



Clean Harbors Florida, LLC.  
7001 Kilo Avenue  
Bartow, Florida 33830  
863.533.6111  
www.cleanharbors.com

August 30, 2018

Sent via Fed Ex

Steven G. Morgan, Air & Solid Waste Permitting Manager  
Permitting & Waste Cleanup Program  
Florida Department of Environmental Protection, Southwest District Office  
13051 North Telecom Parkway  
Temple Terrace, FL 33637-0926  
(813) 470-5700

**Re: Minor Permit Modification for Solid Waste Permit  
Clean Harbors Florida LLC; FLD 980 729 610  
Solid Waste Permit #: 64247-SO-018**

Dear Mr. Morgan,

Please find enclosed the above referenced facility's application to modify the subject permit. This permit minor modification application is to reconfigure the previously approved waste/container shredder and its associated mix tub area. Additionally, information for the model of shredder purchased and being installed has been updated.

The \$250 permit modification fee accompanied by a copy of this letter is being sent to:

Florida Department of Environmental Protection  
Hazardous Waste Program and Permitting  
Post Office Box 3070  
Tallahassee, Florida 32315-3070

A copy of the payment remittance will follow this application submittal.

For this Solid Waste Permit Minor Modification application the following is provided herein:

**Enclosure 1** provides the permit modification application form.

**Enclosure 2** provides a new/replacement site plan for the facility noting the shredder location.

**Enclosure 3** provides replacement pages for Chapter 1, Appendix C of the previously submitted application support documentation as well as replacements for Figures F-1.9a and b. For convenience a "redline" version for this previously submitted information that is affected by this permit modification is also included in addition to the new/replacement information.



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**Enclosure 4** provides revised additional information concerning this permit modification application. For convenience a "redline" version for this previously submitted information that is affected by this permit modification is also included in addition to the new/replacement information.

Also, enclosed you will find a CD with all of the information referenced above included on it.

Please contact me at (423) 413-1218 or [desha.david@cleanharbors.com](mailto:desha.david@cleanharbors.com) with any questions or comments concerning this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read "David A. DeSha".

David A. DeSha  
Sr. Environmental Compliance Manager

Enclosures

cc:

Amber Igoe, CHMM  
Environmental Consultant  
Hazardous Waste Program and Permitting  
2600 Blair Stone Rd., MS 4560  
Florida Department of Environmental Protection  
Tallahassee, FL 32399

Facility File



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## Enclosure 1



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

DEP Form #: 62-701.900(4), F.A.C.

Form Title: Application to Construct, Operate, or  
Modify a Waste Processing Facility

Effective Date: August 12, 2012

Incorporated in Rule: 62-701.710(2), F.A.C.

## APPLICATION TO CONSTRUCT, OPERATE, OR MODIFY A WASTE PROCESSING FACILITY

**GENERAL REQUIREMENT:** Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes (F.S.) and in accordance with Florida Administrative Code (F.A.C.) Chapter 62-701. A minimum of four copies of the application shall be submitted to the Department District Office having jurisdiction over the facility. The appropriate fee in accordance with subsection 62-701.315(4), F.A.C., shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP). Complete appropriate sections for the type of facility for which application is made and include all additional information, drawings, and reports necessary to evaluate the facility.

Please Type or Print in Ink

### A. GENERAL INFORMATION

1. Type of facility (check all that apply):

☐ Transfer Station:

☐ C&D

☐ Class III

☐ Class I

☐ Other Describe: \_\_\_\_\_

☐ Materials Recovery Facility:

☐ C&D Recycling

☐ Class III MRF

☐ Class I MRF

☐ Other Describe: \_\_\_\_\_

☐ Other Facility That Processes But Does Not Dispose Of Solid Waste On-Site:

☐ Storage, Processing or Disposal for Combustion Facilities (not addressed in another permit)

☐ Other Describe: \_\_\_\_\_

NOTE: C&D Disposal facilities that also recycle C&D shall apply on DEP Form 62-701.900(6), F.A.C.

2. Type of application:

☐ Construction/Operation

☐ Operation without Additional Construction

3. Classification of application:

☐ New

☐ Substantial Modification

☐ Renewal

☐ Intermediate Modification

☐ Minor Modification

4. Facility name: \_\_\_\_\_

5. DEP ID number: \_\_\_\_\_ County: \_\_\_\_\_

6. Facility location (main entrance): \_\_\_\_\_

7. Location coordinates:
- Section: \_\_\_\_\_ Township: \_\_\_\_\_ Range: \_\_\_\_\_
- Latitude: \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ " Longitude: \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "
- Datum: \_\_\_\_\_ Coordinate Method: \_\_\_\_\_
- Collected by: \_\_\_\_\_ Company/Affiliation: \_\_\_\_\_
8. Applicant name (operating authority): \_\_\_\_\_
- Mailing address: \_\_\_\_\_
- |                    |      |       |     |
|--------------------|------|-------|-----|
| Street or P.O. Box | City | State | Zip |
|--------------------|------|-------|-----|
- Contact person: \_\_\_\_\_ Telephone: (\_\_\_\_) \_\_\_\_\_
- Title: \_\_\_\_\_
- E-Mail address (if available): \_\_\_\_\_
9. Authorized agent/Consultant: \_\_\_\_\_
- Mailing address: \_\_\_\_\_
- |                    |      |       |     |
|--------------------|------|-------|-----|
| Street or P.O. Box | City | State | Zip |
|--------------------|------|-------|-----|
- Contact person: \_\_\_\_\_ Telephone: (\_\_\_\_) \_\_\_\_\_
- Title: \_\_\_\_\_
- E-Mail address (if available): \_\_\_\_\_
10. Landowner (if different than applicant): \_\_\_\_\_
- Mailing address: \_\_\_\_\_
- |                    |      |       |     |
|--------------------|------|-------|-----|
| Street or P.O. Box | City | State | Zip |
|--------------------|------|-------|-----|
- Contact person: \_\_\_\_\_ Telephone: (\_\_\_\_) \_\_\_\_\_
- E-Mail address (if available): \_\_\_\_\_
11. Cities, towns and areas to be served: \_\_\_\_\_
- \_\_\_\_\_
12. Date site will be ready to be inspected for completion: \_\_\_\_\_
13. Estimated costs:
- Total Construction: \$ \_\_\_\_\_ Closing Costs: \$ \_\_\_\_\_
14. Anticipated construction starting and completion dates:
- From: \_\_\_\_\_ To: \_\_\_\_\_
15. Expected volume of waste to be received: \_\_\_\_\_ yds<sup>3</sup>/day \_\_\_\_\_ tons/day

16. Provide a brief description of the operations planned for this facility: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

## **B. ADDITIONAL INFORMATION**

Please attach the following reports or documentation as required.

1. Provide a description of the operation of the facility that shall include (62-701.710(2)(a), F.A.C.):
  - a. The types of materials, i.e., wastes, recyclable materials or recovered materials, to be managed or processed;
  - b. The expected daily average and maximum weights or volumes of materials to be managed or processed;
  - c. How the materials will be managed or processed;
  - d. How the materials will flow through the facility including locations of the loading, unloading, sorting, processing and storage areas;
  - e. The types of equipment that will be used;
  - f. The maximum time materials will be stored at the facility;
  - g. The maximum amounts of wastes, recyclable materials, and recovered materials that will be stored at the facility at any one time; and
  - h. The expected disposition of materials after leaving the facility.
2. Attach a site plan, signed and sealed by a professional engineer registered under Chapter 471, F.S., with a scale not greater than 200 feet to the inch, which shows the facility location, total acreage of the site, and any other relevant features such as water bodies or wetlands on or within 200 feet of the site, potable water wells on or within 500 feet of the site (62-701.710(2)(b), F.A.C.).
3. Provide a boundary survey and legal description of the property (62-701.710(2)(c), F.A.C.).
4. Provide a construction plan, including engineering calculations, that describes how the applicant will comply with the design requirements of subsection 62-701.710(3), F.A.C. (62-701.710(2)(d), F.A.C.).
5. Provide an operation plan that describes how the applicant will comply with subsection 62-701.710(4), F.A.C. and the recordkeeping requirements of subsection 62-701.710(8), F.A.C. (62-701.710(2)(e), F.A.C.).
6. Provide a closure plan that describes how the applicant will comply with subsection 62-701.710(6), F.A.C. (62-701.710(2)(f), F.A.C.).
7. Provide a contingency plan that describes how the applicant will comply with subsection 62-701.320(16), F.A.C. (62-701.710(2)(g), F.A.C.).
8. Unless exempted by subparagraph 62-701.710(1)(d)1., F.A.C., provide the financial assurance documentation required by subsection 62-701.710(7), F.A.C. (62-701.710(2)(h), F.A.C.).
9. Provide a history and description of any enforcement actions by the applicant described in subsection 62-701.320(3), F.A.C. relating to solid waste management facilities in Florida. (62-701.710(2), F.A.C. and 62-701.320(7)(i), F.A.C.)
10. Provide documentation that the applicant either owns the property or has legal authorization from the property owner to use the site for a waste processing facility (62-701.710(2), F.A.C. and 62-701.320(7)(g), F.A.C.)

C. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

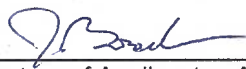
1. Applicant:

The undersigned applicant or authorized representative of Clean Harbors Florida, LLC

is aware that statements made in this form and attached information are an application for a Solid Waste

Permit Modification

Permit from the Florida Department of Environmental Protection and certifies that the information in this application is true, correct and complete to the best of his/her knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

  
Signature of Applicant or Agent  
John Bosek/Facility General Manager  
Name and Title (please type)  
bosek.john@cleanharbors.com  
E-Mail address (if available)

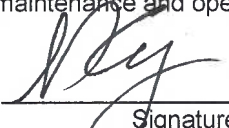
7001 Kilo Avenue  
Mailing Address  
Bartow, FL 33830  
City, State, Zip Code  
(863) 519-6331  
Telephone Number

                      
Date

Attach letter of authorization if agent is not a governmental official, owner, or corporate officer.

2. Professional Engineer registered in Florida (or Public Officer if authorized under Sections 403.707 and 403.7075, Florida Statutes):

This is to certify that the engineering features of this waste processing facility have been designed/examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

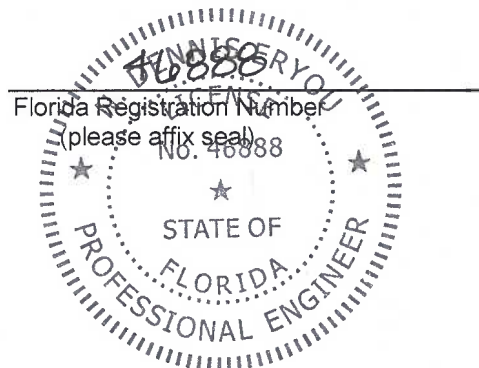
  
Signature  
N. DENNIS ERYOU PHD, PE  
Name and Title (please type)

1460 BREEZY WAY  
Mailing Address  
SPRINGHILL, FL 34608  
City, State, Zip Code

ALEX@ERYOUEENGINEERING.COM  
E-Mail address (if available)

(352) 684-7275  
Telephone Number

8/28/2018  
Date





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Clean Harbors Florida, LLC.

7001 Kilo Avenue

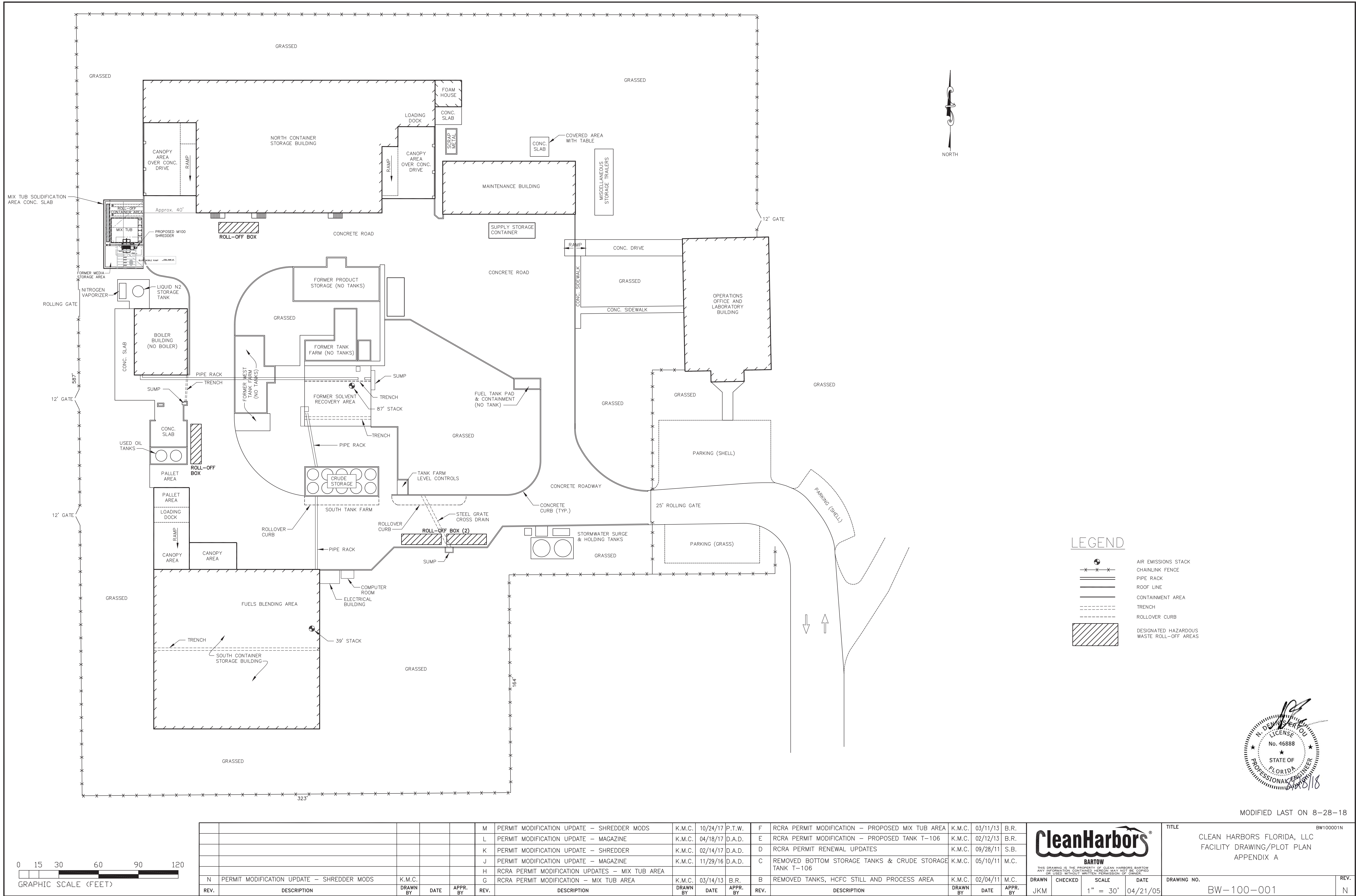
Bartow, Florida 33830

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## Enclosure 2







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## Enclosure 3

**CHAPTER 1**  
**APPENDIX C**

## DESCRIPTION OF OPERATION

### I-C-1.1 Introduction

#### I-C-1.1.1 Process Summary

Clean Harbors Florida LLC (CHF) is in the business of transferring, storing and treating hazardous waste and non-hazardous wastes.

CHF stores waste in containers and tanks prior to shipment offsite for final treatment or disposal. Organic liquids as well as sludges and solids are blended into hazardous waste fuels. For this process, agitated mix tanks are used to develop the blends as shown in the fuels blending flowsheet provided as Figure F-1.2.

CHF uses a can crusher to transfer hazardous waste from smaller containers to larger ones. The can crusher is located in the fuels blending area of the South Container Storage Building (see Figure F-1.5). The waste is transferred from the smaller cans when placed into a can crusher which;

- 1) breaches the cans and crushes them, forcing the material from the cans into a receiving container or;
- 2) by opening the cans and pouring the liquid out, and subsequently placing the can on the can crusher, crushing it so the remaining contents are forced from the can. Generally the cans range in size from one-half pint to five gallon.

The material in the paint cans is analyzed (see Chapter 2) to determine if it can be managed as a fuel grade material. If the material is not a fuel grade material it will be shipped off-site or possibly reclaimed. The can crusher is located within the same secondary containment structure as the fuels blending equipment and is cleaned after each calendar day of use. The crushed empty cans are properly disposed of off-site based on generator knowledge. A process flow sheet for the can crusher is shown in Figure F-1.3.

CHF performs bulking operations of solids. These solids are typically bulked into larger containers (typically a roll-off) from smaller containers, typically 55-gallon drums or cubic yard boxes.

Solids filtering is conducted at CHF. This operation is simple in nature and involves a pump (typically portable), and a solids filter system (typically a basket filter).

Sometimes CHF receives containers of wastes, which have two phases of materials in them (solids and liquids). These solids and liquids are separated using a sludge box type or a roll-off

with a screen near the bottom of the roll-off. The screen is elevated enough for the void beneath it to contain the liquids which flow to the bottom due to gravitational forces. The accumulated liquid is then transferred to a separate container.

CHF also performs consolidation of gases. These gases are typically bulked into larger cylinders from smaller cylinders. The gases managed will have a primary hazard class of flammable gas, 2.1, or nonflammable gas, 2.2. Containers received into the facility are sorted into groups according to their properties and compatibility. The consolidation operations will typically occur in the North Container Storage Building in a well-vented area or on the grounds within the facility's boundary. A log will be kept with the identity of the source containers that have been consolidated into each larger container.

CHF performs non-hazardous waste shredding and solidification. This is performed in the SWMU #16, the Mix-tub Area shown on Figure F-1.9a. Operation details can be found in this document at I-C-1.9

#### I-C-1.1.2 Description of Wastes

CHF receives three general classifications of wastes (RCRA and non-RCRA):

- 1) Processable (On site treatment or management – off site disposal; IE: Fuel Blend, Filtration, Bulking, Consolidation, and Repackaging)
- 2) Non Processable (IE: Storage only, CICO-Container In/ Container Out)
- 3) 10 Day Transfer while enroute to designated facility. (Material not manifested to this facility)

These wastes are listed by EPA Hazardous Waste Code in Appendix II.G.

#### I-C-1.2 Waste Receiving

##### I-C-1.2.1 In-Processing of Wastes

Hazardous wastes delivered to the facility will be sampled and analyzed according to the Waste Analysis Plan (refer to Chapter 2) prior to acceptance for storage and/or treatment on-site. For waste sampled in accordance with Chapter 2, CHF attempts to verify the contents of containerized shipments within 5 working days after arrival, and bulk trucks within four work hours after arrival. For bulk shipments, the manifest is signed and entered into the operating record when the analysis demonstrates its acceptability. For containerized shipments the manifest is signed and entered into the operating record when the containers are unloaded into the staging area and piece count has been verified.

