: Baghouse media that is plugged ("blinded") in this way allows dust to fuel a fire or explosion.*

> Continuous Operation

Whirl Wet operates continuously, without the need to enter the unit for service.

> "Green" Advantage

Whirl Wet is the "greenest" dust collection technology available – in several important ways.

Unlike Baghouses, which add to a company's waste volume, Whirl Wet produces a dense filter cake, so quantities are a small fraction of what a dry system would generate. For companies seeking ways to comply with corporate or regulatory mandates on solid waste reduction, Whirl Wet can make a substantial contribution.

In addition, the Whirl Wet system uses very little water, and process water is recycled.

> Reclamation

Whirl Wet is ideal for applications where materials reclamation is desirable.

> Safety

Whirl Wet is well suited to applications involving volatile dusts, and wherever it is necessary to prevent fire or explosion.

> Ergonomics

Noise levels are typically 85-90 db or less at 5 ft. The choice of a Whirl Wet has, for some customers, eliminated the need for a monitoring program for long-term hearing loss. The Whirl Wet also contributes to higher quality indoor air.

> Water Use

Whirl Wet consumes significantly less water than competitive wet systems.

> Housekeeping

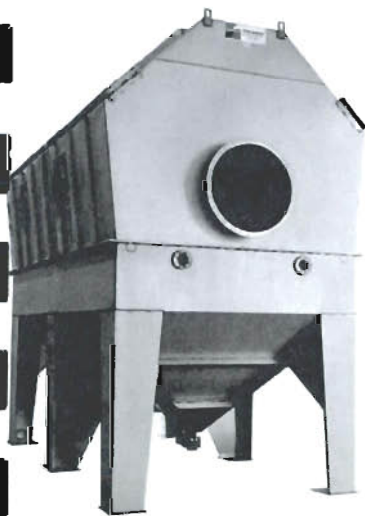
Whirl Wet provides both excellent dust collection and a substantial advantage in terms of plant cleanliness. Fugitive dusts are virtually eliminated, as particulate is captured in the water-laden dust chamber.

> Self Cleaning

Whirl Wets are self-cleaning. Particulate is deposited at the bottom of the unit for safe and easy recovery, or disposal. This is in sharp contrast to the mechanical shaking cycle used to clean dusts from the walls of dry collectors. As dust is shaken from the bags, sparking potential is high as the gas-dust mixture passes between upper and lower explosive levels.

> Versatility

Whirl Wet systems are compatible with highly corrosive dusts, abrasive dusts, high-weight materials, and high temperature applications. Lighter, more porous, dusts are also handled with Whirl Wet dust technology.



Low Maintenance and Operating Expense



Applications

As of mid-2009, there were more than 10,000 Whirl Wet® units in successful operation in more than 20 countries. **The system has a powerful track record:** many systems have been in use for 20 years or longer.

Whirl Wet is frequently specified for the collection of coal, aluminum, fertilizer and sugar dust, and is widely used for the dust elimination requirements of the foundry shakeout industry, lead particulate in the battery industry, and virtually every sector of the process industries, including foods and pharmaceuticals.

Dust collection from grinding processes and spices are excellent applications for the Whirl Wet. Hydrogen venting is provided for applications generating hazardous quantities of hydrogen gas. It is becoming the leading dust collection alternative for plants where metal or plastic finishing generates dust as small as one micron.

Processes that were not formerly candidates for materials recovery have become good candidates as a result of the Whirl Wet, yielding significant economic benefits for the processor.

Design

Whirl Wet units are custom-engineered to the application and the environment. Standard capacities range from 500 cfm to 50,000 cfm. Systems can also be engineered with modules to handle fumes, odors and other contaminants in addition to particulate. Materials of construction include coated steel, 304 and 316 stainless steel, polypropylene, PVC, and alloy

materials, including Hastelloy®. Systems can be designed for indoor or outdoor installation, and to accommodate space restrictions: a vertical format system with a top-mounted fan, for example, is often an excellent solution where equipment footprint is an issue.

Tri-Mer systems have a CE mark approval.

Hastelloy is a registered trademark of Haynes International, Inc.

Operation

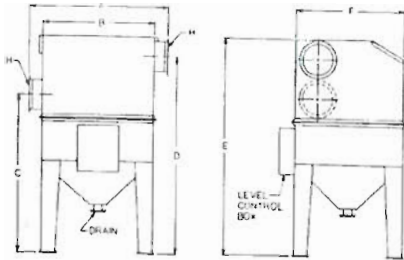
Whirl Wet employs a unique process to create intensive mixing of the dust particles and water. To infuse dust particles with water droplets, the mixture is passed with high velocity through a fixed-position dual opposed blade system. The mixing of the dust-laden airstream and liquid takes place and, to increase turbulence, a tangential airstream is injected through a linear slot in the lower blade assembly. Rotation is accelerated, droplets in the airstream are

eliminated through a mist eliminator located downstream, and particulate material is deposited on the bottom of the unit for recovery or disposal. Water level is maintained automatically and make-up water is only necessary to compensate for evaporation or sludge removal. Whirl Wet can operate in the 99% efficiency range for a wide variety of applications, and over a wide range of micron sizes.

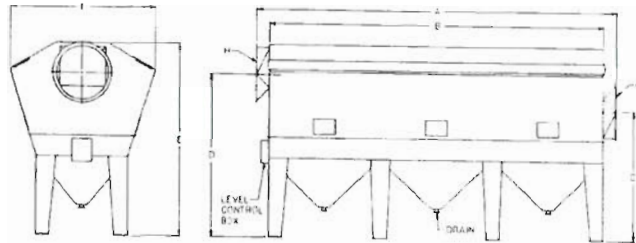
Models Available: 3 Disposable Options

Model "H"

The **Model H** offers an automatically timed drain-down system or manual drain down with sluicing hopper.



