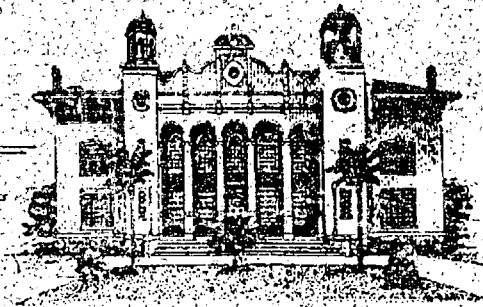


FILE

**MODIFICATION OF
APPLICATION FOR PERMIT TO CONSTRUCT A MATERIALS
RECOVERY FACILITY FOR THE COMPOSTING FACILITY
SUMTER COUNTY SOLID WASTE MANAGEMENT FACILITY**

PREPARED FOR:

*Sumter
County*



**BOARD OF COUNTY COMMISSIONERS
DEPARTMENT OF PUBLIC WORKS
209 NORTH FLORIDA AVENUE
BUSHNELL, FLORIDA 33513**

DECEMBER, 1995

92-1100.000

Springstead Engineering, inc.

Consulting Engineers — Planners. — Surveyors

727 South 14th Street

Leesburg, Florida 34748

Lake (904) 787-1414

Sumter (904) 793-3639

Fax (904) 787-7221

**MODIFICATION OF
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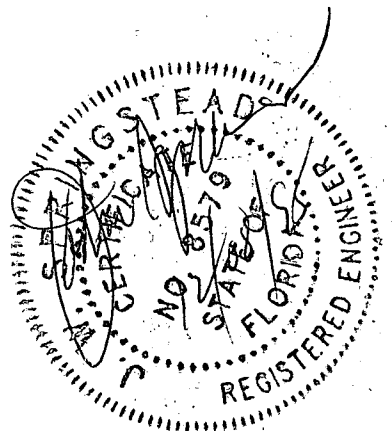
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1.0 INTRODUCTION AND SCOPE

1.1 Purpose

This document has been prepared under the direction of the Sumter County Board of County Commissioners - Department of Public Works for the purpose of submitting a completed permit application to the Florida Department of Environmental Protection (FDEP) in order to permit the construction of a new materials recovery facility at the Sumter County Solid Waste Management Facility (SCSWMF) in Sumterville, Florida.

1.2 Site Location

The subject facility is located south of County Road 470 approximately 1 mile east of Interstate Highway 75 in Sumterville, Sumter County, Florida (Sections 15 and 22, Township 20 South, Range 22 East). The general site location is shown on the Site Location Map presented on Sheet 1.

1.3 Status of County

Sumter County is a small, rural west central Florida county with a population of approximately 32,000. Sumter County is currently at the 10 mil cap for ad valorem taxes and has been for the past five years. The unemployment rate in the county is about 10% which is above the state average. Resources are extremely limited. It is the County's intent through the addition of these new solid waste facilities to provide environmentally sound and cost effective solid waste disposal to County residents for an extended period of time.

1.4 Site History

This solid waste facility site was originally permitted by FDER as a Class I landfill in 1975. As the landfill began to reach capacity and the State of Florida passed laws requiring recycling, the officials of Sumter County realized the need for a different approach to the County's methods of treatment of solid waste.

After reviewing the options which were available at the time for treating solid waste, Sumter County chose the process of MSW composting to provide solid waste management along with extensive resource recovery to separate out and retrieve recyclables. It was the County's intent to plan for the future by establishing environmentally acceptable and economically feasible methods to process solid waste. As the site Class-I landfill was being closed, the County was constructing one of the first resource recovery/MSW solid waste composting facilities in the state. Sumter County began composting Class I solid waste in 1988. Since beginning operation, this facility has provided continuous processing of solid waste by composting, recovering recyclables and ultimately disposing of inert solid waste at FDEP approved facilities. Additional

composting pad space, process areas and processing equipment have been systematically added to streamline the resource/recovery and composting process.

Sumter County has purchased 80 acres of property, 40 acres to the north and 40 acres to the south, adjacent to the existing solid waste facility for expansion. Originally an application was submitted to FDEP on December 16, 1994 to construct a covered composting pad and finishing building to process compost after material had been through the existing materials recovery facility. The County has modified their approach to the handling and processing of solid waste through the process of reviewing the proposed design. The modifications were, in part, prompted by questions posed by FDEP in plan review comments.

The County has a set amount of money in a bond issue with which to accomplish design and construction of a new facility. The County wants to make sure that the facility to be constructed at this time is the most environmentally aggressive and technologically advanced it can be, within the limit of funds available for construction.