#### I-C-1.2.2 Non-Bulk and Small Bulk Containerized Shipments

Non-bulk containers and smaller bulk containers (such as a tote) will be off-loaded at a Container Storage Building. The containers will be removed from the truck and moved into a drum unloading staging area of a Container Storage Building (see Chapter 2 Section B for designated staging areas). There the containers will be inspected for deterioration and leakage, sampled and analyzed. Following verification of the contents of the shipment with the manifest information, the containers will be moved from the staging area and placed into the storage area designated for safe storage of that particular type of waste (refer to Section B for a description of the system to be used by CHF to segregate incompatible wastes). Incompatible materials will be isolated during staging and analysis. The isolation will be accomplished by placing the wastes in a compatible cell or by only placing wastes in the same compatibility group in the staging area at a particular time.

#### I-C-1.2.3 Large Bulk Shipments

Upon arrival, the contents of these larger bulk containers will be sampled and analyzed in accordance with the Waste Analysis Plan (see Chapter 2, Section A, Appendix H ). Following verification of the acceptability of the material, the contents of the bulk container will be transferred into the appropriate storage tank (as described below), another container, or shipped off-site in the container in which it arrived to the facility. Compatibility between wastes introduced into and combined in tanks will be ensured according to CHF's waste classification scheme (refer to Section B). Incoming waste will be placed into a tank, which contains compatible waste and will not be placed into a tank containing incompatible waste. Furthermore, waste will not be placed in a tank, which previously held incompatible waste unless that tank has been properly cleaned.

#### I-C-1.2.4 Management of Empty Containers

Containers with less than one inch of residue (as well as meeting other 40 CFR 261.7 requirements to qualify as an empty container) will typically be sent off-site to a reclaimer, scrap metal or disposal facility.

Containers with more than one inch of residue (or otherwise not classified as empty) will be shipped off-site to a permitted facility or opened and emptied. If opened and emptied, the remaining sludge residue will be poured or scraped from the container into an accumulation container or directly to a sludge mix tank (T-112 or T-114). Accumulation containers will be in containers meeting DOT performance packaging standards. After emptying the containers in this fashion, they will be reused or loaded on a transport vehicle for shipment to a reclaimer, scrap metal dealer or disposal facility. (The sludge in the accumulation containers will be managed as described in Section I-C-1.7).

### I-C-1.3 Fuel Blending

#### I-C-1.3.1 Wastes Amendable to Fuel Blending

Wastes that are blended into hazardous waste fuel are those that are not reclaimed because they are either too viscous or contaminated to be reclaimed off-site, or they have a low recyclable value. Fuel-grade wastes may include any of those deemed such by the waste analysis.

In 48 FR 11157, published on March 16, 1983, the EPA indicated, as policy, that hazardous waste fuel sent to an industrial furnace to be burned for energy recovery should have at least 5000 BTUs per pound, as generated. In the "BIF Rule" (56 FR 7134, published on February 21, 1991 (Section VII.D.)), the EPA rescinded this policy due to the fact that BIFs are now required to meet very stringent emissions control requirements. Based on this ruling, CHF will now be able to blend, as fuel, material that may have less than 5000 BTUs per pound.

#### I-C-1.3.2 Process Description

Hazardous waste fuel is developed on-site by blending fuel-grade waste from tanks in the South Tank Farm and containerized waste. The fuel is processed by blending to meet hazardous waste fuel specifications for items such as; BTU, water content, and chlorine content. The resulting fuel is pumped to the South Tank Farm or tank trucks for shipment off site.

#### I-C-1.3.3 Containerized Shipments

When adequate storage capacity is available in the South Tank Farm, containers of fuel-grade waste will be moved from their storage area to a containers unloading station. These fuel containers will be opened with spark-proof tools. Containers of fuel bearing mostly liquid wastes will be dumped or pumped to tank T-112, or T-114, blended, and then transferred to the South Tank Farm. In some cases the contents of the containers and contents of T-112 or T-114, may be transferred directly to tankers.

Containers with materials which are too viscous or have too high a solids content and cannot be processed in T-112, or T-114 may be placed in a drum-scraping machine which will loosen the material and reduce solids to a size which will allow the drum to be emptied. The waste may then be placed into T-112 or T-114 or a segregation tray may also be used to reduce waste particle size (refer to Figure F-1.5). Following this, the waste will be transferred to the South Tank Farm or to a tanker. Additionally, the solids may be transferred to an accumulation container for shipment off-site.

#### I-C-1.3.4 Tank Truck Shipments

Tank trucks will be unloaded into tanks after sampling and analysis according to the Waste

Analysis Plan. Waste fuels will be segregated into tanks according to degree of chlorination and BTU value.

#### I-C-1.4 Corrosives and Alkalines

The contents of bulk shipments arriving in tank trucks will be sampled and analyzed according to the Waste Analysis Plan. After confirming the identity of the waste, acidic and alkaline waste will be transferred off-site to a permitted TSDF.

Containerized wastes will be stored in the North Container Storage Building prior to shipment off-site.

The neutralization of containers of these wastes will be conducted inside the curbed portions of the facility. The materials will be neutralized by adding an appropriate neutralizing agent at a rate determined in the compatibility testing described in Chapter Two. Once a waste is neutralized, the LDR status of the waste may be affected.

#### I-C-1.5 Waste Filtering

CHF also receives waste, which is contaminated only with solids. These wastes can be treated by a simple filtering process and then returned to the original generator or re-sold as a product. The process involves transferring the liquid through a filter, which is small enough to retain the solids in the waste. The liquid will be transferred to the intermediate storage tanks, the product storage tanks or a different container. The solids generated by the filtering process will be treated as a hazardous waste and managed on-site as a fuel material or shipped off-site to a permitted TSDF.

The pump(s) and filter(s) will be operated only inside the curbed area of the plant (typically the driveway area), therefore secondary containment will be provided for the process.

#### I-C-1.6 Storage of Waste

All incoming wastes from generators will be stored in either the North or South Container Storage Building, one of eight roll-off boxes, the mix tub or the Tank Farm (unless it is shipped off-site in the transport vehicle in which it was shipped to CHF). The capacities of these areas are:

72,600 gallons -- T-101 to T-110, R202 & R203 (12 tanks)  
106,920 gallons -- South Container Storage Building  
136,400 gallons -- North Container Storage Building  
32,320 gallons -- Four 40 yd<sup>3</sup> roll-off boxes or three 40 yd<sup>3</sup> and one low explosive magazine  
348,240 gallons -- Total capacity for hazardous waste storage



Note: Four roll-offs, shredder and mix tub are used for non-hazardous waste. Total volumes for these are approximately 40,400 gallons

#### I-C-1.7 Sludge Management

Sludges from the container unloading stations and storage tanks will be accumulated in containers for disposal off-site. Sludge will also be generated from the waste filtering system.

All sludges to be disposed of will be analyzed (if necessary) and properly manifested to an EPA-permitted facility. If the sludges are amenable as a fuel additive for use in rotary kilns (e.g., chlorine, water content, and BTU value within acceptable limits) they will be manifested to such a facility for that purpose. If needed, absorbent will be added to containers of these sludges to absorb any free liquids, which may be present before being shipped off-site.

#### I-C-1.8 Storage Only Waste

The waste received at CHF often contains solids that cannot be processed such as pieces of metal, wood, plastic, personal protective equipment (PPE), soil, etc. These items are not processable in the fuels blending equipment. These items are collected and shipped off-site for disposal at a permitted facility. This collected waste material is placed into DOT approved containers such as a drum or a roll-off container before it is shipped off-site.

Waste to be placed into the roll-off container is held in smaller containers, typically 55-gallon drums before it is placed into the roll-off.

CHF generated solids such as pieces of metal, wood, plastic; PPE clothing, soil, etc. are also placed into the roll-off. The waste codes and LDR information applicable to the waste placed into the roll-off are tracked and included on the outgoing manifest and LDR forms.

The roll-off is loaded within the concrete driveway area. This ensures that the driveway contains any accidental spills and its surrounding curb. Should a spill occur, it would be cleaned up as soon as possible. Since the wastes of concern are not liquid in nature, such spills would present only minimal run-off potential. Should solids consolidated into roll offs be in a form of sludge with any free liquids, absorbent may be added as stated in sludge management section above.

A magazine for the storage of consumer fireworks and other products like emergency flares/signals and small arms ammunition prior to transfer offsite for destruction is also located within the concrete driveway area.

#### I-C-1.9 Shredder/Mix-Tub area operations

Area layout can be found on Figure F-1.9a, Shredder/Mix Tub Area layout. Shredder details are

provided on Figure F-1.9b.

These are the steps for workers to solidify waste materials to meet the regulatory requirements to safely dispose of it in a landfill or a WTE incinerator.

Some terms used include:

Shredder Mix Tub, Roll-off, Can, Vactor, Cusco, Guzzler, Excavator, Backhoe, Fork Truck, Ramps, Tarps, Bows, Can Liners, Dump Liners, Operator, Sawdust, Oil Dry, Swellgel/Diaper Dust.

The areas of responsibility include the General Manager who ensures employees are trained and knowledgeable regarding the operation of the solidification process in the mix-tub area. The Supervisors or lead foreman are responsible for training, monitoring and enforcing procedures with the employees. The employee is responsible for following and adhering to safe work practices and provisions found in the SOP for the work area. Employees must inspect equipment, sump in mix-tub area and report any failures or deficiencies to appropriate Supervisor.

Certain elements must be assessed prior to commencement of the work in this area.

Health and safety concerns include:

- *Any incidents, including near misses, are to be reported immediately to the supervisor.*
- Review the Job Hazard Analysis (Appendix 1) to become familiar with the hazards associated with this process.
- Consult the PPE Hazard Assessments (Appendix 2) to be worn for this job task.
- The buddy system (e.g., visual, audio contact, etc.) must be maintained when this process is being conducted.

Environmental aspects are:

- Ensure all applicable monitoring equipment is available.
- If an incident occurs, report it immediately to your supervisor.
- Facility Air Permit restrictions must be considered prior to this operation.
- Incidental releases are to be cleaned up immediately in the process designated PPE.
- If the incident requires additional assistance or equipment, the Contingency Plan may need to be implemented.

Training will incorporate:

- Hazard Communication for site chemicals and fuels
- OSHA regulated substances, as required (e.g., asbestos, arsenic, lead, etc.)
- SOP and OJT training
- Contingency Plan training
- Equipment training (e.g., haul truck, excavator, backhoe, forklift, front end loader, etc.)

The Shredder/Mix-Tub size reduction and solidification process includes:

- Material restrictions: the following wastes shall NOT be processed: activated carbon, reactive materials, oil or solvent-based paint filters, pesticides, oxidizers, grinding swarf,

metal powders, poisons (Hazard Class 6.1), dyes and inks in dry powder form, cyanides, and corrosive solids/sludges.

- RCRA and TSCA wastes must not be solidified using this process.
- Ensure that all preventative maintenance on equipment has been conducted.
- Ensure that all equipment is clean, ready for the next treatment, and operational.
- Ensure that all waste material to be dumped has been sampled, analyzed, compatibility tested, and final coded.
- Ensure that the material is noted on the pick list (e.g., batch list, job sheet) or laboratory treatment recipe.
- Confirm that there is sufficient absorbent to solidify the waste and meet landfill requirements.
- Required equipment: Fork truck, ramps, sawdust, Xsorb, Swellgel/Diaper Dust, tarps, liners, dump trailer, roll-off can, excavator, backhoe, sample jars, collawasa rods, shovel, broom, bungee cords.
- Staffing: 2 equipment operators/laborer.

The actual process is described below:

#### **Receiving (as applicable)**

1. Receiving personnel reviews paperwork and receives within the WinWeb system.
2. Once load/can is received and bulk solids personnel have been contacted, driver enters plant and proceeds to proper location with two copies of the receiving report and one copy of the inbound weight ticket.
3. If the load is in a roll off can and the can is being dropped at the plant, the driver must place the printed drum label on the front of the can before dropping in the designated location.

### **Waste Tracking**

1. Once the waste has been received, it will automatically track into Win Web. Win Web is the electronic system used to track every inbound container. Each container is assigned a unique bar code number for tracking purposes. Each inbound shipment to be solidified is tracked to the mix tub. After the waste is solidified and loaded into roll offs for shipment offsite, it is again linked to each outbound shipping document. Waste can be tracked from inbound receipt to outbound shipment. This can be viewed under "Plant Processes", "Viewing", "View inventory report." This screen will break the waste down by drum number into the specific low cost location that the waste needs to be tracked.
2. Once the waste has been loaded into an outbound roll off/dump trailer, the respective waste tracking drum number can be solid bulked into that container.
3. Once the numbers have been solids bulked into the container, the container can be outbound manifested.

### **Material Processing Operation**

#### **Pre-Operational Inspections**

1. Personnel must perform and document a pre-shift inspection on all equipment to be used. (e.g., fluids, hydraulic hoses, weld joints, etc.)
2. Any equipment found to be unsafe or inoperable must be immediately placed out of service and the Operations Supervisor must be notified.

#### **Shredding/Solidification Procedures**

1. Bulk solids personnel review the paperwork (2 copies: 1 copy with weight ticket to accompany sample to lab (if necessary) and second to remain with Bulk Solids Operations Supervisor) and inspects the load and condition of vehicle (e.g., leaking, faulty/unsafe equipment) If found to be unsafe to unload, vehicle will be placed out of service, Driver will be instructed to call his/her coordinator and Bulk Solids Operations Supervisor (BSOS) will contact maintenance facility or proper individual for repairs prior to unloading.
2. A representative sample along with one copy of the receiving report and weight ticket will be brought to the lab.
3. Lab will run analytical on the sample (great 8) and test for PCB's in accordance with the Waste Analysis Plan (WAP).
4. Lab or qualified individual final codes the sample and enters in WinWeb accordingly.
5. Lab contacts Bulk Solids personnel and informs of final code or possible OffC (Off Compliance). If OffC, compliance manager will be notified.
6. If material is consistent with receiving report, Vactor, Cusco, Roll off, etc. can then be either dumped into proper solidification tub or shredded in the Shredder before entering the Mix Tub. Ensure all loads received from utility companies (liquid and solids) have been tested for PCB's. For potential dust generating loads, respiratory protection is required. Dust generation can be managed by spraying water on the load while dumping.
7. To avoid an accidental release (liquid or solid), BEFORE DUMPING, inspect the

containers/load. Inspections can be performed visually or by using the stick. Respiratory protection is required for this procedure. Ensure the lower valve is clear of liquid before opening the rear door and open the door slowly to avoid an uncontrollable surge of material. Always be in visual contact with all personnel involved in the entire operation.

8. A. Direct placement of wastes in the Mix Tub

I. Once material is emptied from vehicle/containers, the vehicle/roll-off/containers will be rinsed with a sufficient amount of water to clean. Before standing or walking between the truck body and open rear door, ensure the door is propped open with the safety bar or equivalent means if the safety bar is not available. Washwater generated will be collected in the mixtub and solidified with the waste. Alternatively, it may be collected and pumped into one of the existing RCRA tanks. It will be characterized and shipped offsite for disposal.

II. Close the rear door of vehicle/can and properly secure with locking dogs or mechanism.

III. Driver pulls onto scale and has an outbound weight stamped below the inbound weight and exits plant.

B. Shredding wastes prior to placement in the Mix Tub

I. Containers of non-hazardous wastes are moved from the North and/or South warehouse with forktrucks, drum dollies, etc., are staged in the containment areas in front and/or adjacent to the shredder before being placed in the shredder feed chute using a forktruck. Forktrucks used are equipped with the proper devices for use with various types of containers such as grapples used to securely lift and manipulate up/down/sideways waste containers being placed in the shredder feed chute.

II. Secured containers of non-hazardous waste are also moved from the North and/or South warehouse by forktruck, drum dolly, etc., and placed directly in the shredder feed chute.

III. The shredder is actuated by a trained operator and shreds the wastes which then exits the shredder via its dump chute and enters the Mix Tub. Shredder operations can be continuous or in batches depending upon the types and volumes of wastes being shredded prior to solidification. non-hazardous wastes are shredded.

9. Solidification reagent is added to the mixtub using a backhoe or front end loader. The waste and solidification reagent will be physically mixed using a backhoe or excavator. The waste is mixed until no free liquid is present.

10. Once the waste has been solidified, it is loaded into roll-offs or dump trailers for shipment offsite. The empty roll-off or dump trailer is staged adjacent to the mixtub. The backhoe or excavator is used to transfer the solidified material.

11. Examples of solidification materials, blends and uses. These reagents have been confirmed to physically solidify waste. No chemical treatment will occur.

- 6-oil: Sawdust
- Manhole sludge: Oil dry and sawdust
- Non-haz liquid: Swellgel/Diaper Dust and sawdust

### **Process Interruptions**

1. Power Loss
  - Dumping of vehicle will be ceased if the loss creates inadequate lighting (e.g., second or third shift operations) or a loss of the fire suppression system. Vehicle needs to be safely secured and dumping operation cannot resume until power is restored and all systems are back on line.
2. If any of the following occur, the shredding/dumping process needs to be immediately ceased and the appropriate individual(s) need to be notified. (e.g., General Manager, Health and Safety Manager, Compliance Manager, Bulk Solids Operations Supervisor) A determination will be made as to whether or not to implement the Contingency Plan based on the locations permit requirements.
  - Fires
  - Reactions (off gassing, excessive dust, odors)
  - Spills
  - Incorrect material dumped into tub or container
  - Worker exhibits signs and symptoms of exposure.
  - Injury

### **Shut Down or Precipitation Events**

All containers must be covered when not actively being processed.

All containers must be covered during rain events.

At end of each shift/day, the area in which the shredding/mix tub operation occurs and the equipment used needs to be properly cleaned and inspected, and accumulated liquids removed from secondary containments.

- Shut-down Shredder.
- Remove excess waste and debris from the excavator/backhoe bucket and any other equipment used, inspect for any cracks or signs of damage, and stage equipment in proper staging area.
- Cover all containers (includes mixtub)
- Clean-up work area and return all equipment to proper storage areas. If any waste spills in the concrete containment area, it must be removed and the area washed with water. Washwater generated will typically be collected in the mixtub and solidified with the waste. Alternatively, it may be collected and pumped into one of the existing RCRA tanks. It will be characterized and shipped offsite for disposal.
- Remove all contaminated PPE and place in approved container.
- Ensure all tracking/receiving reports are turned into lab or supervisor and report any discrepancies or equipment issues.
- Any liquid in mix-tub area and/or shredder secondary containment will be pumped into mix-tub for solidification this would include all liquids in this area. Alternatively, it may be collected and pumped into one of the existing RCRA tanks. Collected accumulated liquids will be characterized as needed prior to being shipped offsite for disposal.

Uncontaminated accumulated rainwater may be managed as stormwater using the facility's existing collection and discharge to POTW methods and procedures.

- Secure Shredder to include power disengagement.