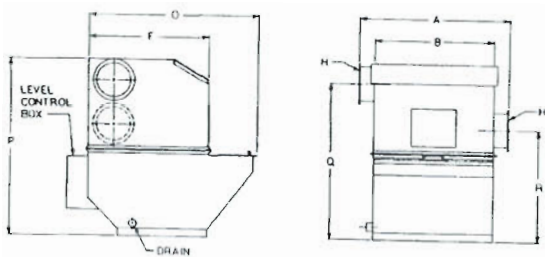
Model "H" (500 cfm – 6000 cfm)



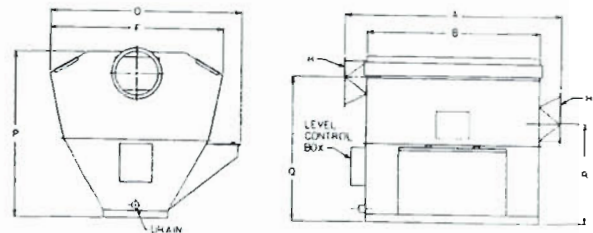
Model "H" (7000 cfm – 50,000 cfm)

Model "M"

The **Model M** Whirl Wet® has manual clean-out, and is often preferable where dust collection volume is low or some tends to float.



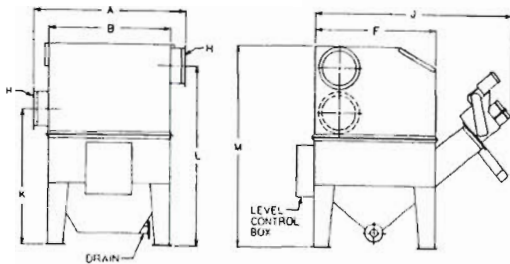
Model "M" (1000 cfm – 6000 cfm)



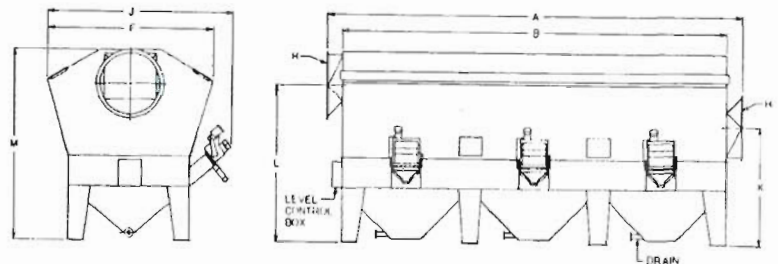
Model "M" (7000 cfm – 14,000 cfm)

MCD (Modular Conveyor Dragout)

MCD (modular conveyor dragout) is ideal for the heaviest dust loading applications. This unique system has a streamlined, modular design and extraordinarily low maintenance requirements.



Model "MCD" (2800 cfm – 6000 cfm)



Model "MCD" (7000 cfm – 50,000 cfm)

Whirl Wet Model #	Min. CFM	Std. CFM	Max. CFM	A	B	C	D	E	F	H	J	K	L	M	O	P	Q	R
W/W-5	425	500	525	18.5"	6.5"	69"	86.5"	95"	48"	5"	-	-	-	-	-	-	-	-
W/W-6	510	600	630	20"	8"	69"	86.5"	95"	48"	5"	-	-	-	-	-	-	-	-
W/W-8	630	800	840	22.5"	10.5"	69"	86.5"	95"	48"	6"	-	-	-	-	-	-	-	-
W/W-10	840	1000	1050	25"	13"	69"	86.5"	95"	48"	7"	-	-	-	-	67.5"	67"	58.5"	41"
W/W-12	1020	1200	1260	28"	16"	69"	86.5"	95"	48"	7"	-	-	-	-	67.5"	67"	58.5"	41"
W/W-15	1260	1500	1575	32"	20"	69"	86.5"	95"	48"	8"	-	-	-	-	67.5"	67"	58.5"	41"
W/W-18	1530	1800	1890	36"	24"	69"	86.5"	95"	48"	9"	-	-	-	-	67.5"	67"	58.5"	41"
W/W-22	1870	2200	2310	41"	29"	69"	86.5"	95"	48"	10"	-	-	-	-	67.5"	67"	58.5"	41"
W/W-28	2310	2800	2940	49"	37"	69"	86.5"	95"	48"	11"	90"	52"	69.5"	78"	67.5"	67"	58.5"	41"
W/W-34	2890	3400	3570	57"	45"	69"	86.5"	95"	48"	12"	90"	52"	69.5"	78"	67.5"	67"	58.5"	41"
W/W-40	3400	4000	4200	65"	53"	69"	86.5"	95"	48"	13"	90"	52"	69.5"	78"	67.5"	67"	58.5"	41"
W/W-50	4200	5000	5250	78"	66"	69"	86.5"	95"	48"	14"	90"	52"	69.5"	78"	67.5"	67"	58.5"	41"
W/W-60	5100	6000	6300	91.5"	79.5"	69"	86.5"	95"	48"	16"	90"	52"	69.5"	78"	67.5"	67"	58.5"	41"
W/W-70	5950	7000	7350	70.5"	46.5"	85"	109"	117"	88"	18"	134"	64"	88"	99"	104"	90"	81.5"	58"
W/W-80	6800	8000	8400	77"	53"	85"	109"	117"	88"	18"	134"	64"	88"	99"	104"	90"	81.5"	58"
W/W-100	8400	10000	10500	90"	66"	85"	109"	117"	88"	20"	134"	64"	88"	99"	104"	90"	81.5"	58"
W/W-120	10200	12000	12600	103.5"	79.5"	89"	117"	126"	96"	22"	142"	68"	96"	105"	112"	96"	86.5"	59"
W/W-140	11900	14000	14700	116.5"	92.5"	89"	117"	126"	96"	24"	142"	68"	96"	105"	112"	96"	86.5"	59"
W/W-170	14450	17000	17850	136.5"	112.5"	94"	124"	135"	102"	26"	148"	73"	103"	114"	-	-	-	-
W/W-200	17000	20000	20800	156.5"	132.5"	94"	124"	135"	102"	30"	148"	73"	103"	114"	-	-	-	-
W/W-240	20400	24000	25200	183"	159"	100"	132"	145"	112"	32"	158"	79"	111"	124"	-	-	-	-
W/W-280	23800	28000	29400	209.5"	185.5"	100"	132"	145"	112"	34"	158"	79"	111"	124"	-	-	-	-
W/W-320	27200	32000	33600	236"	212"	107"	150"	168"	132"	38"	178"	86"	129"	147"	-	-	-	-
W/W-360	30600	36000	37800	262.5"	238.5"	108"	152"	171"	132"	40"	178"	87"	131"	147"	-	-	-	-
W/W-400	34000	40000	42000	289"	265"	119"	163"	183"	144"	42"	190"	98"	142"	169"	-	-	-	-
W/W-450	38250	45000	47250	322"	298"	123"	169"	190"	152"	44"	198"	102"	148"	177"	-	-	-	-
W/W-500	42500	50000	52500	355"	331"	127"	174"	196"	160"	48"	206"	106"	153"	185"	-	-	-	-