The County's approach for permitting a facility at this time includes this permit for a new Materials Recovery Facility and a future permit to modify the composting process. The goal of the proposed materials recovery facility is to achieve a process that maximizes recovery of recyclables and removal of items which will limit the quality of the compost product at the end of the process. The County is currently designing the composting portion of the facility to be permitted and constructed under a future permit.

This application is for construction of a 33,000-square foot building which will house the commercial and residential tipping floor, the materials recovery equipment and the input-feed mechanism for the proposed compost digester to be constructed in the next phase. In addition, parking and drive areas will be constructed to connect the new building, the existing facility north of the construction site, and access roadway west of the site. Stormwater management structures will also be constructed.

1.5 Current Facility Status

1.51 General

The Sumter County Solid Waste Management Facility is the only public collection center for solid waste in the county. The site is centrally located in Sumterville to provide convenient access to all residents of the county. The facility is open six days a week (Monday through Saturday) between the hours of 8:00 AM and 4:00

PM. Operation and maintenance of the facility is provided by Sumter County. The facility director is Mr. Terry Hurst.

1.52 Operations

The normal operational process at the present facility generally consists of dropping off clean recyclables prior to crossing the scale, transfer vehicles being weighed, and proceeding to the materials recycling and resource-recovery facility or to the recycling area. Material directed to the resource-recovery building is placed on the tipping floor. The material is then pushed into a hopper and on to a belt conveyor where the bags are ripped open and then pass under a magnetic belt separator to remove ferrous items. The waste then travels on to a sorting conveyor where aluminum, HDPE, PETE, OCC, nonferrous metals, etc., are removed by hand sorters. The material then goes into a double-rotor flail mill where it is shredded and conveyed into trucks for transportation to the open composting pads. The material is formed into windrows and composted for approximately 60 days. When the compost is mature, it is passed through a screen to remove plastics and other undesirable materials. The compost is tested to determine classification and then sold and distributed. Residuals from the composting process are disposed of at an FDEP approved facility.

Recyclables in the waste stream including metals, plastics, glass, used oil, tires, batteries, and other items are segregated and placed in areas designated for each item. The recyclables are sold and removed by vendors.

Construction and Demolition (C&D) debris is generally not received at the site. Any C&D which is received is segregated, loaded and hauled to an FDEP approved disposal site.

Hazardous waste is not accepted at the facility.

When the facility is operating, it can process, on average, about 100 tons of solid waste a day. This includes the operation of the materials-recovery facility and the three existing composting pads.

Currently, due to a consent agreement and Specific Conditions in the operation permit, all municipal solid waste (MSW) received at the facility is placed on the tipping floor, easily removable recyclables are extracted, the remaining material is loaded and hauled to an FDEP approved disposal facility. The three existing site composting pads are currently in use composting the stored material which was

taken in to the facility and placed in the lined storage cell prior to July 1993. The lined storage cell will be empty as of March 16, 1996.

1.6 Permit Application

This permit application is being submitted to FDEP to construct a new Materials Recovery Facility. Information supporting this application is presented in this report. Information presented in this report is related to the proposed Materials Recovery Facility.

1.7 Lined Storage Cell

At this time, the lined storage cell contains material which was sorted, milled and readied to be placed on a composting pad. The previous operator did not provide sufficient compost pad space to adequately process the material. The County will have the cell emptied by March, 19, 1996.

The leachate treatment system for the three composting pads was permitted in December 1992, constructed in the spring of 1993 and approved for use in July, 1993. Since approval of the use of the north and south pads, material from the cell was continually removed and composted along with the incoming waste stream up until June, 1994. Since that time, all waste coming into the facility has been hauled to an FDEP approved facility for disposal so that all composting pad space can be devoted to processing material from the cell.

2.0 SPECIFIC ATTACHMENT ITEMS

The new materials recovery facility has been designed to process 100 tons of material during a 7½-hour work shift. The building will include a tipping floor for commercial haulers and a separate tipping floor for individuals. The tipping floors will be located on the south end of the building. The tipping floor will be used to push the waste into a hopper and onto a belt conveyor which will transport the material up to the processing level. Large bulky waste will be removed on the tipping floor and at the first station of the sort conveyor. The material will then pass through a bag opener and onto an inspection/sort conveyor. Plastic bags will be removed from the stream and transported via vacuum to a plastic bag baler. The material will then pass under a belt magnet where ferrous will be removed and onto a residue (disk) screen where material with a bulk size of less than 2 inches will be removed and fall onto a conveyor.