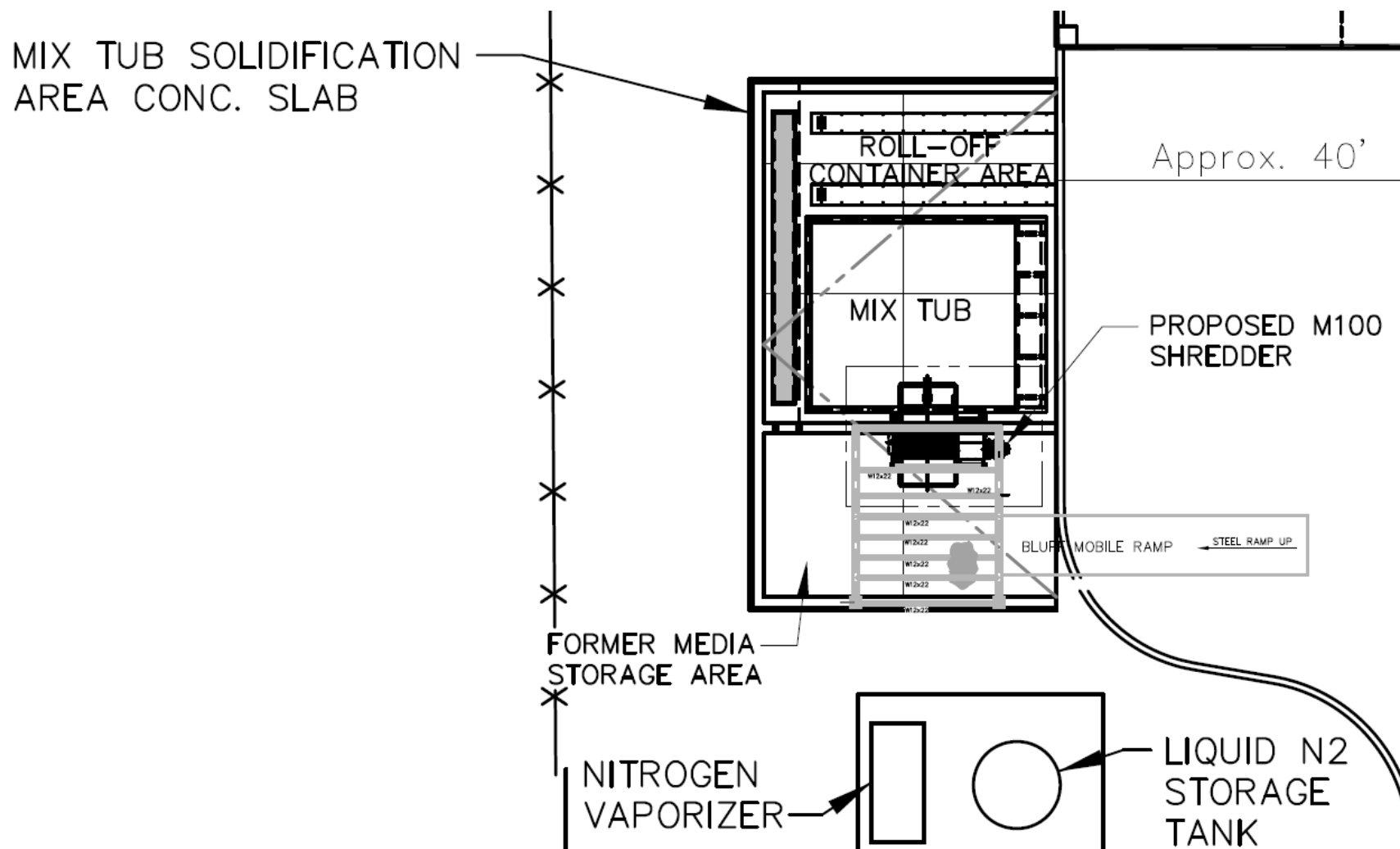
Employees will be trained on operation process and the training will be documented. An SOP has been developed from which employees will receive training which will include some OJT as well.

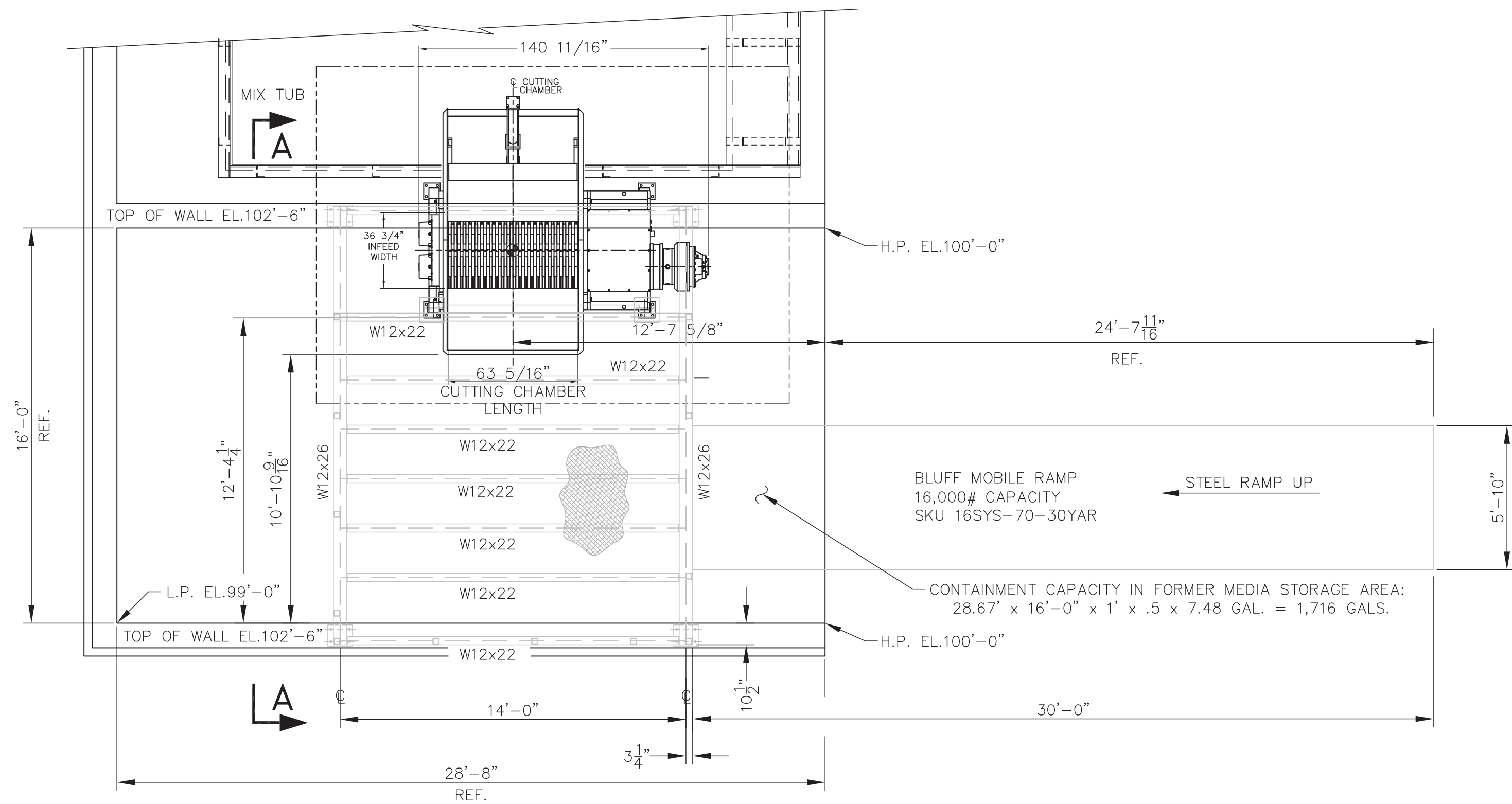
## **LIST OF FIGURES**

1. Figure F-1.2 Fuels Blending Process Flowsheet
2. Figure F-1.3 Can Crusher Process Flowsheet
3. Figure F-1.5 South Container Storage Building
4. Figure F-1.9a Shredder/Mix Tub Area Layout
5. Figure F-1.9b Non-hazardous Waste Shredder

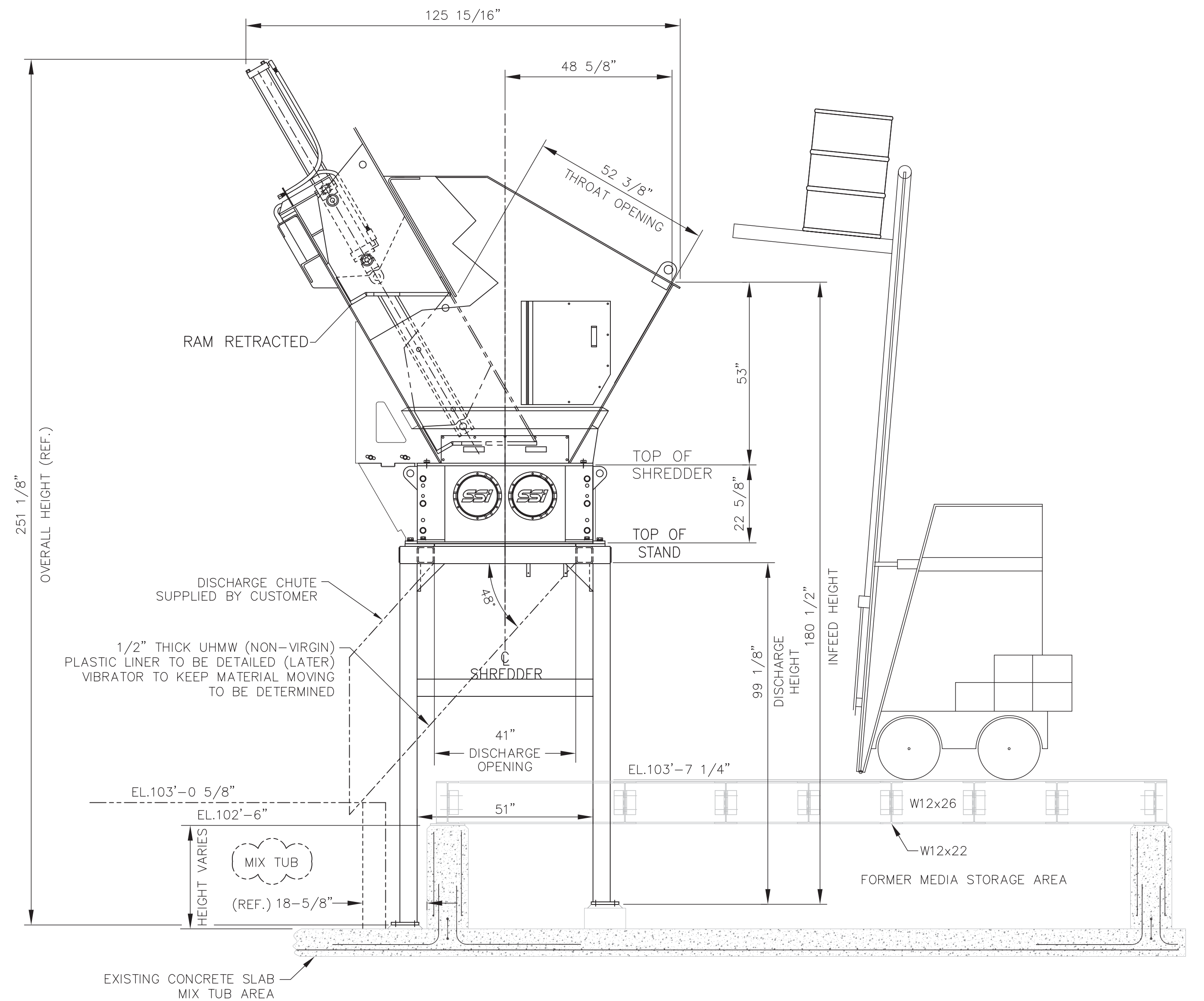


Figure F-1.9a Shredder/Mix Tub Area Layout





PLAN  
SCALE: 1/4" = 1'-0"

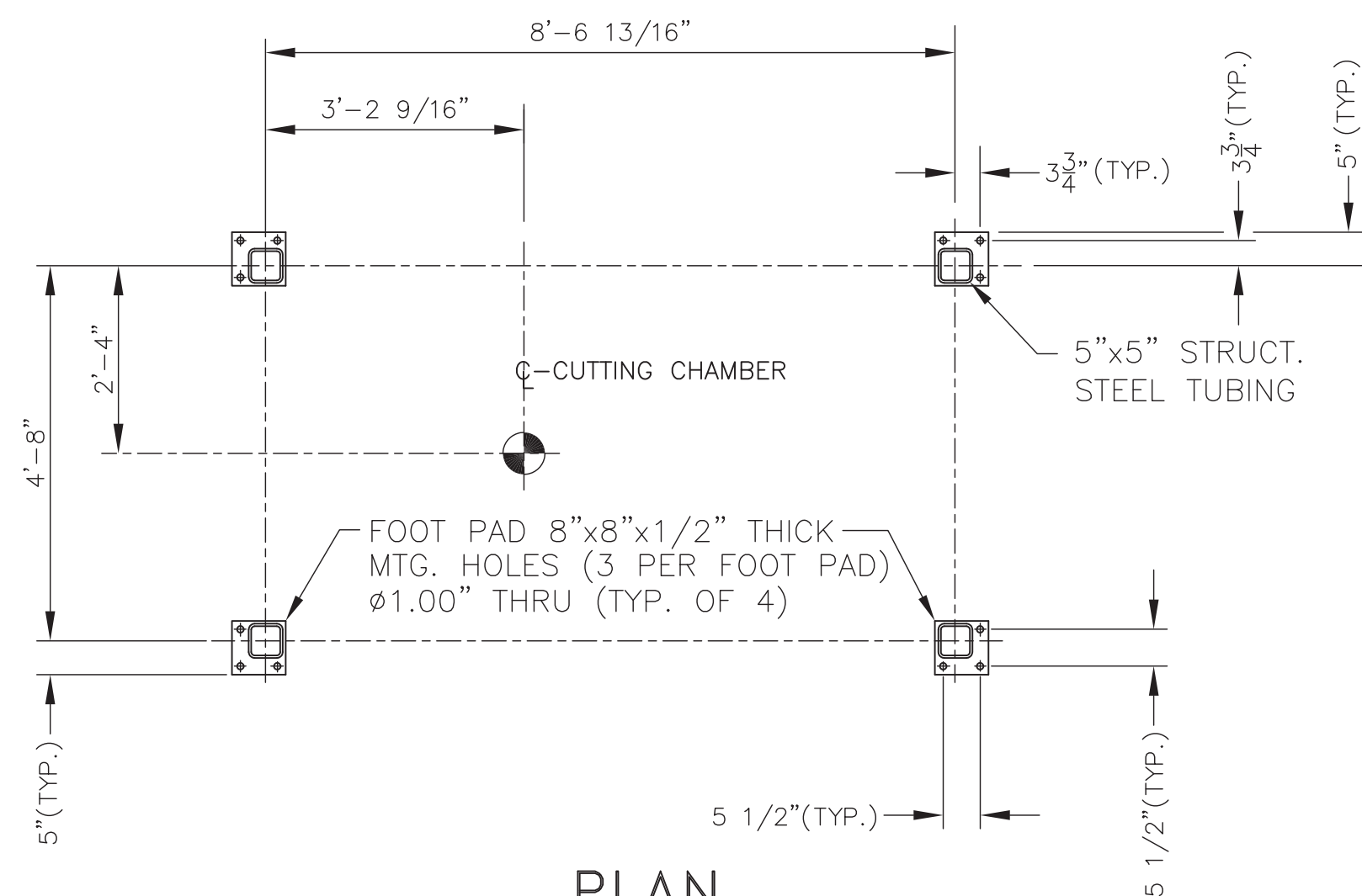


SECTION A-A  
SCALE: 1/2" = 1'-0"

## NOTES:

- STRUCTURAL STEEL SHALL BE A-36 GRADE. ALL WELDING DETAILS AS PER AISC CODE. ALL WELDING SHALL BE BY AWS CERTIFIED WELDERS.
- STRUCTURAL STEEL TO BE PRIME COATED AND FINISH COATED TO SUIT OWNERS REQUIREMENTS.
- PLATFORM IS DESIGNED FOR 5,000 POUND RATED FORKLIFT OPERATION WITH MAXIMUM LOAD RATING OF 13,370 POUNDS.
- FOR DESIGN PURPOSES THE MAXIMUM FORKLIFT AXLE LOAD IS 85% OF THE FULLY LOADED MACHINE WEIGHT SO 11,365 POUNDS.
- SHREDDER SHOWN IS MODEL M100H(63).
- ELECTRICAL PANEL NOT SHOWN.
- DRAWING DEPICTS SHREDDER ON STANDARD STAND. HEIGHT OF STAND CAN BE CHANGED TO SUIT CUSTOMER REQUIREMENTS. STAND CROSSMEMBER IS LOCATED AS SHOWN, AT HALF OF STAND HEIGHT. CROSSMEMBER IS DELETED IF STAND HEIGHT IS LESS THAN 24".
- DIMENSIONS MAY DIFFER FROM ROUNDED VALUES ON SPECIFICATIONS.

ACLST<sup>SM</sup> SSP<sup>SM</sup> AND THE HOPPER RAM DEVICE ARE PATENTED FEATURES, EXCLUSIVE TO SSI SHREDDING SYSTEMS INC.




PLAN  
FOOT PAD LOCATIONS  
SCALE: 1/2" = 1'-0"

Figure F-1.9b

"NOT FOR CONSTRUCTION – PERMITTING ONLY"

LAST MODIFIED ON 8-23-18

												64BW560060-4A									
								CLEAN HARBORS FLORIDA, LLC				CLEAN HARBORS FLORIDA, LLC									
								7001 KILO AVENUE, BARTOW, FLORIDA				7001 KILO AVENUE, BARTOW, FLORIDA									
								PROPOSED				PROPOSED									
								M100 SHREDDER LAYOUT & DETAILS				M100 SHREDDER LAYOUT & DETAILS									
A PERMIT MODIFICATION UPDATE - M100 SHREDDER				KMC DRAWN BY		DATE		APPR.		DRAWN		CHECKED		SCALE		DATE		DRAWING NO.		REV.	
REV. DESCRIPTION				K.M.C.						K.M.C.				AS NOTED		08/06/18		64BW-5600-604		A	

**CHAPTER 1**  
**APPENDIX C**

## DESCRIPTION OF OPERATION

### I-C-1.1 Introduction

#### I-C-1.1.1 Process Summary

Clean Harbors Florida LLC (CHF) is in the business of transferring, storing and treating hazardous waste and non-hazardous wastes.

CHF stores waste in containers and tanks prior to shipment offsite for final treatment or disposal. Organic liquids as well as sludges and solids are blended into hazardous waste fuels. For this process, agitated mix tanks are used to develop the blends as shown in the fuels blending flowsheet provided as Figure F-1.2.

CHF uses a can crusher to transfer hazardous waste from smaller containers to larger ones. The can crusher is located in the fuels blending area of the South Container Storage Building (see Figure F-1.5). The waste is transferred from the smaller cans when placed into a can crusher which;

- 1) breaches the cans and crushes them, forcing the material from the cans into a receiving container or;
- 2) by opening the cans and pouring the liquid out, and subsequently placing the can on the can crusher, crushing it so the remaining contents are forced from the can. Generally the cans range in size from one-half pint to five gallon.