Dimensions are approximate; consult Tri-Mer for exact size.

Application Profiles

Barnes Aerospace

Barnes Aerospace specializes in complex airframe and engine components.

To meet the needs of increasing product diversity, Barnes expanded its process for hand finishing titanium aircraft parts from one system, to three. The main challenge was to prevent fires from flammable titanium dust, while minimizing maintenance costs. After researching dry dust collection (baghouses) and wet collection technology, three 3000 cfm Model M Whirl Wet® units were selected.

The Whirl Wet technology differs from baghouse devices in important ways. First, dust particles enter the whirl chamber and are immediately immersed in water, thus there is no combustion risk.

Also, Tri-Mer's Whirl Wet system has no internal moving parts to wear or replace, or maintenance "consumables." This is in stark contrast with baghouses, whose filter bags must be purchased, inventoried and discarded when the bag reaches capacity. Baghouse waste is also a significant contributor to landfill volume.

Barron Industries

Barron Industries, a leader in the engineered metal products industry, replaced its dry dust collector with a Model 120 H Whirl Wet to collect particulate and metal fines from grinding and finishing operations. Barron chose the Whirl Wet for its ability to prevent sparks and fire from explosive dusts, its energy efficiency, low water use and minimal maintenance requirements.

Whirl Wet produces a small, dense filter cake, rather than high volumes of bagged particulate, so it is an excellent strategy for companies seeking to comply with municipal or corporate mandates for solid waste reduction.

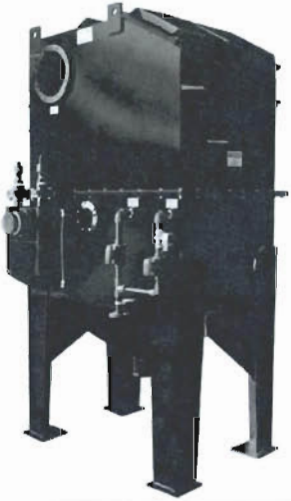
Musashi Auto Parts

Musashi Auto Parts, a manufacturer of transmission gears, camshafts, clutch pistons, balancer shafts and other automotive parts, has installed its 4th Whirl Wet dust collection system, with two additional units to follow.

Musashi's hot forging process generates a chalky residue, when a sodium hydroxide-based forging lubricant is applied to parts. Ductwork was installed to pull the particulate from the process to the Whirl Wet system, where it is infused with water droplets and passed with

high velocity through a fixed-position dual opposed blade system. The droplets in the airstream are eliminated through a mist eliminator, and particulate material is deposited on the bottom of the unit for disposal.

Selection of the Tri-Mer Whirl Wet systems was based on their ability to operate without clogging under any operating conditions, and to do so with less labor involvement. In addition, Whirl Wet units operate at 99% efficiency.



Kraft Foods

Kraft Foods (Chicago, IL), the world's second largest food company, with annual revenues of \$42 billion, has installed a polypropylene Model 40H Whirl Wet® system for its Nabisco Nutter Butter® product line. The system operates at 97% efficiency at 3 microns and 99% efficiency at 10 microns for the collection of food process dusts from flour and ingredient mixing.

The Tri-Mer Whirl Wet was chosen for its low maintenance. Patented design has no moving parts and does not use components such as spray nozzles, pumps or bags that disrupt production and stress maintenance budgets. In addition, units are self-cleaning. Particulate is deposited at the bottom of the unit in the form of a dense filter cake for easy disposal.

Florida Tile

At Florida Tile, the high-weight, high-pH glaze applied to tiles after firing created an overspray that was challenging to handle.

A baghouse was installed, but the capture rate was low; it proved difficult and costly to clean and the high viscosity of the polymer-based spray caused system clogging, resulting in frequent shut-downs.

A decision was made to upgrade to wet dust collection technology. Systems were judged on water and energy use, maintenance

requirements, feasibility of materials reclamation, and ease of worker accessibility.

Two 4500 polypropylene Whirl Wets were installed. The units are self-cleaning by way of an automatic timer; there is no interruption of production. Water use is estimated at 50% that of other units the company considered; energy usage is low. According to plant operations engineers, reclamation of the glaze material is virtually 100%.