Material which travels across the screen will then pass over the primary sort conveyor where plastics, glass, paper and other recyclables will be removed from the stream and dropped into bins below. The material then passes below a magnetic head pulley to recover additional ferrous and over an eddy current separator to recover aluminum. The material remaining after the eddy current separator is rejoined with the material passing through the disk screen, which has also passed by a magnetic head pulley, and is then transported to the compost feedstock area, which will eventually feed into the future digester.

A schematic of the proposed system is presented on Sheet 7. Details of the proposed equipment is included in Appendix A.

Procedures for start-up operation, normal operation and emergency shut-down operations in addition to safety information concerning the equipment are being developed by the contractor who is building and installing the equipment. This information will be presented to the Department for review as soon as the County can obtain it from the vendor.

Recovered recyclables will be baled in the building and will be transported to the building which houses the existing materials recovery facility for storage prior to transport to the recycler.

1. FACILITY DESIGN

a. Zoning Map

A recently revised map of the area showing use and zoning within one (1) mile of facility is presented in Appendix B.

b. Site Plan

A site plan of the existing facility and the proposed additions is presented in the accompanying set of drawings and shows the following:

- (1) Dimensions of site;
- (2) Plan for receiving, processing, production curing and storage areas;
- (3) Fencing or other measures to restrict access.

c. **Topographic maps**

A topographic map prepared from a recent aerial photograph was prepared and is enclosed in the accompanying set of drawings. The topographic map shows the following:

- (1) One (1) foot contour intervals;
- (2) Access roads;
- (3) Grades required for proper drainage;
- (4) Special drainage devices;
- (5) Other pertinent information based on intended use of the facility.

d. **Report**

(1) **Design capacity of the facility**

The design capacity of the facility is one hundred (100) tons in a 7½-hour shift.

(2) **Anticipated type and source of solid waste**

Sumter County contracted with TIA Solid Waste Management Consultants to conduct a study of the composition of the county's municipal solid waste. The results of the study were submitted to the Sumter County Board of County Commissioners in a report titled Sumter County Waste Composition Study - January 1991

Table 3-5 of the above report identified the types and percentages of waste as follows:

1.	Newsprint	7.9
2.	Fine Paper	4.2
3.	Misc. Paper	9.0
4.	Corrugated	8.7
5.	Plastic Film	4.4
6.	Plastic (PET)	0.8
7.	Plastic (HDPE)	0.5
8.	Plastic (BOT)	1.4
9.	Plastic (Other)	3.8
10.	Textiles	1.5
11.	Yard Waste	13.8
12.	Food Waste	5.4
13.	Wood Lumber	0.5
14.	Glass	4.1
15.	Rubber	0.4
16.	Steel Cans	3.1

17.	Other Ferrous	0.5
18.	Non-Ferrous (Aluminum)	0.5
19.	OBW	0.0
20.	Construction	15.6
21.	Sweepings	0.0
22.	Other	14.0

Also, footnote 3 in Table 3-5 indicates the source of waste as follows:

1.	Residential	54%
2.	Commercial / Industrial	43%
3.	Institutional	3%

2. FACILITY PERFORMANCE AND DESIGN STANDARDS

a. Support for Operation

(1) Material Type (soil, synthetic, other).

The proposed building floor is to be constructed of concrete. Roadways and parking drive areas will be constructed of recycled asphaltic pavement (RAP) placed on a compacted subgrade.

(2) Adequate base support.

The native soil materials beneath the proposed composting pad, screening building and roadways will provide an adequate base support. The geotechnical soil evaluation performed for the site has been previously submitted.

b. Leachate control and removal system performance.

Leachate management for the materials recovery building will consist of catchment basins at locations throughout the building connected with HDPE pipe. The pipes will drain into a sump. Eventually, the sump will pump any leachate collected into the digester to be used in the composting process. Until the Digester is constructed, the leachate level in the sump will be checked at the beginning of the day, the end of the day and at 2-hour intervals throughout the day. When necessary, the leachate in the sump will be pumped into a truck and transported to the existing leachate recirculation system.

c. Stormwater management system performance.

(1) Prevention of surface water flowing into receiving and processing areas.

Curbing around the base of the building will prevent surface water from flowing into the building. If blowing rain is deposited into the building, it will drain into the leachate collection system.