The material in the paint cans is analyzed (see Chapter 2) to determine if it can be managed as a fuel grade material. If the material is not a fuel grade material it will be shipped off-site or possibly reclaimed. The can crusher is located within the same secondary containment structure as the fuels blending equipment and is cleaned after each calendar day of use. The crushed empty cans are properly disposed of off-site based on generator knowledge. A process flow sheet for the can crusher is shown in Figure F-1.3.

CHF performs bulking operations of solids. These solids are typically bulked into larger containers (typically a roll-off) from smaller containers, typically 55-gallon drums or cubic yard boxes.

Solids filtering is conducted at CHF. This operation is simple in nature and involves a pump (typically portable), and a solids filter system (typically a basket filter).

Sometimes CHF receives containers of wastes, which have two phases of materials in them (solids and liquids). These solids and liquids are separated using a sludge box type or a roll-off

with a screen near the bottom of the roll-off. The screen is elevated enough for the void beneath it to contain the liquids which flow to the bottom due to gravitational forces. The accumulated liquid is then transferred to a separate container.

CHF also performs consolidation of gases. These gases are typically bulked into larger cylinders from smaller cylinders. The gases managed will have a primary hazard class of flammable gas, 2.1, or nonflammable gas, 2.2. Containers received into the facility are sorted into groups according to their properties and compatibility. The consolidation operations will typically occur in the North Container Storage Building in a well-vented area or on the grounds within the facility's boundary. A log will be kept with the identity of the source containers that have been consolidated into each larger container.

CHF performs non-hazardous waste shredding and solidification. This is performed in the SWMU #16, the Mix-tub Area shown on Figure F-1.9a. Operation details can be found in this document at I-C-1.9

#### I-C-1.1.2 Description of Wastes

CHF receives three general classifications of wastes (RCRA and non-RCRA):

- 1) Processable (On site treatment or management – off site disposal; IE: Fuel Blend, Filtration, Bulking, Consolidation, and Repackaging)
- 2) Non Processable (IE: Storage only, CICO-Container In/ Container Out)
- 3) 10 Day Transfer while enroute to designated facility. (Material not manifested to this facility)

These wastes are listed by EPA Hazardous Waste Code in Appendix II.G.

#### I-C-1.2 Waste Receiving

##### I-C-1.2.1 In-Processing of Wastes

Hazardous wastes delivered to the facility will be sampled and analyzed according to the Waste Analysis Plan (refer to Chapter 2) prior to acceptance for storage and/or treatment on-site. For waste sampled in accordance with Chapter 2, CHF attempts to verify the contents of containerized shipments within 5 working days after arrival, and bulk trucks within four work hours after arrival. For bulk shipments, the manifest is signed and entered into the operating record when the analysis demonstrates its acceptability. For containerized shipments the manifest is signed and entered into the operating record when the containers are unloaded into the staging area and piece count has been verified.

### I-C-1.2.2 Non-Bulk and Small Bulk Containerized Shipments

Non-bulk containers and smaller bulk containers (such as a tote) will be off-loaded at a Container Storage Building. The containers will be removed from the truck and moved into a drum unloading staging area of a Container Storage Building (see Chapter 2 Section B for designated staging areas). There the containers will be inspected for deterioration and leakage, sampled and analyzed. Following verification of the contents of the shipment with the manifest information, the containers will be moved from the staging area and placed into the storage area designated for safe storage of that particular type of waste (refer to Section B for a description of the system to be used by CHF to segregate incompatible wastes). Incompatible materials will be isolated during staging and analysis. The isolation will be accomplished by placing the wastes in a compatible cell or by only placing wastes in the same compatibility group in the staging area at a particular time.

### I-C-1.2.3 Large Bulk Shipments

Upon arrival, the contents of these larger bulk containers will be sampled and analyzed in accordance with the Waste Analysis Plan (see Chapter 2, Section A, Appendix H ). Following verification of the acceptability of the material, the contents of the bulk container will be transferred into the appropriate storage tank (as described below), another container, or shipped off-site in the container in which it arrived to the facility. Compatibility between wastes introduced into and combined in tanks will be ensured according to CHF's waste classification scheme (refer to Section B). Incoming waste will be placed into a tank, which contains compatible waste and will not be placed into a tank containing incompatible waste. Furthermore, waste will not be placed in a tank, which previously held incompatible waste unless that tank has been properly cleaned.

### I-C-1.2.4 Management of Empty Containers

Containers with less than one inch of residue (as well as meeting other 40 CFR 261.7 requirements to qualify as an empty container) will typically be sent off-site to a reclaimer, scrap metal or disposal facility.

Containers with more than one inch of residue (or otherwise not classified as empty) will be shipped off-site to a permitted facility or opened and emptied. If opened and emptied, the remaining sludge residue will be poured or scraped from the container into an accumulation container or directly to a sludge mix tank (T-112 or T-114). Accumulation containers will be in containers meeting DOT performance packaging standards. After emptying the containers in this fashion, they will be reused or loaded on a transport vehicle for shipment to a reclaimer, scrap metal dealer or disposal facility. (The sludge in the accumulation containers will be managed as described in Section I-C-1.7).



### I-C-1.3 Fuel Blending

#### I-C-1.3.1 Wastes Amendable to Fuel Blending

Wastes that are blended into hazardous waste fuel are those that are not reclaimed because they are either too viscous or contaminated to be reclaimed off-site, or they have a low recyclable value. Fuel-grade wastes may include any of those deemed such by the waste analysis.

In 48 FR 11157, published on March 16, 1983, the EPA indicated, as policy, that hazardous waste fuel sent to an industrial furnace to be burned for energy recovery should have at least 5000 BTUs per pound, as generated. In the "BIF Rule" (56 FR 7134, published on February 21, 1991 (Section VII.D.)), the EPA rescinded this policy due to the fact that BIFs are now required to meet very stringent emissions control requirements. Based on this ruling, CHF will now be able to blend, as fuel, material that may have less than 5000 BTUs per pound.

#### I-C-1.3.2 Process Description

Hazardous waste fuel is developed on-site by blending fuel-grade waste from tanks in the South Tank Farm and containerized waste. The fuel is processed by blending to meet hazardous waste fuel specifications for items such as; BTU, water content, and chlorine content. The resulting fuel is pumped to the South Tank Farm or tank trucks for shipment off site.

#### I-C-1.3.3 Containerized Shipments

When adequate storage capacity is available in the South Tank Farm, containers of fuel-grade waste will be moved from their storage area to a containers unloading station. These fuel containers will be opened with spark-proof tools. Containers of fuel bearing mostly liquid wastes will be dumped or pumped to tank T-112, or T-114, blended, and then transferred to the South Tank Farm. In some cases the contents of the containers and contents of T-112 or T-114, may be transferred directly to tankers.

Containers with materials which are too viscous or have too high a solids content and cannot be processed in T-112, or T-114 may be placed in a drum-scraping machine which will loosen the material and reduce solids to a size which will allow the drum to be emptied. The waste may then be placed into T-112 or T-114 or a segregation tray may also be used to reduce waste particle size (refer to Figure F-1.5). Following this, the waste will be transferred to the South Tank Farm or to a tanker. Additionally, the solids may be transferred to an accumulation container for shipment off-site.

#### I-C-1.3.4 Tank Truck Shipments

Tank trucks will be unloaded into tanks after sampling and analysis according to the Waste

Analysis Plan. Waste fuels will be segregated into tanks according to degree of chlorination and BTU value.

#### I-C-1.4 Corrosives and Alkalines

The contents of bulk shipments arriving in tank trucks will be sampled and analyzed according to the Waste Analysis Plan. After confirming the identity of the waste, acidic and alkaline waste will be transferred off-site to a permitted TSDF.

Containerized wastes will be stored in the North Container Storage Building prior to shipment off-site.

The neutralization of containers of these wastes will be conducted inside the curbed portions of the facility. The materials will be neutralized by adding an appropriate neutralizing agent at a rate determined in the compatibility testing described in Chapter Two. Once a waste is neutralized, the LDR status of the waste may be affected.

#### I-C-1.5 Waste Filtering

CHF also receives waste, which is contaminated only with solids. These wastes can be treated by a simple filtering process and then returned to the original generator or re-sold as a product. The process involves transferring the liquid through a filter, which is small enough to retain the solids in the waste. The liquid will be transferred to the intermediate storage tanks, the product storage tanks or a different container. The solids generated by the filtering process will be treated as a hazardous waste and managed on-site as a fuel material or shipped off-site to a permitted TSDF.

The pump(s) and filter(s) will be operated only inside the curbed area of the plant (typically the driveway area), therefore secondary containment will be provided for the process.

#### I-C-1.6 Storage of Waste

All incoming wastes from generators will be stored in either the North or South Container Storage Building, one of eight roll-off boxes, the mix tub or the Tank Farm (unless it is shipped off-site in the transport vehicle in which it was shipped to CHF). The capacities of these areas are:

72,600 gallons -- T-101 to T-110, R202 & R203 (12 tanks)

106,920 gallons -- South Container Storage Building

136,400 gallons -- North Container Storage Building

32,320 gallons -- Four 40 yd<sup>3</sup> roll-off boxes or three 40 yd<sup>3</sup> and one low explosive magazine

348,240 gallons -- Total capacity for hazardous waste storage



Note: Four roll-offs, shredder and mix tub are used for non-hazardous waste.

Total volumes for these are approximately 40,400 gallons

#### I-C-1.7 Sludge Management

Sludges from the container unloading stations and storage tanks will be accumulated in containers for disposal off-site. Sludge will also be generated from the waste filtering system.

All sludges to be disposed of will be analyzed (if necessary) and properly manifested to an EPA-permitted facility. If the sludges are amenable as a fuel additive for use in rotary kilns (e.g., chlorine, water content, and BTU value within acceptable limits) they will be manifested to such a facility for that purpose. If needed, absorbent will be added to containers of these sludges to absorb any free liquids, which may be present before being shipped off-site.

#### I-C-1.8 Storage Only Waste

The waste received at CHF often contains solids that cannot be processed such as pieces of metal, wood, plastic, personal protective equipment (PPE), soil, etc. These items are not processable in the fuels blending equipment. These items are collected and shipped off-site for disposal at a permitted facility. This collected waste material is placed into DOT approved containers such as a drum or a roll-off container before it is shipped off-site.

Waste to be placed into the roll-off container is held in smaller containers, typically 55-gallon drums before it is placed into the roll-off.

CHF generated solids such as pieces of metal, wood, plastic; PPE clothing, soil, etc. are also placed into the roll-off. The waste codes and LDR information applicable to the waste placed into the roll-off are tracked and included on the outgoing manifest and LDR forms.

The roll-off is loaded within the concrete driveway area. This ensures that the driveway contains any accidental spills and its surrounding curb. Should a spill occur, it would be cleaned up as soon as possible. Since the wastes of concern are not liquid in nature, such spills would present only minimal run-off potential. Should solids consolidated into roll offs be in a form of sludge with any free liquids, absorbent may be added as stated in sludge management section above.

A magazine for the storage of consumer fireworks and other products like emergency flares/signals and small arms ammunition prior to transfer offsite for destruction is also located within the concrete driveway area.

#### I-C-1.9 Shredder/Mix-Tub area operations

Area layout can be found on Figure F-1.9a, Shredder/Mix Tub Area layout. Shredder details are

provided on Figure F-1.9b. ~~Shredder secondary containment details are shown on Figure F-1.9c. Shredder platform design and structural support are shown on Figures F-1.9d and e.~~

These are the steps for workers to solidify waste materials to meet the regulatory requirements to safely dispose of it in a landfill or a WTE incinerator.

Some terms used include:

Shredder Mix Tub, Roll-off, Can, Vactor, Cusco, Guzzler, Excavator, Backhoe, Fork Truck, Ramps, Tarps, Bows, Can Liners, Dump Liners, Operator, Sawdust, Oil Dry, Swellgel/Diaper Dust.

The areas of responsibility include the General Manager who ensures employees are trained and knowledgeable regarding the operation of the solidification process in the mix-tub area. The Supervisors or lead foreman are responsible for training, monitoring and enforcing procedures with the employees. The employee is responsible for following and adhering to safe work practices and provisions found in the SOP for the work area. Employees must inspect equipment, sump in mix-tub area and report any failures or deficiencies to appropriate Supervisor.

Certain elements must be assessed prior to commencement of the work in this area.

Health and safety concerns include:

- *Any incidents, including near misses, are to be reported immediately to the supervisor.*
- Review the Job Hazard Analysis (Appendix 1) to become familiar with the hazards associated with this process.
- Consult the PPE Hazard Assessments (Appendix 2) to be worn for this job task.
- The buddy system (e.g., visual, audio contact, etc.) must be maintained when this process is being conducted.

Environmental aspects are:

- Ensure all applicable monitoring equipment is available.
- If an incident occurs, report it immediately to your supervisor.
- Facility Air Permit restrictions must be considered prior to this operation.
- Incidental releases are to be cleaned up immediately in the process designated PPE.
- If the incident requires additional assistance or equipment, the Contingency Plan may need to be implemented.

Training will incorporate:

- Hazard Communication for site chemicals and fuels
- OSHA regulated substances, as required (e.g., asbestos, arsenic, lead, etc.)
- SOP and OJT training
- Contingency Plan training
- Equipment training (e.g., haul truck, excavator, backhoe, forklift, front end loader, etc.)

The Shredder/Mix-Tub size reduction and solidification process includes:

- Material restrictions: the following wastes shall NOT be processed: activated carbon, reactive materials, oil or solvent-based paint filters, pesticides, oxidizers, grinding swarf, metal powders, poisons (Hazard Class 6.1), dyes and inks in dry powder form, cyanides, and corrosive solids/sludges.
- RCRA and TSCA wastes must not be solidified using this process.
- Ensure that all preventative maintenance on equipment has been conducted.
- Ensure that all equipment is clean, ready for the next treatment, and operational.
- Ensure that all waste material to be dumped has been sampled, analyzed, compatibility tested, and final coded.
- Ensure that the material is noted on the pick list (e.g., batch list, job sheet) or laboratory treatment recipe.
- Confirm that there is sufficient absorbent to solidify the waste and meet landfill requirements.
- Required equipment: Fork truck, ramps, sawdust, Xsorb, Swellgel/Diaper Dust, tarps, liners, dump trailer, roll-off can, excavator, backhoe, sample jars, collawasa rods, shovel, broom, bungee cords.
- Staffing: 2 equipment operators/laborer.

The actual process is described below:

**Receiving (as applicable)**

1. Receiving personnel reviews paperwork and receives within the WinWeb system.
2. Once load/can is received and bulk solids personnel have been contacted, driver enters plant and proceeds to proper location with two copies of the receiving report and one copy of the inbound weight ticket.
3. If the load is in a roll off can and the can is being dropped at the plant, the driver must place the printed drum label on the front of the can before dropping in the designated location.

### **Waste Tracking**

1. Once the waste has been received, it will automatically track into Win Web. Win Web is the electronic system used to track every inbound container. Each container is assigned a unique bar code number for tracking purposes. Each inbound shipment to be solidified is tracked to the mix tub. After the waste is solidified and loaded into roll offs for shipment offsite, it is again linked to each outbound shipping document. Waste can be tracked from inbound receipt to outbound shipment. This can be viewed under “Plant Processes”, “Viewing”, “View inventory report.” This screen will break the waste down by drum number into the specific low cost location that the waste needs to be tracked.
2. Once the waste has been loaded into an outbound roll off/dump trailer, the respective waste tracking drum number can be solid bulked into that container.
3. Once the numbers have been solids bulked into the container, the container can be outbound manifested.

### **Material Processing Operation**

#### **Pre-Operational Inspections**

1. Personnel must perform and document a pre-shift inspection on all equipment to be used. (e.g., fluids, hydraulic hoses, weld joints, etc.)
2. Any equipment found to be unsafe or inoperable must be immediately placed out of service and the Operations Supervisor must be notified.

#### **Shredding/Solidification Procedures**

1. Bulk solids personnel review the paperwork (2 copies: 1 copy with weight ticket to accompany sample to lab (if necessary) and second to remain with Bulk Solids Operations Supervisor) and inspects the load and condition of vehicle (e.g., leaking, faulty/unsafe equipment) If found to be unsafe to unload, vehicle will be placed out of service, Driver will be instructed to call his/her coordinator and Bulk Solids Operations Supervisor (BSOS) will contact maintenance facility or proper individual for repairs prior to unloading.
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4. Lab or qualified individual final codes the sample and enters in WinWeb accordingly.
5. Lab contacts Bulk Solids personnel and informs of final code or possible OffC (Off Compliance). If OffC, compliance manager will be notified.
6. If material is consistent with receiving report, Vactor, Cusco, Roll off, etc. can then be either dumped into proper solidification tub or shredded in the Shredder before entering the Mix Tub. Ensure all loads received from utility companies (liquid and solids) have been tested for PCB's. For potential dust generating loads, respiratory protection is required. Dust generation can be managed by spraying water on the load while dumping.
7. To avoid an accidental release (liquid or solid), BEFORE DUMPING, inspect the

containers/load. Inspections can be performed visually or by using the stick. Respiratory protection is required for this procedure. Ensure the lower valve is clear of liquid before opening the rear door and open the door slowly to avoid an uncontrollable surge of material. Always be in visual contact with all personnel involved in the entire operation.

8. A. Direct placement of wastes in the Mix Tub

I. Once material is emptied from vehicle/containers, the vehicle/roll-off/containers will be rinsed with a sufficient amount of water to clean. Before standing or walking between the truck body and open rear door, ensure the door is propped open with the safety bar or equivalent means if the safety bar is not available. Washwater generated will be collected in the mixtub and solidified with the waste. Alternatively, it may be collected and pumped into one of the existing RCRA tanks. It will be characterized and shipped offsite for disposal.

II. Close the rear door of vehicle/can and properly secure with locking dogs or mechanism.

III. Driver pulls onto scale and has an outbound weight stamped below the inbound weight and exits plant.

B. Shredding wastes prior to placement in the Mix Tub

I. Containers of non-hazardous wastes are moved from the North and/or South warehouse with forktrucks, drum dollies, etc., are staged in the containment areas in front and/or adjacent to the shredder before being placed in the shredder feed chute using a forktruck. Forktrucks used are equipped with the proper devices for use with various types of containers such as grapples used to securely lift and manipulate up/down/sideways waste containers being placed in the shredder feed chute.

II. Secured containers of non-hazardous waste are also moved from the North and/or South warehouse by forktruck, drum dolly, etc., and placed directly in the shredder feed chute.

III. The shredder is actuated by a trained operator and shreds the wastes which then exits the shredder via its dump chute and enters the Mix Tub. Shredder operations can be continuous or in batches depending upon the types and volumes of wastes being shredded prior to solidification. non-hazardous wastes are shredded.

9. Solidification reagent is added to the mixtub using a backhoe or front end loader. The waste and solidification reagent will be physically mixed using a backhoe or excavator. The waste is mixed until no free liquid is present.

10. Once the waste has been solidified, it is loaded into roll-offs or dump trailers for shipment offsite. The empty roll-off or dump trailer is staged adjacent to the mixtub. The backhoe or excavator is used to transfer the solidified material.