McCormick Spice

McCormick & Co., the world's largest spice company, wanted to maximize dust collection efficiency and reduce the time, cost and labor required for system maintenance.

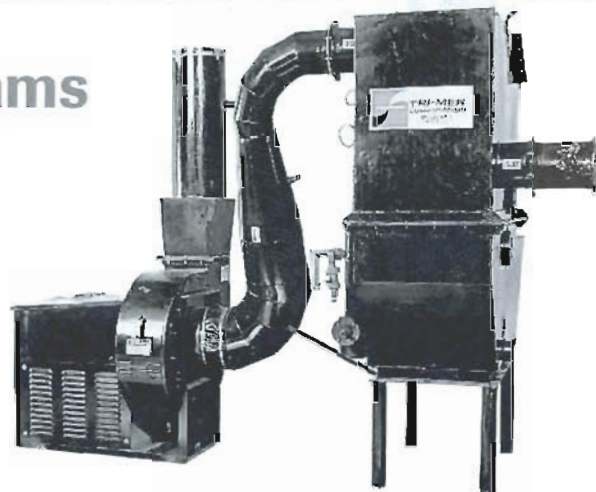
They also wanted a system that had a track record – and one that would accommodate future expansions. A pair of Whirl Wets, with an outboard structure, rounded corners, and an internal wash-down nozzle system that optimizes cleaning, was selected.

The 12,000 cfm polypropylene Whirl Wet units at McCormick are engineered for continuous operation, and are suitable for installation outdoors. Computer controls monitor outdoor temperatures and, during the winter months, heat the unit's water.

The heated water also helps maintain system cleanliness. Another notable system feature is special hoods, which have a high capture velocity, and allow dusts, even twelve feet from the collector, to be captured efficiently.

Trial Rental Programs

Tri-Mer is so confident its systems are best for your application that it offers an attractive short-term rental program to demonstrate the effectiveness of Whirl Wet® technology on your production particulate. This trial can also help you determine the practicality of materials recovery.



Special Conditions

Sometimes, gas streams have high particulate loading, high gas loading, or both. Common cases include SO₂, NO_x, HCl, Cl₂, HF; other compounds or combinations are also found. For these applications, Tri-Mer combines the Whirl Wet with its packed bed technology.

Water Use

Whirl Wet consumes less water than any wet dust collector. The only make-up water required is that which is lost to evaporation or particulate removal. Water loss is compensated by automatic water level controls. Whirl Wets have no external pumps or recirculation systems to wear or cause problems in severe weather.

Duct Design

For highest efficiency particulate collection, proper duct velocities are a must. Too slow or an improper design invites clogging and loss of air to the dust collector. To assure optimum air movement, Tri-Mer uses an integrated, computer-engineered process that's the most advanced in the industry.

High-temperature applications achieve the highest scrubbing efficiencies with the addition of quenching equipment on the wet duct sections, ahead of the Whirl Wet.



 **Tri-Mer**[®]
CORPORATION
Air Pollution Control Systems Since 1960

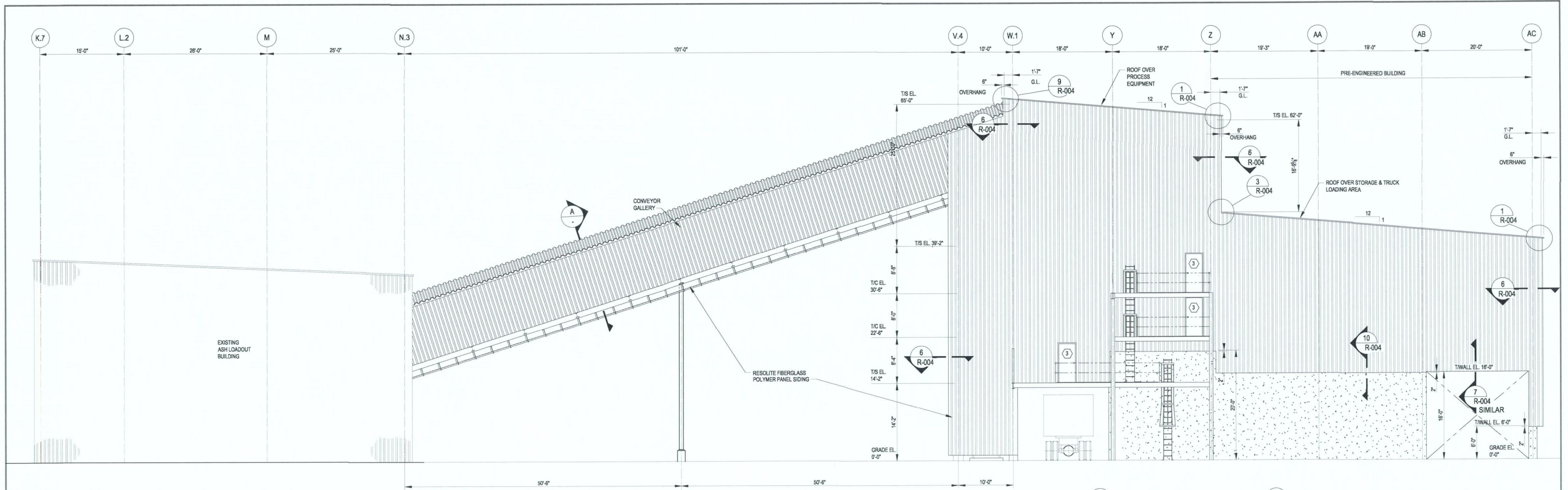
1400 Monroe St. • P.O. Box 730 • Owosso, MI 48867 • Ph: (989) 723-7838 • Fax: (989) 723-7844
Email: salesdpt@tri-mer.com