- (2) **Stormwater run-off control; retention, detention ponds.**
Stormwater run-off at the site is designed to be collected from the building gutters and directed to perimeter stormwater retention system around the proposed buildings.
- (3) **Equivalency to design standards.**
The stormwater management for the new construction at the facility is being designed to meet the current criteria of the Southwest Florida Water Management District (SWFWMD).
- (4) **Design to minimize ponding of solid waste, composting material and finished product.**
The floor surfaces of the building are sloped such that surface flow is directed to the leachate collection system. No ponding should occur on the floor of the building. The outside areas (soil and paved) will be sloped so that no ponding water will accumulate and stormwater is effectively transported to the treatment area.
- (5) **Water management district approval.**
A Management of Storage of Surface Water Permit has been received from SWFWMD. This permit will be modified to reflect the changes which are being proposed.

3. **OPERATIONAL FEATURES AND APPURTENANCES**

- a. **Effective barrier.**
The entire solid waste complex is surrounded by fencing, with entry being controlled by locking gates.
- b. **All weather access road.**
Roads that provide access between public roads or highways and the Sumter County Landfill are maintained so as to be passable in ordinary inclement weather. The west access road between CR 470 and the proposed buildings is paved with asphaltic concrete. The east access road between CR 470 and the proposed buildings is paved with RAP.
- c. **Signs indicating name of operating authority, traffic flow, hours of operation, contact in cases of emergencies and charges (if any).**
A sign indicating the name of the facility and operator is located on CR 470. Numerous instructional signs pertaining to traffic flow are erected at the facility. Signs specifying rates and acceptable wastes

are visible to patrons approaching the scales. Signs are posted directing traffic back to the scales after depositing waste and out of the facility. Signs are posted indicating the hours of daily operation, indicating that the facility is closed on Sundays, that solid waste transported from outside Sumter County is not permitted and that Hazardous materials are not accepted.

d. Scales.

State approved weigh scales are provided at the entrance to the solid waste complex. Measurement of all refuse received at the facility provides data for planning, forecasting and a basis for establishment of fees.

e. Litter control devices.

Blowing litter at the facility will be contained by the sides of the building and screens over the open portions of the buildings. The facility is regularly patrolled to minimize any litter which may escape the screens.

f. Fire protection and control provisions.

Suitable measures will be taken to prevent and control fires. A source of water supply suitable for fire flow has been permitted through SWFWMD (Permit No.). Fire hydrants are will be located around the new and the existing facility. A FDEP dry-line permit has been approved for construction of the water lines (FDEP Permit No.). Suitable fire extinguishers, maintained in working order, will be located at several strategic locations in and around the facility. The Lake Panasoffkee Fire Department is located approximately three (3) miles from the site.

g. Odor control devices, methods or practices.

Odor control will be provided by design of the building to have partial sides and open roll-up doorways. This will allow the natural air flow to circulate throughout the building. This should provide sufficient air volume to dilute any negative odor effects.

4. ADDITIONAL OPERATIONAL CRITERIA

a. Attendant.

An attendant is on duty during all operating hours at the scale house. The facility director is also on duty at the facility during all hours of operation. Tipping floor personnel are on duty during operating hours to help with unloading operations and inspect the solid waste stream.

b. **Communication devices.**

Communication is provided at the facility by telephones, two-way radios, direct voice communication and hand signals.

5. **OPERATIONS PLAN**

a. **Designation of responsible persons.**

Mr. Garry Breeden
Sumter County Director of Public Works
319 E. Anderson Avenue
Bushnell, Florida 33513

b. **Proposed equipment.**

Processing equipment is presented on Sheet 7 of the plans with the details presented in Appendix A.

c. **Contingency operations.**

The Solid Waste Management Facility is owned by Sumter County. The County can utilize available County equipment, machinery and personnel resources in the event of an emergency, such as fire or equipment failure.

d. **Controlling the type of waste received at the site.**

Sumter County Solid Waste Facility does not accept hazardous waste. It is recognized that items may be included in the normal waste stream that should not be processed through the facility. After segregation, bins are provided for storage of items until proper disposal is accomplished. Sumter County will not accept easily identifiable hazardous waste and will remove any which may be inadvertently delivered. Personnel are to read and become familiar with the Hazardous Waste Information for Sumter County Landfill

Operations Personnel supplement in Sumter County Solid Waste Facility Operational Guidelines (November 3, 1988).

Incoming solid waste is inspected at four check points as follows:

1. The attendant at the scale house looks at all incoming waste loads. The scale house attendant takes the following actions in the event that hazardous waste is identified:
 - a. Tells the person hauling the waste that the waste is hazardous and that it will not be accepted by the facility;
 - b. Insures that the waste leaves the facility with the hauler.