11. Examples of solidification materials, blends and uses. These reagents have been confirmed to physically solidify waste. No chemical treatment will occur.

- 6-oil: Sawdust
- Manhole sludge: Oil dry and sawdust
- Non-haz liquid: Swell-jel~~gel~~/Diaper Dust and sawdust

### Process Interruptions

1. Power Loss
  - Dumping of vehicle will be ceased if the loss creates inadequate lighting (e.g., second or third shift operations) or a loss of the fire suppression system. Vehicle needs to be safely secured and dumping operation cannot resume until power is restored and all systems are back on line.
2. If any of the following occur, the shredding/dumping process needs to be immediately ceased and the appropriate individual(s) need to be notified. (e.g., General Manager, Health and Safety Manager, Compliance Manager, Bulk Solids Operations Supervisor) A determination will be made as to whether or not to implement the Contingency Plan based on the locations permit requirements.
  - Fires
  - Reactions (off gassing, excessive dust, odors)
  - Spills
  - Incorrect material dumped into tub or container
  - Worker exhibits signs and symptoms of exposure.
  - Injury

### Shut Down or Precipitation Events

All containers must be covered when not actively being processed.

All containers must be covered during rain events.

At end of each shift/day, the area in which the shredding/mix tub operation occurs and the equipment used needs to be properly cleaned and inspected, and accumulated liquids removed from secondary containments.

- Shut-down Shredder.
- Remove excess waste and debris from the excavator/backhoe bucket and any other equipment used, inspect for any cracks or signs of damage, and stage equipment in proper staging area.
- Cover all containers (includes ~~Mix-Tub~~mixtub)
- Clean-up work area and return all equipment to proper storage areas. If any waste spills in the concrete containment area, it must be removed and the area washed with water. Washwater generated will typically be collected in the mixtub and solidified with the waste. Alternatively, it may be collected and pumped into one of the existing RCRA tanks. It will be characterized and shipped offsite for disposal.
- Remove all contaminated PPE and place in approved container.
- Ensure all tracking/receiving reports are turned into lab or supervisor and report any discrepancies or equipment issues.
- Any liquid in mix-tub area and/or shredder secondary containment will be pumped into mix-tub for solidification this would include all liquids in this area. Alternatively, it may be collected and pumped into one of the existing RCRA tanks. Collected accumulated liquids will be characterized as needed prior to being shipped offsite for disposal.

Uncontaminated accumulated rainwater may be managed as stormwater using the facility's existing collection and discharge to POTW methods and procedures.

- Secure Shredder to include power disengagement.

Employees will be trained on operation process and the training will be documented. An SOP has been developed from which employees will receive training which will include some OJT as well.

## LIST OF FIGURES

1. Figure F-1.2 Fuels Blending Process Flowsheet (Retain – Unchanged)
2. Figure F-1.3 Can Crusher Process Flowsheet (Retain – Unchanged)
3. Figure F-1.5 South Container Storage Building (Retain – Unchanged)
4. Figure F-1.9a Shredder/Mix Tub Area Layout
5. Figure F-1.9b Non-hazardous Waste Shredder
- ~~6. Figure F-1.9c Secondary Containment for Shredder~~
- ~~7. Figure F-1.9d Access Platform for Shredder~~
- ~~8. Figure F-1.9e Concrete Pad for Shredder~~





**ENVIRONMENTAL SERVICES®**

Clean Harbors Florida, LLC.

7001 Kilo Avenue

Bartow, Florida 33830

863.533.6111

[www.cleanharbors.com](http://www.cleanharbors.com)

## Enclosure 4

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**Clean Harbors Florida, LLC**

**B. ADDITIONAL INFORMATION**

**1. Provide a description of the operation of the facility that shall include (62-701.710(2)(a), F.A.C.):**

**a. The types of materials, i.e., wastes, recyclable materials or recovered materials, to be managed or processed;**

Non hazardous liquids and semi-solids will be shredded and solidified using sawdust (or other similar products) to absorb free liquids and create a solid waste. Typical examples include manhole cleanout sludge, oily sludges and non hazardous sludge from industrial processes, off spec and expired non-hazardous consumer commodities/products, and other nonhazardous wastes suitable for landfills after being shredded and/or solidified. Solidified material will be shipped off-site for disposal, destruction and/or energy recovery.

**b. The expected daily average and maximum weights or volumes of materials to be managed or processed;**

Because management of these wastes is typically event driven, volumes will vary. It is expected the average amount to be 5 tons per day and the maximum amount to be 100 tons per day.

**c. How the materials will be managed or processed;**

Waste will be placed in a steel container (e.g., mix tub) located on concrete with secondary containment. Absorbent such as sawdust, paper pulp or a similar product will be added and mixed with a backhoe or similar mechanical device. Once solidified, the waste will be transferred to a roll off box or dump trailer for shipment off site to the final disposal facility. Also, containerized non-hazardous wastes will be shredded prior to placement in the mix tub. The shredder will be located in a secondary containment area as shown on the site plan and shredder drawings enclosed herein this permit modification request. Containerized wastes are placed in the shredder manually or using equipment like fork trucks with the proper devices attached such as grapplers, hoists, etc. Shredder containers/materials then mechanically and gravity flow into the mix tub via a chute. Please refer to the new shredder Standard Operating Procedure (SOP) for additional details - **Attachment A**.

The previously submitted SOP for mix tub operations remains in effect and unchanged.

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**d. How the materials will flow through the facility including locations of the loading, unloading, sorting, processing and storage areas;**

All wastes accepted for processing will be profiled and managed per the Waste Analysis Plan found in Appendix II-H of the RCRA permit. This includes a prequalification process of the information submitted on the waste profile, including a review of the analysis or generator knowledge used to confirm the waste is non hazardous.

Once waste arrives on site, a representative sample is collected and verified to match the waste profiled using the following fingerprint procedures as discussed in the Waste Analysis Plan:

- Visual inspection
- Water miscibility
- pH screen
- ignitability screen
- cyanide reactivity screen
- sulfide reactivity screen
- oxidizer presence screen
- radioactivity screen

Additional analytical tests may be performed as supplemental analysis if necessary. Once the waste is accepted for management, it will be stored in an existing container storage area as described in Chapter 1, Appendix C of the RCRA permit.

The steel mix tub is placed in secondary containment situated southwest of the North Container Storage Building. This concrete pad is approximately 60' x 46' and constructed with secondary containment. All waste transfer and mixing will be performed on this concrete pad. The mix tub and roll off boxes are designed to be covered with tarps should it rain, so precipitation will not impact the process. The shredder is provided with secondary containment to hold its contents and any possible accumulated rainwater as well as a roof and siding/splash guards to prevent outward splashing from occurring and minimize stormwater infiltration. Once solidified waste is placed in roll off boxes staged on concrete surfaces that provide secondary containment prior to shipment offsite. Accumulated liquids in secondary containment areas at the mix tub and shredder will be removed and solidified onsite, or collected for shipment offsite for treatment/disposal at authorized facilities.

Previously submitted WAP remains in effect and unchanged for this permit modification.

**e. The types of equipment that will be used;**

A steel container approximately 20' by 20' by 3' high with a backhoe or similar device was previously approved to contain and mechanically mix non-hazardous wastes with solidification reagents, then transfer the solidified wastes into a roll off box or dump trailer for shipment

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offsite. This operation remains in effect. A container shredder will be installed/used for size reduction for containers/wastes being shredded prior to solidification in the mix tub and shipment offsite to authorized disposal, destruction and/or energy recovery facilities. See **Attachment B** for shredder information as well as Chapter 1, Appendix C, Section 1.9 of this application.

**f. The maximum time materials will be stored at the facility;**

Once accepted at the facility, per the existing RCRA permit waste may be stored for up to one year before processing, but will typically be stored for less than 30 days.

**g. The maximum amounts of wastes, recyclable materials, and recovered materials that will be stored at the facility at any one time; and**

Non hazardous wastes amounts to be solidified will vary depending on when generators ship waste to Clean Harbors Florida. It is expected that waste will be accumulated until approximately a minimum of 20 yd<sup>3</sup> of non-hazardous waste is ready to be processed. At no time will the waste inventory (RCRA and non RCRA) exceed the RCRA permitted limit of 275,640 gallons in containers.

**h. The expected disposition of materials after leaving the facility.**

Solidified waste will be shipped off site for disposal. Waste will typically be landfilled or burned for energy recovery.

**2. Attach a site plan, signed and sealed by a professional engineer registered under Chapter 471, F.S., with a scale not greater than 200 feet to the inch, which shows the facility location, total acreage of the site, and any other relevant features such as water bodies or wetlands on or within 200 feet of the site, potable water wells on or within 500 feet of the site (62-701.710(2)(b), F.A.C.).**

The site plan is enclosed herein this application – See Enclosure 2.

**3. Provide a boundary survey and legal description of the property (62-701.710(2)(c), F.A.C.).**

The survey and legal description were previously provided to the Department and have not changed.

**4. Provide a construction plan, including engineering calculations, that describes how the applicant will comply with the design requirements of subsection 62-701.710(3), F.A.C. (62-701.710(2)(d), F.A.C.).**

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Because this is an existing RCRA permitted facility, most of the infrastructure exists and complies with RCRA requirements. The only new construction is concrete pillars to be built that will provide structural support and a platform for the installation of and access to the shredder. The existing concrete structure/building where the shredder will be located provides adequate secondary containment that is integrated into the facility-wide secondary containment design. See **Attachment C** for the shredder location and layout design.

**62-707-710(3), Design requirements. Minimum design requirements for waste processing facilities are as follows:**

- (a) Tipping, processing, sorting, storage and compaction areas that are not enclosed shall be equipped with litter control devices.**

Wastes accepted for shredding and/or solidification are kept in containers that are covered except when adding or removing waste. These wastes are not typical household trash that would blow and create litter. Wastes will be managed to ensure contents are kept in containers and any spill promptly cleaned per the facility contingency plan.

- (b) The facility shall be designed with a leachate control system to prevent discharge of leachate and avoid mixing of leachate with stormwater, and to minimize the presence of standing water.**

The facility does not provide disposal on site and does not generate leachate. All stormwater that falls onto containment areas is collected and discharged to the local POTW. Any standing water is removed within 24 hours.

- (c) Provisions shall be made for evaluating the quantity of all incoming solid waste and recovered materials. Storage areas shall be designed to hold the expected volume of materials until they are transferred for disposal or recycling.**

All waste is scheduled and received per the RCRA and Solid Waste permits and waste volumes will not exceed permitted limits to ensure sufficient storage for the non-hazardous wastes.

**5. Provide an operation plan that describes how the applicant will comply with subsection 62-701.710(4), F.A.C. and the recordkeeping requirements of subsection 62-701.710(8), F.A.C. (62-701.710(2)(e), F.A.C.).**

**62-701.710(4) Operational requirements.**

- (a) All operations shall be conducted in accordance with the approved Operation Plan. The Department shall be notified before any substantial changes or revisions to the approved Operation Plan are implemented in order to determine whether a permit modification is required.**

Any potential substantial change or revision will be approved by FDEP before implementing.

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- (b) Stored putrescible wastes shall not be allowed to remain unprocessed for more than 48 hours; however, if the operation plan includes provisions to control vectors and odors, putrescible wastes may be stored for up to seven days. Any other unauthorized waste received by the facility shall be segregated and transported to an authorized disposal or recycling facility within 30 days of receipt.**

Putrescible waste will not be accepted for management in the shredder or solidification unit.

- (c) Operators and spotters shall be trained in accordance with subsection 62-701.320(15), F.A.C.**

- 1. A trained operator shall be on duty whenever the facility is operating. Operating hours shall be posted at the facility.**

All waste to be solidified will be accepted and managed only by Clean Harbors Florida employees who are trained per the RCRA and Solid Waste permits, as well as that required by OSHA. Waste is not accepted by the general public and can only be delivered if scheduled. As such, operating hours are not posted. Shredder operators will receive training on the Shredder SOP prior to being allowed to operate it.

- 2. At least one trained spotter shall be on duty at all times that waste is received at the site to inspect the incoming waste. All incoming waste shall be inspected, and any unauthorized waste shall be removed from the waste stream and placed into appropriate containers for disposal at a permitted facility in accordance with a schedule submitted as part of the operation plan.**

Waste will be accepted per the Waste Analysis Plan in the RCRA permit. Trained personnel will be on site at all times. Any waste deemed non conforming after sampling and analysis will be managed compliant with the facility RCRA and Solid Waste permits.

- (d) The facility shall be operated to control objectionable odors in accordance with subsection 62-296.320(2), F.A.C.**

No waste with objectionable odors will be managed in the solidification unit.

- (e) Adequate fire protection shall be available at all times.**

The facility is equipped with fixed and portable fire extinguishers compliant with NFPA.

- (f) Access to the facility shall be controlled during the design period of the facility by fencing or other effective barriers to prevent disposal of unauthorized solid waste.**

The facility is surrounded by a chain link fence topped with barb wire. Controlled site access is through a gate that is only opened for approved personnel and is monitored by cameras and closed circuit TV with recording devices. Visitors must check-in at the administrative office and receive an appropriate visitor badge and escort if required for their level of facility training and

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association.

- (g) All drains and leachate conveyances shall be maintained so that leachate flow is not impeded.**

The site does not generate leachate. All stormwater that falls onto containment areas is collected and discharged to the local POTW, solidified in the mix tub or shipped offsite for proper disposal.

- (h) If any regulated hazardous wastes are discovered to be improperly deposited at the facility, the facility operator shall promptly notify the Department, the person responsible for shipping the wastes to the facility, and the generator of the wastes, if known. The area where the wastes are deposited shall immediately be cordoned off from public access. If the generator or hauler cannot be identified, the facility operator shall assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility.**

Clean Harbors Florida is uniquely qualified to manage any hazardous wastes shipped to the facility. All wastes are sampled and analyzed per the existing Waste Analysis Plan. If any non hazardous waste is discovered to be hazardous, it will be managed compliant with the RCRA permit and appropriate notifications made to FDEP.

- (i) If the facility has reached its permitted capacity for storage of wastes or recyclable materials, the permittee shall not accept additional waste for processing until sufficient capacity has been restored.**

At no time will the RCRA permitted limits be exceeded.

**6. Provide a closure plan that describes how the applicant will comply with subsection 62-701.710(6), F.A.C. (62-701.710(2)(f), F.A.C.).**

The existing RCRA closure plan describes closing the facility in compliance with this requirement.) Shredder/Solidification unit closure is included in Section 9.8.1, Perimeter Road. This plan remains unchanged from that previously provided to the Department.

**7. Provide a contingency plan that describes how the applicant will comply with subsection 62-701.320(16), F.A.C. (62-701.710(2)(g), F.A.C.).**

The existing contingency plan describes how the facility will respond to potential scenarios in compliance with this requirement. ) This plan remains unchanged from that previously provided to the Department.

**8. Unless exempted by subparagraph 62-701.710(1)(d)1., F.A.C., provide the financial assurance documentation required by subsection 62-701.710(7), F.A.C. (62-701.710(2)(h), F.A.C.).**

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Clean Harbors Florida has financial assurance in place to cover costs associated with closing the facility. The facility closure cost estimate is updated annually as well as the associated financial assurance mechanism. This information is submitted to the Department annually. Since no additional waste storage capacity is being requested this information is unchanged.

**9. Provide a history and description of any enforcement actions by the applicant described in subsection 62-701.320(3), F.A.C. relating to solid waste management facilities in Florida. (62-701.710(2), F.A.C. and 62-701.320(7)(i), F.A.C.)**

There were two (2) enforcement action associated with Clean Harbors Florida during the last 5 years.

**10. Provide documentation that the applicant either owns the property or has legal authorization from the property owner to use the site for a waste processing facility (62-701.710(2), F.A.C. and 62-701.320(7)(g), F.A.C.)**

FDEP form 62-730.900(2) for the RCRA permit modification contains the land owner certification the site. This information has also been previously provided to the Department.



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# **Attachment A**

**(Retain - Unchanged)**

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## **Attachment B**



## Proposal for SSI Dual-Shear® model M100H

SSI low speed, high torque, two shaft rotary shear shredder

### WHAT NEEDS SHREDDING?

**Application:** Non haz materials: This shredder can process a wide range of materials, examples include: Auto and light truck tires, loose metals, baled or loose plastic and paper, electronics, MSW, bulky waste, etc.

### M100H DESCRIPTION:

**Shredder:** Shredder features:

- Patented ACLS™ - Advanced Cutter Locking System
- Individually removable cleaning fingers
- Proprietary bearing & seal arrangements at shredder gearbox and endplate
- CNC machined shredder frame – torsion box design, modular construction
- Heavy-duty gear reducer

Shredder hardware:

- 41" (1040mm) wide x 63" (1608mm) long cutting chamber
- 20.9" (530mm) diameter cutters designed for application. 2" 1 & 2 hook std spiral
- 7.4" (188 mm) high strength hexagonal shafts
- Ram hopper
- Shredder support stand; 48"

Hydraulic power unit:

- 200HP (149kW) drive motor (TEFC)
- Open loop system with SSI designed and built skid type base
- Automatic hydraulic overload reversing of shredder
- Heavy duty heat exchanger

**Controls:** Full electrical controls at 460V, 575V/60Hz or 415V,380V/50Hz are included<sup>1,2</sup>:

Control features:

- Hydraulic pressure sensors trigger automatic shredder shaft reversals as needed
- "Auto-chop" adjustable directional control of the shredder shafts
- Soft starter included for the 200HP electric motor
- Auto shutdown on frequent reversal of shredder
- System "fault codes" displayed on touch screen to simplify diagnostics and troubleshooting
- E-stop circuit allows for expansion

Panel design standards:

- Programmable controller
- UL-508 / CUL approved
- Touch screen operator interface
- NEMA 4 (IP66) rated enclosure(s)
- 24VDC control voltage
- Minimum SCCR standard of 35kA (higher ratings available)

Control notes:

<sup>1</sup> Integrated auxiliary device starters and control packages available at additional cost

<sup>2</sup> 200-240V electrical available at an additional charge, consult SSI for details

## M100H FEATURES & BENEFITS



## M100H PHOTOS:

## SERVICES

### BASIC SPECIFICATIONS:

Estimated system weight:	26,000 lbs (11,700 kg)
Heaviest piece (shredder head):	20,000 lbs (9,000 kg)
Basic footprint of system:	141" (3583mm) L x 69" (1753mm) W x 136" (3454mm) T

\*Notes: Width and Height may change based on application and equipment configuration.  
Weight and Dimensional information does not include the shredder hydraulic power unit.



Assembled and tested prior to shipment  
Documentation: 2 sets of operations & maintenance manuals  
SSI standard limited warranty (copy attached to this quote)  
24-Hour technical support (toll-free in the USA)



**Note:** Installation photos may include optional features & equipment that are not included on this quotation. Please contact SSI with any questions you may have.