www.tri-mer.com

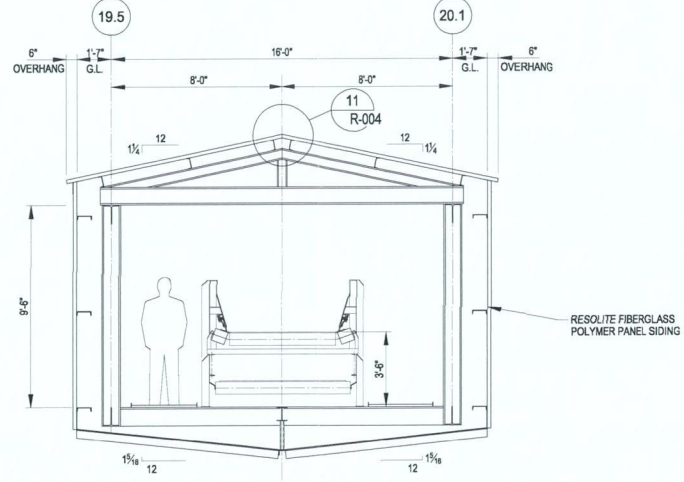
© 2009, Tri-Mer Corp. All rights reserved.

ATTACHMENT B

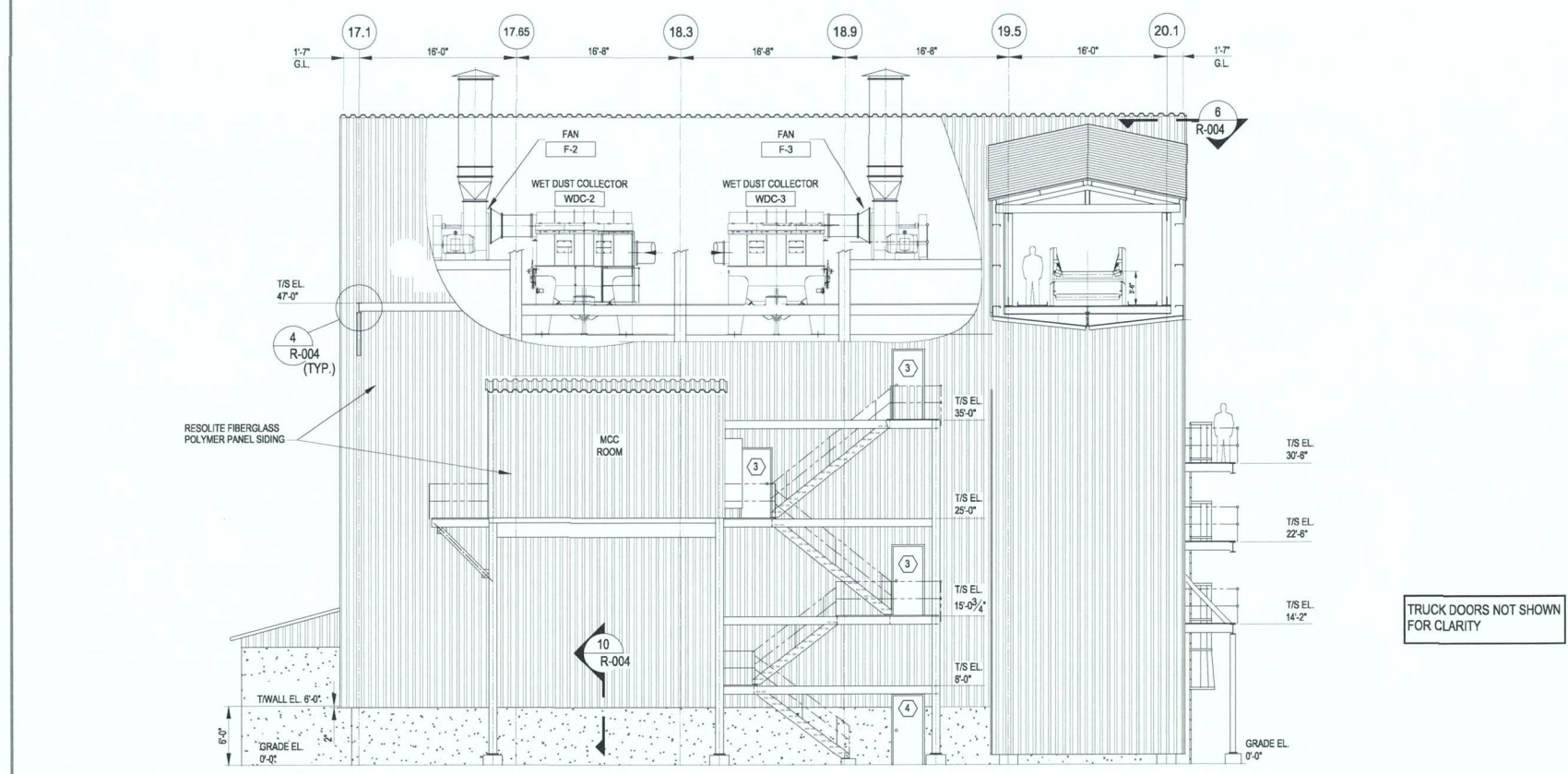
**METAL RECOVERY FACILITY
ELEVATIONS AND PLAN VIEWS**



NORTH ELEVATION



SECTION A



EAST ELEVATION
METALS RECOVERY BLDG. & MCC ONLY

NOTES:
1. ALL NEW SIDING IS TO BE OPAQUE (CRFS25A.1040).
2. FOR GENERAL NOTES AND DOOR SCHEDULE SEE DWG. #3573-R-004.