## PATENTED RAM TECHNOLOGY

SSI Shredding Systems holds patents on some of the industry's most innovative technologies providing increased efficiency and production

### INCREASE SHREDDER PRODUCTION

Often bulky and light materials can “bridge” or float on top of the cutting table of shredders. SSI's Patented Ram Assist pushes the material into the shredder, allowing the cutter hooks to get a better grab on the material. The hydraulically- or pneumatically-operated ram keeps bulky, round, or otherwise hard-to-grab materials in firm contact with cutters, optimizing shredding efficiency.

#### The ram works particularly well for:

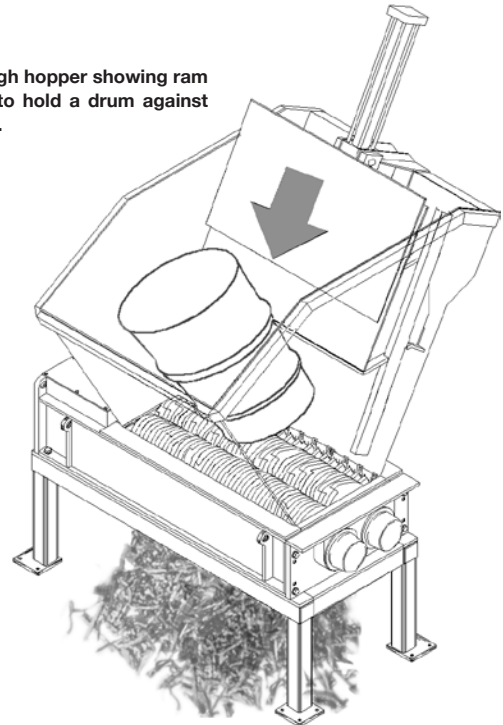
- Drums: plastic, steel, or fiber
- Bulky plastics
- Tubes or cores
- Pallets, wooden crates
- Construction & Demolition (C&D) debris

### SMART RAM

The SSI Ram Assist is not just a brute plunger like you would find on other manufacturers' shredders. It is integrated with the shredder controls so it senses when it is needed and by how much, applying just the right amount and duration of force to help the shredder grab it's material effectively.

The SSI ram can be operated automatically or manually. Designed with the ability to sense cutter loading, the ram automatically retracts or extends maximizing throughput. SSI provides ram configurations for a wide variety of both vertical and horizontal feeding systems for its shredders.

View through hopper showing ram extending to hold a drum against the cutters.



## RAM BENEFITS

### INCREASED PROCESSING EFFICIENCY

Throughput rates increase as material maintains contact with cutters.

### PROCESSING FLEXIBILITY

Automatic and manual modes allow you to select the best operation mode for the ram.

### INVESTMENT PROTECTION

Patented automatic ram operation senses shredder loading and automatically retracts and extends ram to reduce overloading.

### ON-LINE RELIABILITY

Heavy duty construction assures reliable operation.



## SERVICES:

Assembled and tested prior to shipment  
Documentation: 2 Sets of Operations & Maintenance Manuals  
SSI Standard Limited Warranty (copy available upon request)  
24-Hour Technical Support (toll-free in the USA)

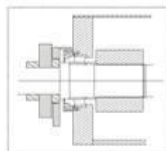
## DESIGN FEATURES & BENEFITS:

### DESIGN features



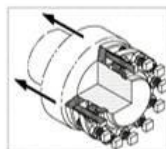
#### HOPPERS

Application-specific feed hoppers available, including patented ram feed assist.



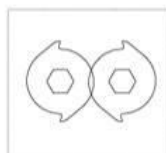
#### SEAL & BEARING PROTECTION

Proprietary "multiple-barrier" system, including a mix of conventional and labyrinth seals to prevent contamination.



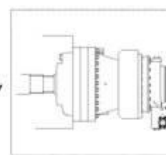
#### PATENTED ACLS™

SSI's "Advanced Cutter Locking System" maintains a tight cutter stack, minimizing maintenance requirements and prolonging cutter life.



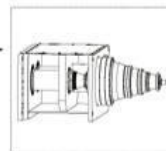
#### CUTTER CONFIGURATION

Application-specific cutter configurations.



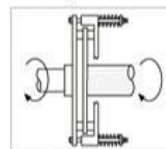
#### DRIVE CONFIGURATIONS

Electric, hydraulic and SmartDrive™ options available to suit specific needs.



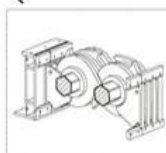
#### DIRECT DRIVE

Planetary gear boxes are splined directly into the drive shaft, amplifying torque and allowing greater flexibility of applications.



#### PATENTED SSP™

SSI's "Severe Shock Protection" system protects the drive system from damage during an event that instantaneously stops shredder shafts. (electric models only)



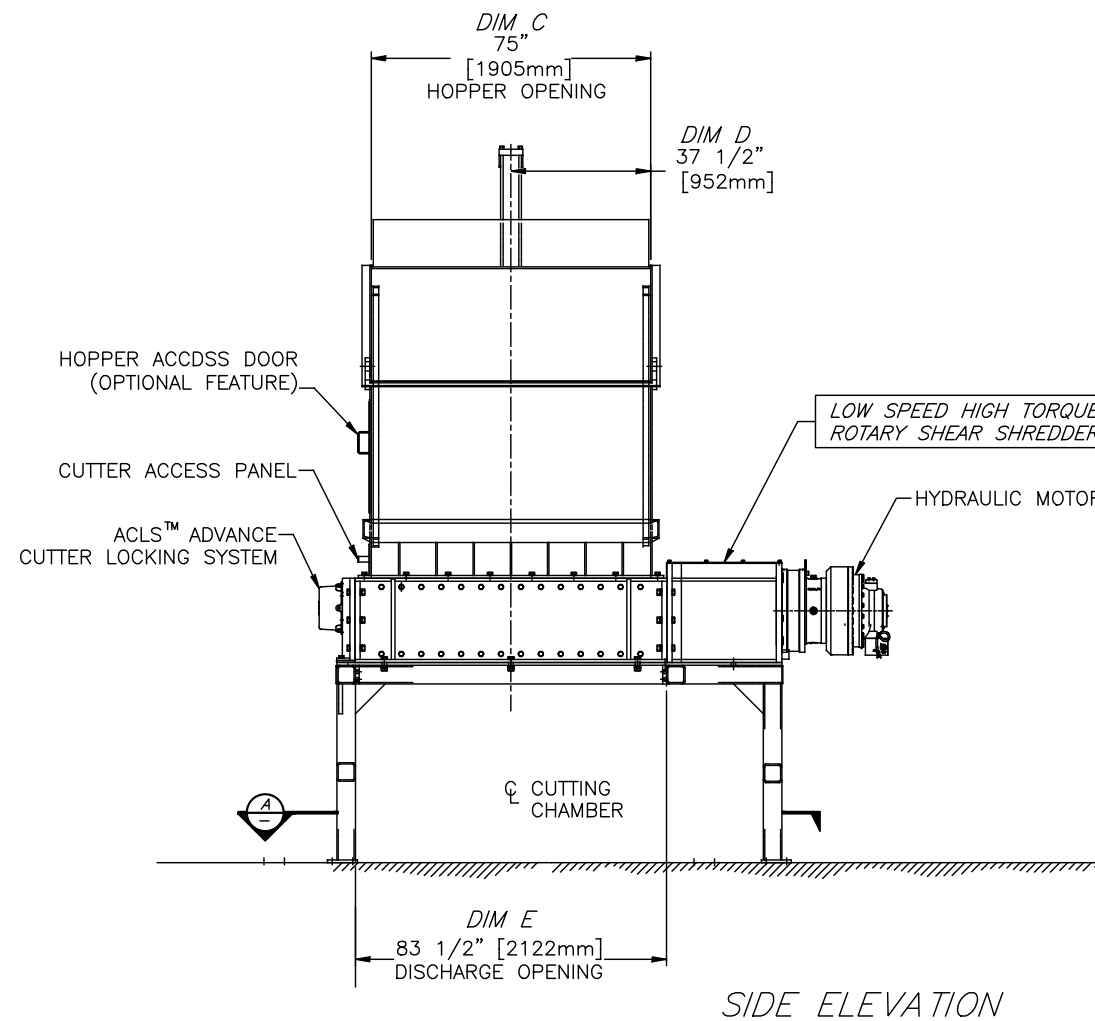
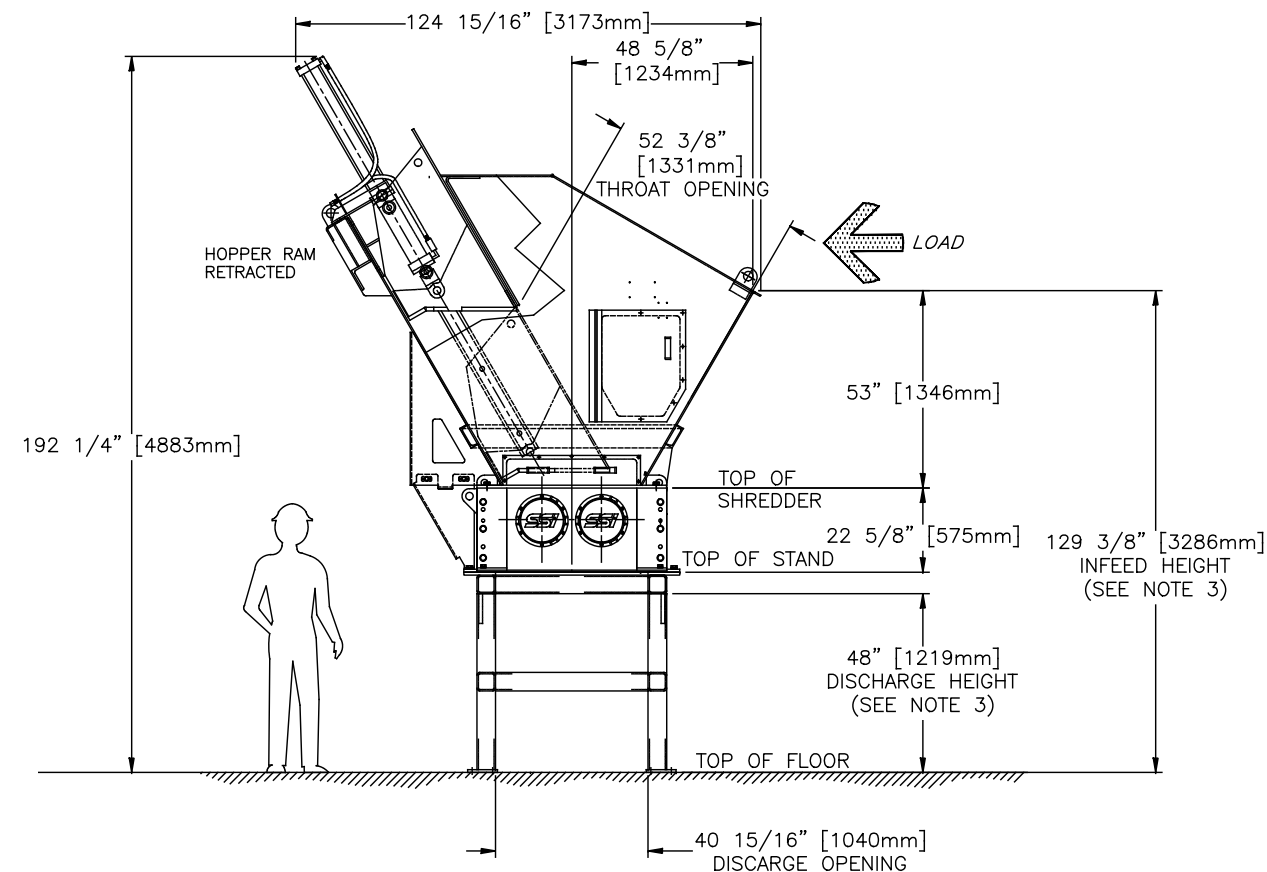
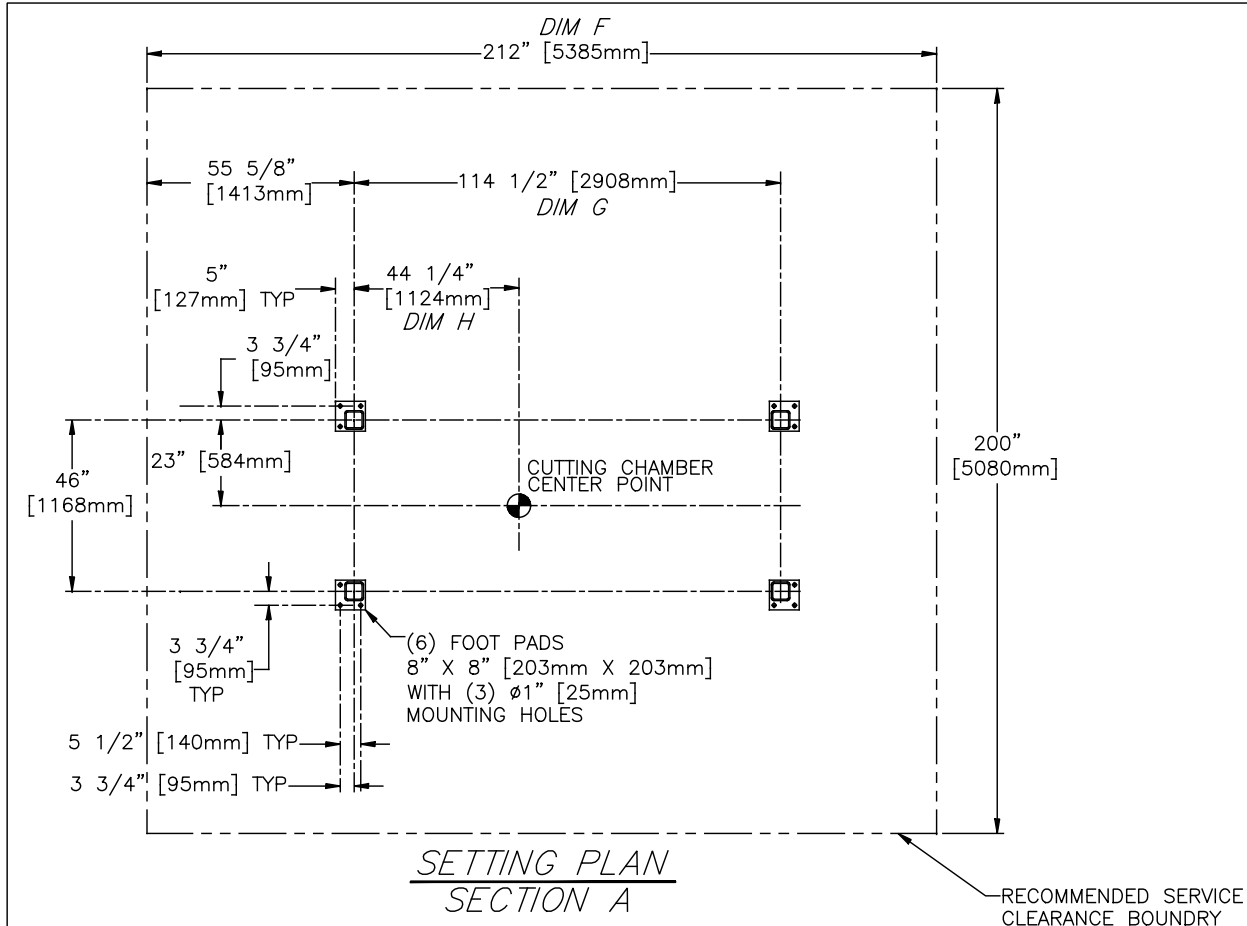
#### CLEANING FINGERS

Placed between each cutter and fitting closely around each spacer, the cleaning fingers keep shredded material from clogging the cutting chamber.

## BASIC SPECIFICATIONS:

Estimated System Weight:	14,100 lbs (6,350 kg)
Heaviest Piece (shredder head):	11,220 lbs (5,050 kg)
Basic Footprint of System:	121" (3067mm) L x 64" (1622mm) W* x 122" (3108mm) T*

\*Note: Width and Height may change based on application and equipment configuration



MODEL DIMENSIONS		
DIMENSIONS	M100H(52)	M100H(63)
DIM A	129 1/2" [3289mm]	141 3/16" [3587mm]
DIM B	51 7/8" [1317mm]	63 9/16" [1614mm]
DIM C	52 1/8" [1324mm]	63 13/16" [1621mm]
DIM D	26 1/16" [662mm]	31 25/32" [807mm]
DIM E	60 11/16" [1541mm]	72 1/16" [1830mm]
DIM F	189" [4801mm]	200" [5080mm]
DIM G	91 9/16" [2326mm]	102 13/16" [2611mm]
DIM H	32 13/16" [833mm]	38 19/16" [979mm]

#### NOTES

1. THE SHREDDER SHOWN IS A MODEL M100H(75) WITH INFEED HOPPER.
2. ELECTRICAL PANEL(S) AND HYDRAULIC POWER UNIT NOT SHOWN.
3. DRAWING DEPICTS SHREDDER ON OUR TYPICAL STAND. HEIGHT OF STAND CAN BE CHANGED TO SUIT CUSTOMER REQUIREMENTS.
4. DIMENSIONS MAY DIFFER FROM ROUNDED VALUES ON SPECIFICATIONS.

ACLS™ AND SSP™ ARE PATENTED FEATURES EXCLUSIVE TO SSI SHREDDING SYSTEMS INC.

**SSI** Shredding Systems, Inc.  
9760 SW Freeman Drive  
Wilsonville, OR 97070-9286 USA  
(503) 682-3633 FAX (503) 682-1704  
WEB SITE: <http://www.ssiworld.com>

THIS PRINT CONTAINS CONFIDENTIAL INFORMATION WHICH IS THE PROPERTY OF SSI SHREDDING SYSTEMS, INC. BY ACCEPTING THIS INFORMATION, THE BORROWER AGREES THAT IT WILL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS LOANED.