CASE ENGINEERING, INC
5925 IMPERIAL PARKWAY, SUITE 226
MULBERRY, FLORIDA 33860

PROFESSIONAL ENGINEER DAVID L. NEDERVELD
PROFESSIONAL LICENSE NUMBER 16820

CASE ENGINEERING
MULBERRY, FLORIDA
CERTIFICATION OF AUTHORIZATION 2270

RRT DESIGN & CONSTRUCTION
A Service of Enviro-Services & Constructors, Inc.

C	ISSUE FOR 100% DESIGN	5-2-11
RE	DN	02/01/11
B	ISSUE FOR BUILDING PERMIT	KCC/DLN
A	ISSUE FOR GMP	12-3-10
REV	DESCRIPTION	DATE

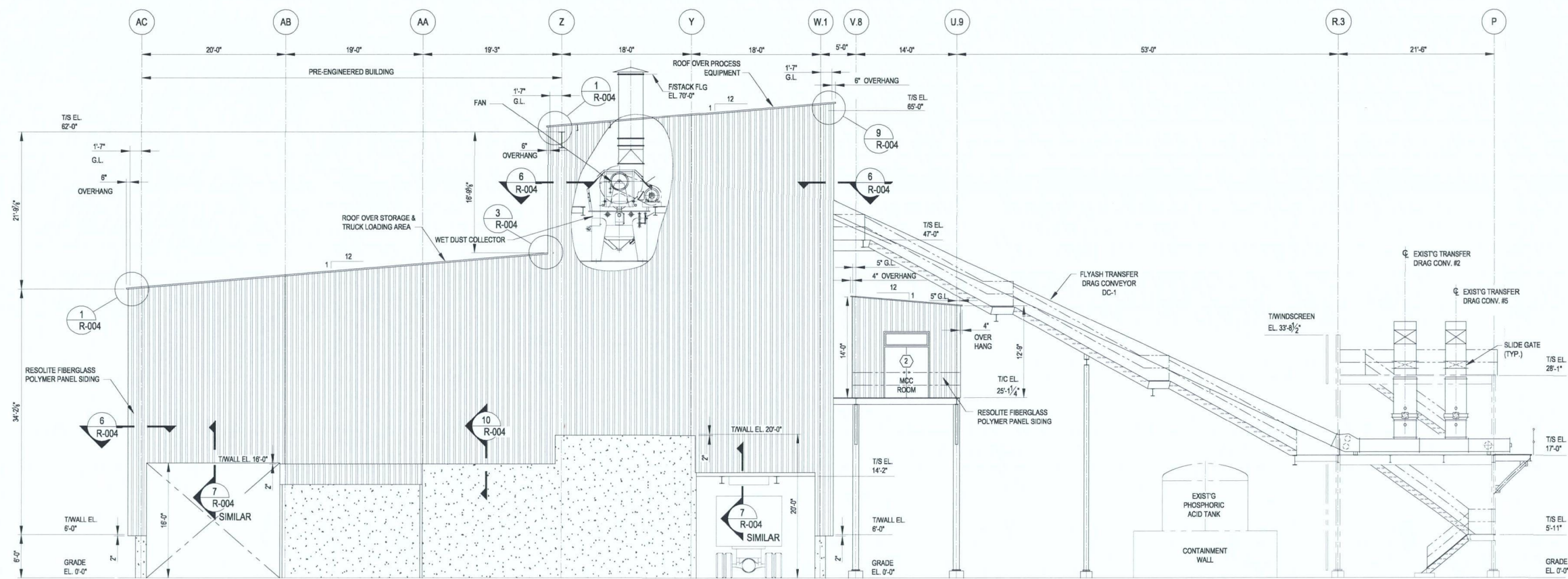
WHEELABRATOR NORTH BROWARD
METAL RECOVERY SYSTEM
ARCHITECTURAL

ELEVATIONS
NORTH & EAST

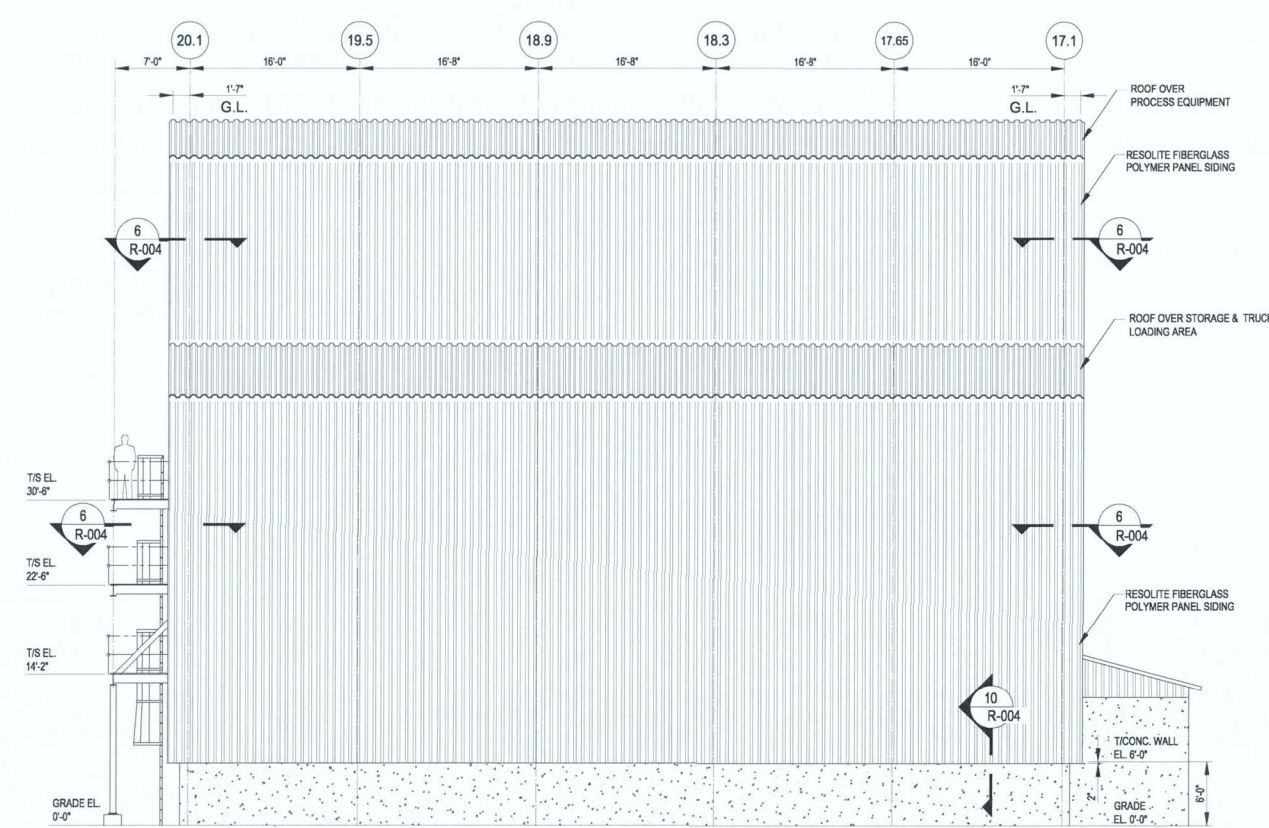
ISSUE	DRAWING HISTORY	REV.	DATE

DRAWN	CHECKED	DESIGNED	APPROVED

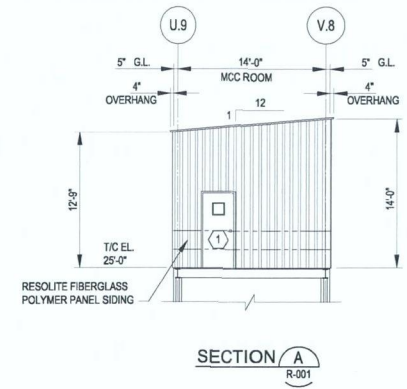
BY	DATE	PROJ. No:	SCALE:
JKC	10/12/10	633-008	1/8" = 1'-0"
DWG. NO.:	3573-R-003	CAD FILE:	3573R003
SHEET SIZE:	D-24x36	SHEET NO.:	04-28-11 @ 13:06



SOUTH ELEVATION





WEST ELEVATION



SECTION A
R-001

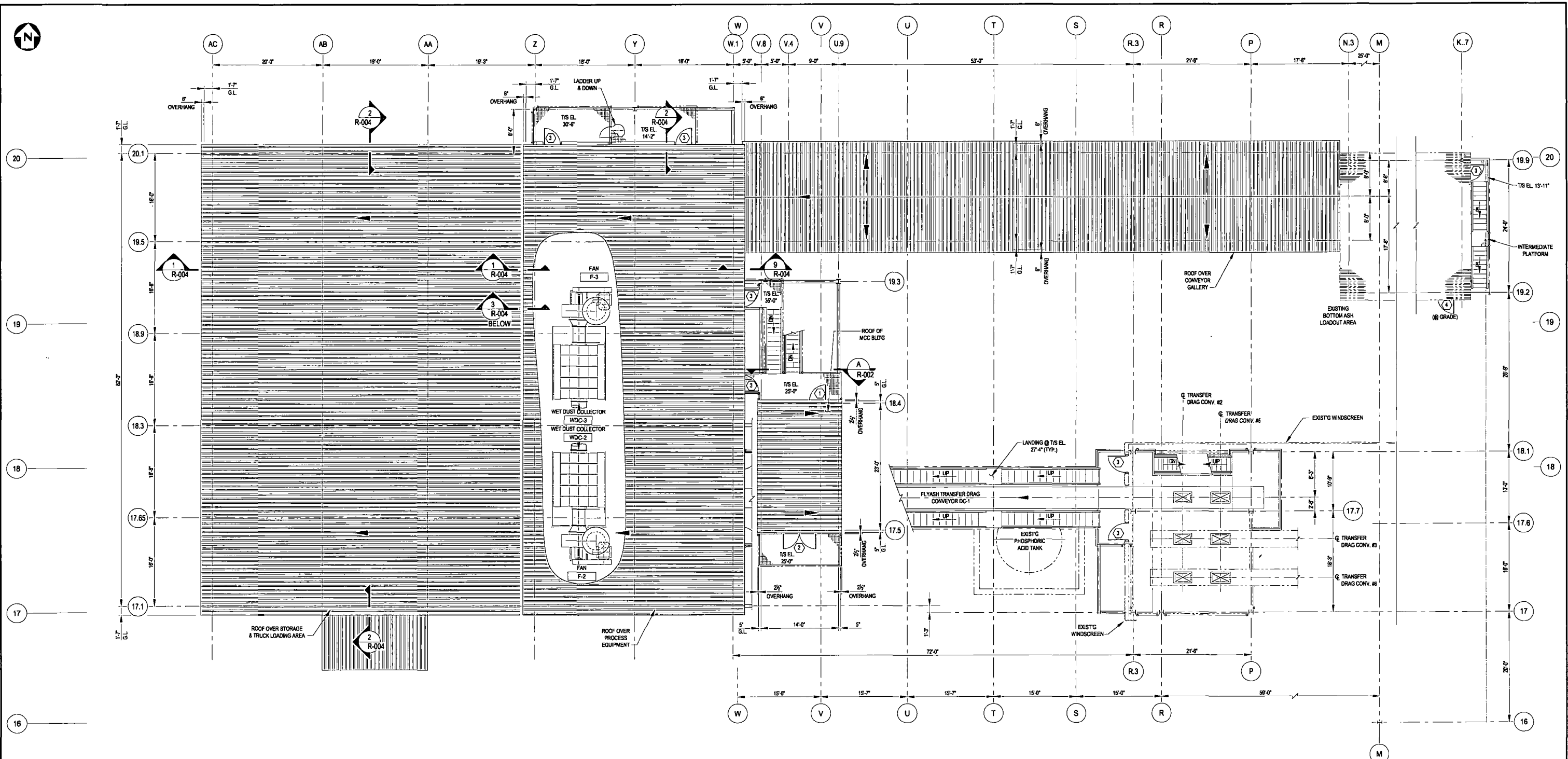
TRUCK DOORS NOT SHOWN FOR CLARITY

NOTES:
1. ALL NEW SIDING IS TO BE OPAQUE (CRFS25A, 1040).
2. FOR GENERAL NOTES AND DOOR SCHEDULE SEE DWG. #3573-R-004.

CASE ENGINEERING, INC 5925 IMPERIAL PARKWAY, SUITE 226 MULBERRY, FLORIDA 33860		 RRT DESIGN & CONSTRUCTION A Service of Enviro-Services & Constructors, Inc.	
PROFESSIONAL ENGINEER PROFESSIONAL LICENSE NUMBER 16820	DAVID L. NEDERVELD 16820		WHEELABRATOR NORTH BROWARD METAL RECOVERY SYSTEM ARCHITECTURAL
 CASE ENGINEERING MULBERRY, FLORIDA CERTIFICATION OF AUTHORIZATION 2270		C ISSUE FOR 100% DESIGN 5-2-11 RE DN B ISSUE FOR BUILDING PERMIT 07/01/11 JKCDLN A ISSUE FOR GMP 12-3-10 KCDLN	ELEVATIONS SOUTH & WEST
REV. DESCRIPTION DATE BY		PROJ. No: 633-008 SCALE: 1/8" = 1'-0"	
DRAWN JKC 10/12/10		DWG. No: 3573-R-002	
DESIGNED		C	
APPROVED		CAD FILE: 3573R002	
APPROVED		SHEET SIZE: D-24x36	
APPROVED		REV	

125 Bayh Road
 Mahwah, NJ 07430
 Tel: 610-756-1868
 Fax: 610-756-1864

PROJECT: 3573 • 3573R002 • 04-28-11 @ 13:06



* ROOFING/SIDING CONNECTED WITH 1/4" SELF-TAPPING SCREWS
S.S. @ 7.2" WITH 1/8" WASHERS

RESOLITE SIDING LOCAL PRODUCT APPROVAL

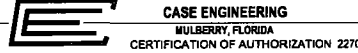
COMPONENTS/CLADDING DESIGN WIND PRESSURE ± 60 PSF. DESIGN CRITERIA:
 1. 1825 (141/17) 140 MPH FOR NOMINAL DESIGN, 3-SECOND GUST.
 2. BUILDING CATEGORY II.
 3. INTERNAL PRESSURE COEFFICIENT ±0.55.
 4. IMPORTANCE FACTOR 1.0
 5. WIND EXPOSURE FACTOR 1C