#### M100H SHREDDER

GENERAL ARRANGEMENT – RAM HOPPER

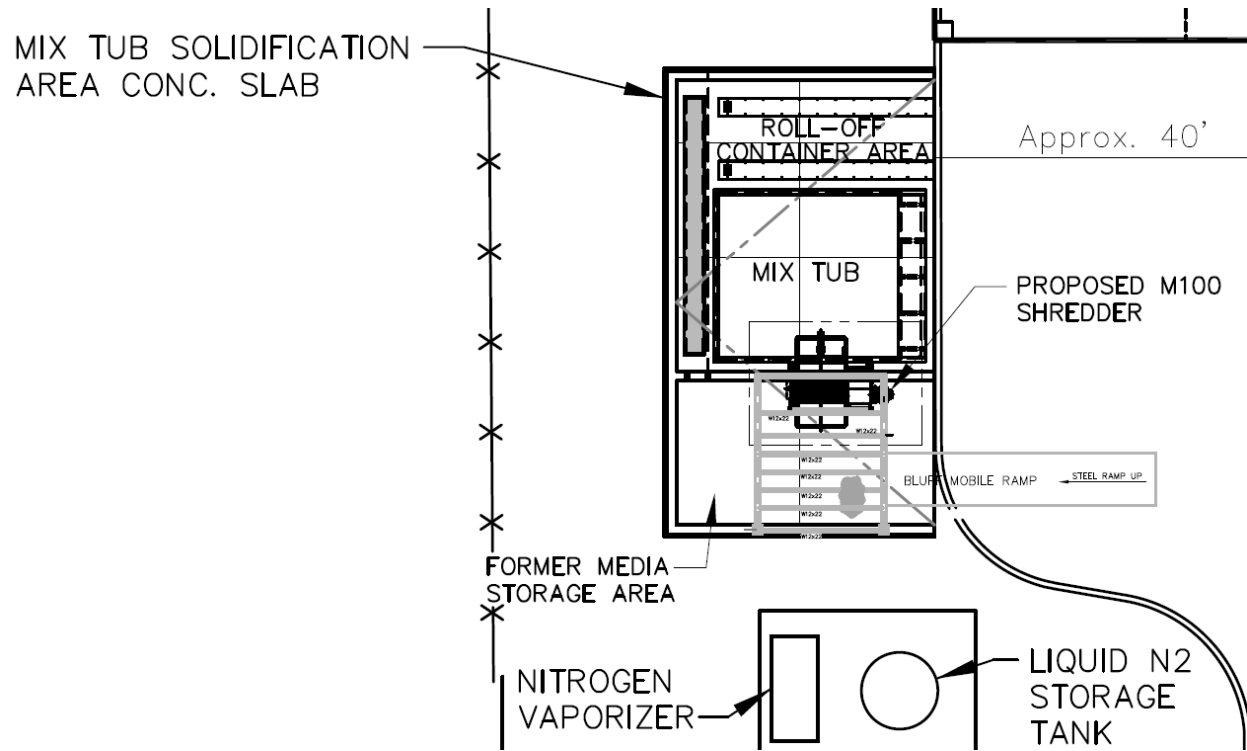
DRAWING NUMBER	DATE	DRAWN BY	SCALE	PLT SCALE
M100H	6/6/01	POLLY	1:24	1=24
DRAWING NUMBER	SHEET	REV		
42-5003-D	1 of 1	3		



8/30/2018

# **Attachment C**

8/30/2018



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Clean Harbors Florida, LLC

**B. ADDITIONAL INFORMATION**

**1. Provide a description of the operation of the facility that shall include (62-701.710(2)(a), F.A.C.):**

**a. The types of materials, i.e., wastes, recyclable materials or recovered materials, to be managed or processed;**

Non hazardous liquids and semi-solids will be shredded and solidified using sawdust (or other similar products) to absorb free liquids and create a solid waste. Typical examples include manhole cleanout sludge, oily sludges and non hazardous sludge from industrial processes, off spec and expired non-hazardous consumer commodities/products, and other nonhazardous wastes suitable for landfills after being shredded and/or solidified. Solidified material will be shipped off-site for disposal, destruction and/or energy recovery.

**b. The expected daily average and maximum weights or volumes of materials to be managed or processed;**

Because management of these wastes is typically event driven, volumes will vary. It is expected the average amount to be 5 tons per day and the maximum amount to be 100 tons per day.

**c. How the materials will be managed or processed;**

Waste will be placed in a steel container (e.g., mix tub) located on concrete with secondary containment. Absorbent such as sawdust, paper pulp or a similar product will be added and mixed with a backhoe or similar mechanical device. Once solidified, the waste will be transferred to a roll off box or dump trailer for shipment off site to the final disposal facility. Also, containerized non-hazardous wastes will be shredded prior to placement in the mix tub. The shredder will be located in a secondary containment area as shown on the site plan and shredder drawings enclosed herein this ~~intermediate~~ permit modification request. Containerized wastes are placed in the shredder manually or using equipment like fork trucks with the proper devices attached such as grapplers, hoists, etc. Shredder containers/materials then mechanically and gravity flow into the mix tub via a chute. Please refer to the new shredder Standard Operating Procedure (SOP) for additional details - **Attachment A**.

The previously submitted SOP for mix tub operations remains in effect and unchanged.

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**d. How the materials will flow through the facility including locations of the loading, unloading, sorting, processing and storage areas;**

All wastes accepted for processing will be profiled and managed per the Waste Analysis Plan found in Appendix II-H of the RCRA permit. This includes a prequalification process of the information submitted on the waste profile, including a review of the analysis or generator knowledge used to confirm the waste is non hazardous.

Once waste arrives on site, a representative sample is collected and verified to match the waste profiled using the following fingerprint procedures as discussed in the Waste Analysis Plan:

- Visual inspection
- Water miscibility
- pH screen
- ignitability screen
- cyanide reactivity screen
- sulfide reactivity screen
- oxidizer presence screen
- radioactivity screen

Additional analytical tests may be performed as supplemental analysis if necessary. Once the waste is accepted for management, it will be stored in an existing container storage area as described in Chapter 1, Appendix C of the RCRA permit.

The steel mix tub is placed in secondary containment situated southwest of the North Container Storage Building. This concrete pad is approximately 60' x 46' and constructed with secondary containment. All waste transfer and mixing will be performed on this concrete pad. The mix tub and roll off boxes are designed to be covered with tarps should it rain, so precipitation will not impact the process. The shredder is provided with secondary containment to hold its contents and any possible accumulated rainwater as well as a roof and siding/splash guards to prevent outward splashing from occurring and minimize stormwater infiltration. Once solidified waste is placed in roll off boxes staged on concrete surfaces that provide secondary containment prior to shipment offsite. Accumulated liquids in secondary containment areas at the mix tub and shredder will be removed and solidified onsite, or collected for shipment offsite for treatment/disposal at authorized facilities.

Previously submitted WAP remains in effect and unchanged for this permit modification.

**e. The types of equipment that will be used;**

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A steel container approximately 20' by 20' by 3' high with a backhoe or similar device was previously approved to contain and mechanically mix non-hazardous wastes with solidification reagents, then transfer the solidified wastes into a roll off box or dump trailer for shipment offsite. This operation remains in effect. A container shredder will be installed/used for size reduction for containers/wastes being shredded prior to solidification in the mix tub and shipment offsite to authorized disposal, destruction and/or energy recovery facilities. See **Attachment B** for shredder information as well as Chapter 1, Appendix C, Section 1.9 of this application.

**f. The maximum time materials will be stored at the facility;**

Once accepted at the facility, per the existing RCRA permit waste maybe stored for up to one year before processing, but will typically be stored for less than 30 days.

**g. The maximum amounts of wastes, recyclable materials, and recovered materials that will be stored at the facility at any one time; and**

Non hazardous wastes amounts to be solidified will vary depending on when generators ship waste to Clean Harbors Florida. It is expected that waste will be accumulated until approximately a minimum of 20 yd<sup>3</sup> of non-hazardous waste is ready to be processed. At no time will the waste inventory (RCRA and non-RCRA) exceed the RCRA permitted limit of 275,640 gallons in containers.

**h. The expected disposition of materials after leaving the facility.**

Solidified waste will be shipped off site for disposal. Waste will typically be landfilled or burned for energy recovery.

**2. Attach a site plan, signed and sealed by a professional engineer registered under Chapter 471, F.S., with a scale not greater than 200 feet to the inch, which shows the facility location, total acreage of the site, and any other relevant features such as water bodies or wetlands on or within 200 feet of the site, potable water wells on or within 500 feet of the site (62-701.710(2)(b), F.A.C.).**

The site plan is enclosed herein this application – See Enclosure 2.

**3. Provide a boundary survey and legal description of the property (62-701.710(2)(c), F.A.C.).**

The survey and legal description were previously provided to the Department and have not changed.

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**4. Provide a construction plan, including engineering calculations, that describes how the applicant will comply with the design requirements of subsection 62-701.710(3), F.A.C. (62-701.710(2)(d), F.A.C.).**

Because this is an existing RCRA permitted facility, most of the infrastructure exists and complies with RCRA requirements. The only new construction is ~~a concrete pad~~pillars to be built that will provide ~~a base~~structural support and a platform for the installation of and access to the shredder. ~~as well as~~The existing concrete structure/building where the shredder will be located provides adequate secondary containment that is integrated into the facility-wide secondary containment design. See **Attachment C** for the shredder location and layout design.

**62-707-710(3), Design requirements. Minimum design requirements for waste processing facilities are as follows:**

- (a) Tipping, processing, sorting, storage and compaction areas that are not enclosed shall be equipped with litter control devices.**

Wastes accepted for shredding and/or solidification are kept in containers that are covered except when adding or removing waste. These wastes are not typical household trash that would blow and create litter. Wastes will be managed to ensure contents are kept in containers and any spill promptly cleaned per the facility contingency plan.

- (b) The facility shall be designed with a leachate control system to prevent discharge of leachate and avoid mixing of leachate with stormwater, and to minimize the presence of standing water.**

The facility does not provide disposal on site and does not generate leachate. All stormwater that falls onto containment areas is collected and discharged to the local POTW. Any standing water is removed within 24 hours.

- (c) Provisions shall be made for evaluating the quantity of all incoming solid waste and recovered materials. Storage areas shall be designed to hold the expected volume of materials until they are transferred for disposal or recycling.**

All waste is scheduled and received per the RCRA and Solid Waste permits and waste volumes will not exceed permitted limits to ensure sufficient storage for the non-hazardous wastes.

**5. Provide an operation plan that describes how the applicant will comply with subsection 62-701.710(4), F.A.C. and the recordkeeping requirements of subsection 62-701.710(8), F.A.C. (62-701.710(2)(e), F.A.C.).**

**62-701.710(4) Operational requirements.**

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- (a) All operations shall be conducted in accordance with the approved Operation Plan. The Department shall be notified before any substantial changes or revisions to the approved Operation Plan are implemented in order to determine whether a permit modification is required.**

Any potential substantial change or revision will be approved by FDEP before implementing.

- (b) Stored putrescible wastes shall not be allowed to remain unprocessed for more than 48 hours; however, if the operation plan includes provisions to control vectors and odors, putrescible wastes may be stored for up to seven days. Any other unauthorized waste received by the facility shall be segregated and transported to an authorized disposal or recycling facility within 30 days of receipt.**

Putrescible waste will not be accepted for management in the shredder or solidification unit.

- (c) Operators and spotters shall be trained in accordance with subsection 62-701.320(15), F.A.C.**

- 1. A trained operator shall be on duty whenever the facility is operating. Operating hours shall be posted at the facility.**

All waste to be solidified will be accepted and managed only by Clean Harbors Florida employees who are trained per the RCRA and Solid Waste permits, as well as that required by OSHA. Waste is not accepted by the general public and can only be delivered if scheduled. As such, operating hours are not posted. Shredder operators will receive training on the Shredder SOP prior to being allowed to operate it.

- 2. At least one trained spotter shall be on duty at all times that waste is received at the site to inspect the incoming waste. All incoming waste shall be inspected, and any unauthorized waste shall be removed from the waste stream and placed into appropriate containers for disposal at a permitted facility in accordance with a schedule submitted as part of the operation plan.**

Waste will be accepted per the Waste Analysis Plan in the RCRA permit. Trained personnel will be on site at all times. Any waste deemed non conforming after sampling and analysis will be managed compliant with the facility RCRA and Solid Waste permits.

- (d) The facility shall be operated to control objectionable odors in accordance with subsection 62-296.320(2), F.A.C.**

No waste with objectionable odors will be managed in the solidification unit.

- (e) Adequate fire protection shall be available at all times.**

The facility is equipped with fixed and portable fire extinguishers compliant with NFPA.

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- (f) Access to the facility shall be controlled during the design period of the facility by fencing or other effective barriers to prevent disposal of unauthorized solid waste.**

The facility is surrounded by a chain link fence topped with barb wire. Controlled site access is through a gate that is only opened for approved personnel and is monitored by cameras and closed circuit TV with recording devices. Visitors must check-in at the administrative office and receive an appropriate visitor badge and escort if required for their level of facility training and association.

- (g) All drains and leachate conveyances shall be maintained so that leachate flow is not impeded.**

The site does not generate leachate. All stormwater that falls onto containment areas is collected and discharged to the local POTW, solidified in the mix tub or shipped offsite for proper disposal.

- (h) If any regulated hazardous wastes are discovered to be improperly deposited at the facility, the facility operator shall promptly notify the Department, the person responsible for shipping the wastes to the facility, and the generator of the wastes, if known. The area where the wastes are deposited shall immediately be cordoned off from public access. If the generator or hauler cannot be identified, the facility operator shall assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility.**

Clean Harbors Florida is uniquely qualified to manage any hazardous wastes shipped to the facility. All wastes are sampled and analyzed per the existing Waste Analysis Plan. If any non hazardous waste is discovered to be hazardous, it will be managed compliant with the RCRA permit and appropriate notifications made to FDEP.

- (i) If the facility has reached its permitted capacity for storage of wastes or recyclable materials, the permittee shall not accept additional waste for processing until sufficient capacity has been restored.**

At no time will the RCRA permitted limits be exceeded.

**6. Provide a closure plan that describes how the applicant will comply with subsection 62-701.710(6), F.A.C. (62-701.710(2)(f), F.A.C.).**

The existing RCRA closure plan describes closing the facility in compliance with this requirement.) Shredder/Solidification unit closure is included in Section 9.8.1, Perimeter Road. This plan remains unchanged from that previously provided to the Department.



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**7. Provide a contingency plan that describes how the applicant will comply with subsection 62-701.320(16), F.A.C. (62-701.710(2)(g), F.A.C.).**

The existing contingency plan describes how the facility will respond to potential scenarios in compliance with this requirement. ) This plan remains unchanged from that previously provided to the Department.

**8. Unless exempted by subparagraph 62-701.710(1)(d)1., F.A.C., provide the financial assurance documentation required by subsection 62-701.710(7), F.A.C. (62-701.710(2)(h), F.A.C.).**

Clean Harbors Florida has financial assurance in place to cover costs associated with closing the facility. The facility closure cost estimate is updated annually as well as the associated financial assurance mechanism. This information is submitted to the Department annually. Since no additional waste storage capacity is being requested this information is unchanged.

**9. Provide a history and description of any enforcement actions by the applicant described in subsection 62-701.320(3), F.A.C. relating to solid waste management facilities in Florida. (62-701.710(2), F.A.C. and 62-701.320(7)(i), F.A.C.)**

There ~~was~~ ~~were~~ ~~one~~ ~~two~~ (12) enforcement action associated with Clean Harbors Florida during the last 5 years.

**10. Provide documentation that the applicant either owns the property or has legal authorization from the property owner to use the site for a waste processing facility (62-701.710(2), F.A.C. and 62-701.320(7)(g), F.A.C.)**

FDEP form 62-730.900(2) for the RCRA permit modification contains the land owner certification the site. This information has also been previously provided to the Department.

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## Attachment A

(Retain – Unchanged)

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## Attachment B

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**SSI Shredding Systems**  
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## Proposal for SSI Dual-Shear® model M100H

SSI low speed, high torque, two shaft rotary shear shredder

**WHAT NEEDS SHREDDING?**

**Application:** Non haz materials: This shredder can process a wide range of materials, examples include:  
 Auto and light truck tires, loose metals, baled or loose plastic and paper, electronics, MSW, bulky waste, etc.

**M100H DESCRIPTION:**

**Shredder:** Shredder features:  
 Patented ACLS™ - Advanced Cutter Locking System  
 Individually removable cleaning fingers  
 Proprietary bearing & seal arrangements at shredder gearbox and endplate  
 CNC machined shredder frame – torsion box design, modular construction  
 Heavy-duty gear reducer

Shredder hardware:  
 41" (1040mm) wide x 63" (1608mm) long cutting chamber  
 20.9" (530mm) diameter cutters designed for application. 2" 1 & 2 hook std spiral  
 7.4" (188 mm) high strength hexagonal shafts  
Ram hopper  
 Shredder support stand; 48"

Hydraulic power unit:  
 200HP (149kW) drive motor (TEFC)  
Open loop system with SSI designed and built skid type base  
 Automatic hydraulic overload reversing of shredder  
 Heavy duty heat exchanger

**Controls:** Full electrical controls at 460V, 575V/60Hz or 415V/380V/50Hz are included<sup>1,2</sup>:  
Control features:  
 Hydraulic pressure sensors trigger automatic shredder shaft reversals as needed  
 "Auto-chop" adjustable directional control of the shredder shafts  
 Soft starter included for the 200HP electric motor  
 Auto shutdown on frequent reversal of shredder  
 System "fault codes" displayed on touch screen to simplify diagnostics and troubleshooting  
 E-stop circuit allows for expansion

Panel design standards:  
 Programmable controller  
 UL-508 / CUL approved  
 Touch screen operator interface  
 NEMA 4 (IP66) rated enclosure(s)  
 24VDC control voltage  
 Minimum SCCR standard of 35kA (higher ratings available)

Control notes:  
<sup>1</sup> Integrated auxiliary device starters and control packages available at additional cost  
<sup>2</sup> 200-240V electrical available at an additional charge, consult SSI for details

**WHAT NEEDS SHREDDING?**

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## DUAL-SHEAR® M85 SHREDDER

SSI's Dual-Shear® M85 is a low-speed, high-torque, two-shaft, rotary shear shredder designed to efficiently process a variety of difficult materials.

### M85 DUAL-SHEAR® SHREDDERS PROCESS MATERIALS INCLUDING:

- Mixed and Bulky Waste
- Organic Waste
- Passenger & Truck Tires
- Fibers / Textiles / Foam
- Plastics (Purings & Film)
- Books and Magazines
- Steel Drums
- Metals
- Paper / Cardboard
- Electronic Scrap
- Wood / Pallets
- and more...

### ELECTRIC OR HYDRAULIC DRIVE

#### Hydraulic Drive When Processing:

- Mixed, unsorted materials
- Installations requiring optional reduced voltage starting
- Bulk feed materials
- Materials requiring enhanced particle size or throughput control
- Materials containing non-shreddables

#### Electric Drive When Processing:

- Sorted, uniform materials
- Materials containing limited non-shreddables
- Conveyor fed or metered materials



### SSI ADVANTAGES

#### HIGH-TORQUE, LOW-SPEED DESIGN

Delivers multipurpose shredding with greater on-line reliability and lower maintenance requirements than other technologies.

#### PATENTED ACLS - ADVANCED CUTTER LOCKING SYSTEM™

Eliminates daily requirement to tighten cutter stack while improving shredder performance and cutter life.

#### SHOCK LOAD PROTECTION FEATURE

Protects shredder and drive components. Electric version offers patented SSP - Severe Shock Protection™ controlled torque coupling. Hydraulic version utilizes multiple relief valves.

#### AUTO REVERSAL FEATURE

Protects against overfeeding and damage by non-shreddables.

#### CONVERTIBLE DRIVE

Versatile design accommodates electric or hydraulic drive. Optional conversion package available.

#### PROPRIETARY BEARING PROTECTION

Isolates bearings from cutting chamber contamination and protects against bearing failure.

#### DIRECT DRIVE MOTOR

Provides improved efficiency and reliability. Alternate speed and torque combinations available.