 THE ALLOWABLE LOAD FOR THE RESOLITE 1040 PANEL (7.2'x15') IS 60 PSF WITH A 5'-0" ALLOWABLE SPAN CRITERIA. THE MAXIMUM ROOFING & SIDING SPAN FOR THIS PROJECT DOES NOT EXCEED 4'-8". THE LOAD/SPAN LIMITS IN THE RESOLITE DESIGN CHARTS IS BASED ON FASTENER WITH 3/8" WASHERS IN EVERY LOW (7.2'). SIGNIFICANT SPAN OR WIND PRESSURE ALLOWABLE INCREASES CAN BE ACHIEVED BY USING 1/2" WASHERS.
 THIS STRUCTURE HAS BEEN DESIGNED USING AN INTERNAL PRESSURE COEFFICIENT OF ±0.55, THEREFORE, THE IMPACT OF WIND BORNE DEBRIS CRITERIA IS NOT APPLICABLE AND WILL AFFECT THE ROOFING AND SIDING PANELS IMPACTED IN CASE OF ROOFING AND SIDING PANEL DAMAGE.

LEGEND	
EXISTING ROOFING	---
NEW ROOFING	----

NOTES:
 1. ALL NEW ROOFING IS TO BE TRANSLUCENT (FS25A 1040).
 2. FOR GENERAL NOTES AND DOOR SCHEDULE SEE DWG. #3573-R-004.

CASE ENGINEERING, INC
 5925 IMPERIAL PARKWAY, SUITE 226
 MULBERRY, FLORIDA 33860

PROFESSIONAL ENGINEER DAVID L. NEDERVELD
 PROFESSIONAL LICENSE NUMBER 16820



ISSUE	DRAWING HISTORY	REV.	DATE

REV	DESCRIPTION	DATE
C	ISSUE FOR 100% DESIGN	5-2-11
B	ISSUE FOR BUILDING PERMIT	07-01-11
A	ISSUE FOR GMP	17-3-10

RRT DESIGN & CONSTRUCTION
 A Service of Enviro-Services & Constructors, Inc.

WHEELABRATOR NORTH BROWARD METALS RECOVERY SYSTEM ARCHITECTURAL

ROOF PLAN

PROJ. No: 633-008 SCALE: 1/8" = 1'-0"

DWG. NO: 3573-R-001

CAD FILE: 3573R001

SHEET SIZE: D-24x36

REV. C

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. 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 now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA
(352) 336-5600 - Phone
(352) 336-6603 - Fax