WHAT NEEDS SHREDDING?™

FD-01465

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**SSI Shredding Systems**

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### M100H FEATURES & BENEFITS



**HYDRAULIC DRIVE**

OFFERS MAXIMUM DRIVE TRAIN PROTECTION, QUICK REVERSALS, AND HIGH VERSATILITY IN TOUGH APPLICATIONS



**HOPPERS**

APPLICATION-SPECIFIC FEED HOPPERS AVAILABLE, INCLUDING PATENTED RAM ASSIST



**PIERCE-POINT CUTTERS**

PULL MATERIAL INTO THE CENTER & CUT IT INTO "STRIPS" APPROXIMATELY THE SAME WIDTH AS THE CUTTERS



**PATENTED ACLS**

ADVANCED CUTTER LOCKING SYSTEM MINIMIZES MAINTENANCE & PROLONGS CUTTER LIFE



**CLEANING FINGERS**

KEEPS SHREDDED MATERIAL FROM BUILDING BETWEEN CUTTERS



**SEAL & BEARING PROTECTION**

COMBINATION OF CONVENTIONAL & LABYRINTH SEALS TO PREVENT CONTAMINATION



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### M100H PHOTOS:

### SERVICES

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BASIC SPECIFICATIONS:	
Estimated system weight:	26,000 lbs (11,700 kg)
Heaviest piece (shredder head):	20,000 lbs (9,000 kg)
Basic footprint of system:	141" (3583mm) L x 69" (1753mm) W x 136" (3454mm) T

\*Notes: Width and Height may change based on application and equipment configuration.  
Weight and Dimensional information does not include the shredder hydraulic power unit.

**WHAT NEEDS SHREDDING?**

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**SSI Shredding Systems**

9760 SW Freeman Dr. • Wilsonville, OR 97070 USA  
(503) 682-3633 • info@ssishredding.com

Assembled and tested prior to shipment  
Documentation: 2 sets of operations & maintenance manuals  
SSI standard limited warranty (copy attached to this quote)  
24-Hour technical support (toll-free in the USA)



**Note:** Installation photos may include optional features & equipment that are not included on this quotation. Please contact SSI with any questions you may have.



10/24/2017 8/30/2018



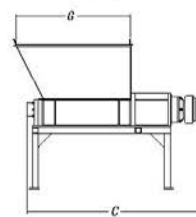
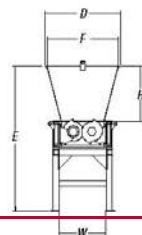
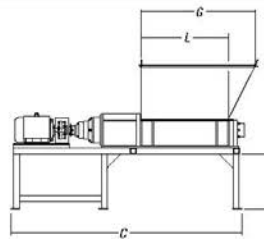
SSI Shredding Systems

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 email: info@ssishredd.com

### STANDARD CUTTING CHAMBER (W X L)

Optional length

35" X 52" (890mm X 1,320mm)  
 63" (1,605mm)



SSI offers a full range of energy-efficient electric and hydraulic shredders as well as custom units to meet all processing requirements.

### STANDARD CUTTER PROFILES



SHREDDER MODEL NO.	M35E	M35H
Drive	Electric	Hydraulic
Number of Electric Motors	One	One (HPU)
Horsepower	100 HP (75 kW)	100 HP (75 kW)
Horsepower Range	100-150 HP (75-113 kW)	100-150 HP (75-113 kW)
Voltage	460/540	460/540
Voltage Options	Many - Consult Factory	Many - Consult Factory
Autochope Feature	N/A	Included
Shock Load Protection	Yes (SSP™)	Yes (Multiple Relief)
Cutter Thickness (nominal)	2" (50mm)	2" (50mm)
Cutter Diameter	18.1" (460mm)	18.1" (460mm)
Cutter Material	4140 HT	4140 HT
Shaft Diameter	6" (152mm)	6" (152mm)
Cutting Chamber (WxL)*	35" x 52" (890mm x 1,320mm)	35" x 52" (890mm x 1,320mm)
Machine Length (C)*	164" (4,166mm)	132" (3,357mm)
Machine Width (D)	64" (1,622mm)	64" (1,622mm)
Machine Height (E)	117" (2,981mm)	117" (2,981mm)
Machine Weight	15,500 lbs (7,031 kg)	17,200 lbs (7,740 kg)
Hopper Opening (FxG)*	59" x 67" (1,500mm x 1,703mm)	59" x 78" (1,500mm x 2,000mm)
Hopper Height (H)	45" (1,150mm)	45" (1,150mm)
Stand Height (I)	48" (1,225mm)	48" (1,225mm)
HPU Configuration	N/A	Closed Loop
HPU Dimensions	N/A	7"x75"x70" (1.7m x1.9m x1.8m)
HPU Weight	N/A	3,725 lbs (1,700 kg)

Electrical controls including motor starters, PLC, and operator interface are supplied in NEMA 4 enclosures.

\* Dimensions apply to the M35 with standard 52" (1,320mm) cutting chamber length. Secondary optional lengths available at 63" (1,605mm) and 40" (1,029mm).

Note: Illustrations, specifications and descriptions presented reflect standard product at time of publication and are subject to change without notice. Dimensions are approximate. Photographs may include optional equipment and accessories. SSI offers compactors, bales, granulators, conveyors and classifiers as well as specialized motors, stands, hoppers, and mobile configurations. Consult factory to discuss your processing needs.

WHAT NEEDS SHREDDING?



10/24/2017-8/30/2018



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## PATENTED RAM TECHNOLOGY

SSI Shredding Systems holds patents on some of the industry's most innovative technologies providing increased efficiency and production

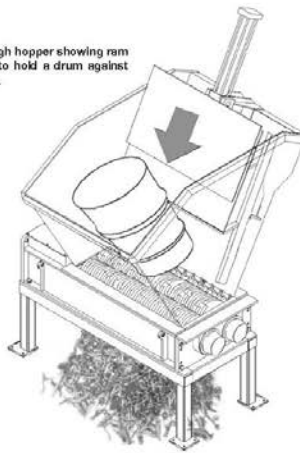
### INCREASE SHREDDER PRODUCTION

Often bulky and light materials can "bridge" or float on top of the cutting table of shredders. SSI's Patented Ram Assist pushes the material into the shredder, allowing the cutter hooks to get a better grab on the material. The hydraulically- or pneumatically-operated ram keeps bulky, round, or otherwise hard-to-grab materials in firm contact with cutters, optimizing shredding efficiency.

#### The ram works particularly well for:

- Drums: plastic, steel, or fiber
- Bulky plastics
- Tubes or cores
- Pallets, wooden crates
- Construction & Demolition (C&D) debris

View through hopper showing ram extending to hold a drum against the cutters.



### SMART RAM

The SSI Ram Assist is not just a brute plunger like you would find on other manufacturers' shredders. It is integrated with the shredder controls so it senses when it is needed and by how much, applying just the right amount and duration of force to help the shredder grab its material effectively.

The SSI ram can be operated automatically or manually. Designed with the ability to sense cutter loading, the ram automatically retracts or extends maximizing throughput. SSI provides ram configurations for a wide variety of both vertical and horizontal feeding systems for its shredders.



### RAM BENEFITS

#### INCREASED PROCESSING EFFICIENCY

Throughput rates increase as material maintains contact with cutters.

#### PROCESSING FLEXIBILITY

Automatic and manual modes allow you to select the best operation mode for the ram.


#### INVESTMENT PROTECTION

Patented automatic ram operation senses shredder loading and automatically retracts and extends ram to reduce overloading.

#### ON-LINE RELIABILITY

Heavy duty construction assures reliable operation.

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## Proposal for SSI Model M85H

SSI Dual-Shear® Hydraulic Drive Rotary Shear Shredder

**WHAT NEEDS SHREDDING?**

**Application:** This shredder can process a wide range of materials, examples include: Car tires, steel drums, loose plastic and paper, light / consumer electronics, MSW, bulky waste, etc.

**SYSTEM DESCRIPTION:**

**Shredder:** SSI Model M85H Shredder, including:

Shredder Features:

- Patented ACLS - Advanced Cutter Locking System™
- Individually Removable Cleaning Fingers
- Proprietary Bearing & Seal Arrangements at Shredder Gearbox and Endplate
- CNC Machined Shredder Frame – Torsion Box Design, Modular Construction
- Heavy-duty Gear Reducer Configured to Suit Application

Shredder Hardware:

- 35" (890mm) wide x 52" (1315mm) long Cutting Chamber
- 18" (460 mm) Diameter, 4140 HT Cutters Designed for Application
- 6" (152 mm) High Strength Hexagonal Shafts
- Standard Funnel-style Feed Hopper; Custom designs also available
- Shredder Support Stand, 60" (1524mm) tall

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Shredder Hydraulic Power Unit:

- 100HP (75kW) Drive Motor (TEFC)
- SSI designed and built with skid type base and heavy duty heat exchanger
- "Auto-chop" adjustable control of shredder shafts (Directional timers)
- 80 Gallon (303 L) Hydraulic Oil Reservoir
- Basic Footprint for HPU: 6' 2" (1.9m) wide x 5' 8" (1.7m) long x 5' 10" (1.8m) tall

**Controls:** Full Electrical Controls at 460V, 575V/60Hz or 415V, 380V/50Hz are included

Control Features:

- Hydraulic Pressure Sensor(s) trigger automatic shredder shaft reversals as needed
- Auto shutdown on frequent reversal of shredder
- System "fault codes" displayed on touch screen to simplify diagnostics and troubleshooting
- E-stop circuit allows for expansion
- Logic & I/O included for sequence interface to feeding and discharge equipment

Panel Design Standards:

- Programmable Controller
- UL-508 / CUL standards (listing additional, if required)
- Touch Screen Operator Interface
- NEMA 4 (IP66) Rated Enclosure(s)
- 24VDC Control Voltage (other options available)
- 10% extra I/O space allowance
- Minimum SCCR standard of 35kA (higher ratings available)


Control Notes:

- Integrated auxiliary device starters and control packages available at additional cost
- 200-240V electrical available at an additional charge, consult SSI for details

**WHAT NEEDS SHREDDING?**

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**SSI Shredding Systems**

9760 SW Freeman Dr. • Wilsonville, OR 97070 USA  
 ph: (503) 682-3633 • fax: (503) 682-1704  
 email: info@ssworld.com

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**SERVICES:**


Assembled and tested prior to shipment  
 Documentation: 2 Sets of Operations & Maintenance Manuals  
 SSI Standard Limited Warranty (copy available upon request)  
 24-Hour Technical Support (toll-free in the USA)

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
**DESIGN FEATURES & BENEFITS:**

**DESIGN features**


**HOPPERS**  
Application-specific feed hoppers available, including patented ram feed assist.




**SEAL & BEARING PROTECTION**  
Proprietary "multiple-barrier" system, including a mix of conventional and labyrinth seals to prevent contamination.



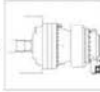
**PATENTED ACLS™**  
SSI's "Advanced Cutter Locking System" maintains a tight cutter stack, minimizing maintenance requirements and prolonging cutter life.



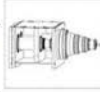
**CUTTER CONFIGURATION**  
Application-specific cutter configurations.



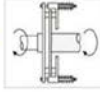
**DRIVE CONFIGURATIONS**  
Electric, hydraulic and SmartDrive™ options available to suit specific needs.




**DIRECT DRIVE**  
Planetary gear boxes are splined directly into the drive shaft, amplifying torque and allowing greater flexibility of applications.

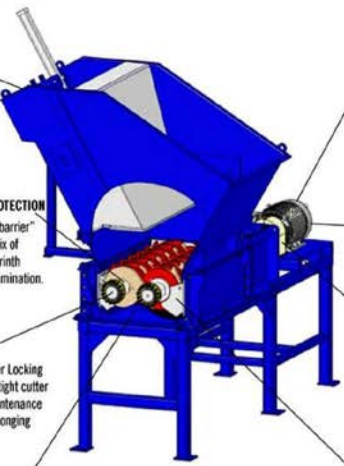


**PATENTED SSP™**  
SSI's "Severe Shock Protection" system protects the drive system from damage during an event that instantaneously stops shredder shafts. (electric models only)



**CLEANING FINGERS**  
Placed between each cutter and fitting closely around each spacer, the cleaning fingers keep shredded material from clogging the cutting chamber.





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**BASIC SPECIFICATIONS:**

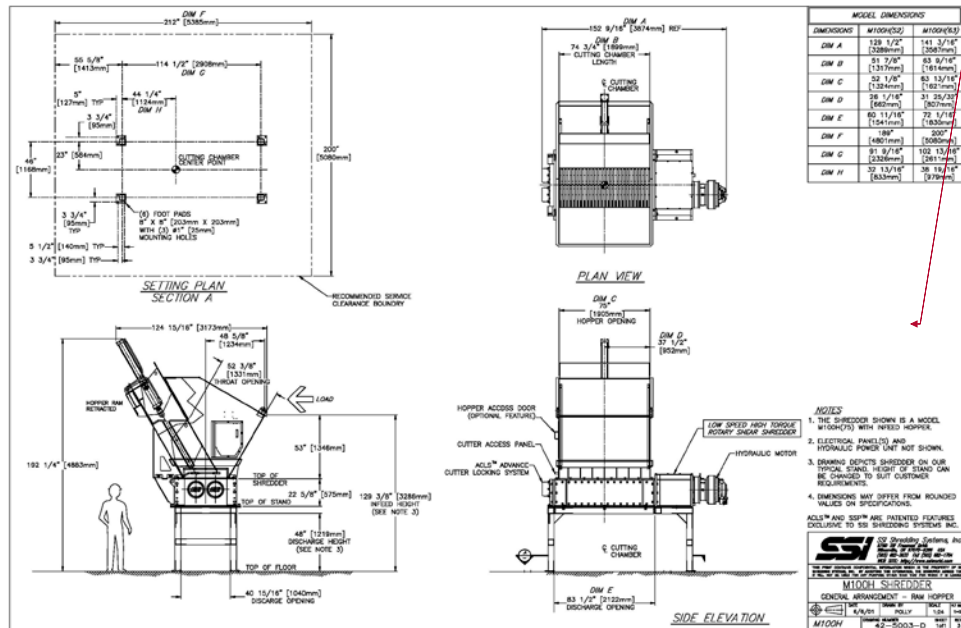
Estimated System Weight:	14,100 lbs (6,350 kg)
Heaviest Piece (shredder head):	11,220 lbs (5,050 kg)
Basic Footprint of System:	121" (3067mm) L x 64" (1622mm) W* x 122" (3108mm) T*

\*Note: Width and Height may change based on application and equipment configuration

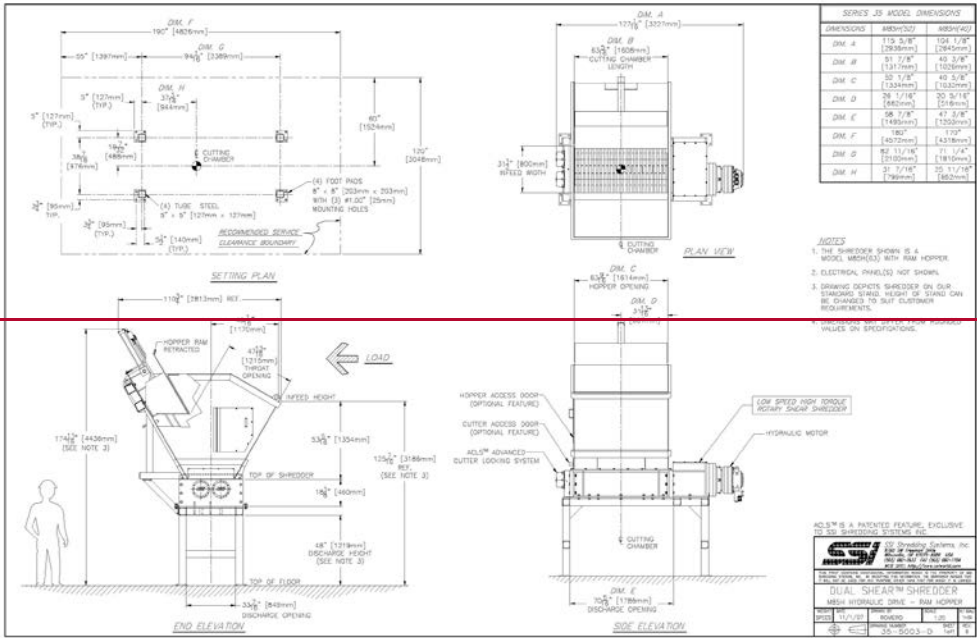
WHAT NEEDS SHREDDING?

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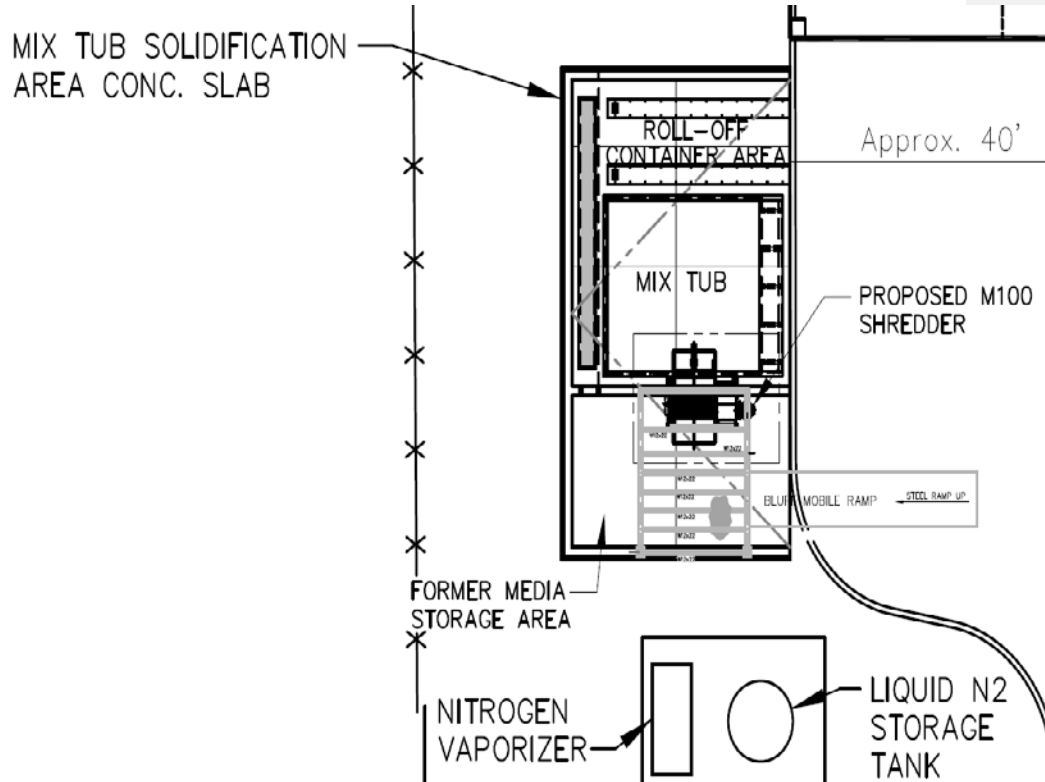


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## Attachment C

10/24/20178/30/2018

**ATTACHMENT C**



10/24/2017 8/30/2018