2. Tipping floor personnel are notified by the scale house attendant of the presence of hazardous waste. The notified personnel will observe the dumping of the load and insure that the hazardous waste is not dumped. Tipping floor personnel will insure that the hazardous waste is on the vehicle when it leaves the tipping floor and insure that the vehicle precedes directly to the scale house.
3. The scale house attendant will insure that the hazardous waste is on the vehicle when it leaves the site.
4. The attendant responsible for inspecting solid waste as it falls onto the tipping floor will visually inspect for hazardous waste. If the source of the hazardous waste can be identified, responsible parties will be notified and required to remove the hazardous waste from the facility. If the source of the hazardous waste cannot be identified, it will be separated and placed in bins located inside the building. Sumter County will contract with a commercial enterprise to provide pickup and removal of any hazardous waste within 72 hours or transport the material to a hazardous waste disposal facility.

A tank located inside the facility is provided for the collection of used motor oil. The oil is picked up by an approved vendor. Lead batteries are palletized for collection by an approved vendor.

e. **Weighing incoming waste**

Provisions exist for weighing the solid waste delivered to the facility for processing. State certified weigh scales are provided. The only materials which are not weighed when entering the site are clean recyclables which can be dropped off prior to crossing the scale. Measurement of all refuse received at the facility provides data for planning, forecasting and a basis for establishment of fees.

f. **Vehicle traffic control and unloading**

Signs direct commercial and non-commercial patrons to the proper entrances to the facility. Signs are posted directing commercial haulers to the north end of the building. Signs are also posted directing haulers of construction debris, white goods and tree stumps to the proper location. Assistance is provided for unloading

due to the ongoing inspections of the solid waste stream at the facility.

g. Operations of leachate and stormwater controls

The operation of the leachate system is presented above in response 2b on Page 8 of this report. This information will be revised upon construction of the digester.

h. Designation of backup disposal site(s)

Backup disposal sites include, but are not limited to, the Lake County Incinerator, located 12 miles east of the site in Okahumpka, Florida.

3.0 DETAILED OPERATIONAL PLAN FOR NEW FACILITIES

This section presents the proposed detailed operational plan for processing material at the new building.

At this time, material is not being processed through the mills in the existing material recovery building. All material, with the exception of easily recovered recyclables, are being placed on the tipping floor, reloaded and transported to a FDEP approved facility for disposal.

The new materials recovery facility has been designed to process 100 tons of material during a 7½-hour work shift. The building will include a tipping floor for commercial haulers and a separate tipping floor for individuals. The tipping floors will be located on the south end of the building. The tipping floor will feed the waste into a hopper and onto a belt conveyor which will transport the material up to the processing level. Large bulky waste will be removed on the tipping floor and at the first station of the sort conveyor. The material will then pass through a bag opener and onto an inspection/sort conveyor. Plastic bags will be removed from the stream and transported via vacuum to a plastic bag baler. The material will then pass under a belt magnet where ferrous will be removed and onto a residue (disk) screen where small non-recyclables and organics will be removed and placed on a conveyor.

Material which travels across the screen will then pass over the primary sort conveyor where plastics, glass, paper and other recyclables will be removed from the stream and placed into sorting bins below. The material then passes below a magnetic head pulley to recover additional ferrous and over an eddy current separator to recover aluminum. The material remaining after the eddy current separator is rejoined with the material passing through the residue screen and is transported to the compost feedstock area, which will eventually feed into the future digester.

A schematic of the proposed system is presented on Sheet 7. Details of the proposed equipment is included in Appendix A.

Upon completion of the system design, the compost feedstock material will be loaded into the digester. Plans for the digester are being developed and an application for a permit will presented to the Department in the near future.

APPENDIX A



RRT Design & Construction Corp.
Subsidiary of Resource Recycling Technologies, Inc.
125 Baylis Road
Melville, NY 11747
516-756-1060
FAX 516-756-1064

SEP 7 AM 9 17

September 6, 1995

Springstead Engineering, Inc.
727 South 14th Street
Leesburgh, Florida 34748
Attn: Mr. David W. Springstead

Re: Sumter County Processing, Recycling & Composting
Facility

Dear Mr. Springstead,

Attached is the information previously transmitted to Mr. Mitch Kessler, Managing Director of TIA Solid Waste Management Consultants, Inc. for use in preparing the DEP permit application for the Sumter County Processing, Recycling & Composting Facility.

After reviewing the enclosed information, which includes equipment catalog cuts and conveyor cross sections. It should be recognized that the information provided is typical of the equipment and conveyors that will be utilized in the Sumter County Facility, specific Manufacturers to supply the equipment have not been selected at this time.

Should you have any questions or require any additional information please do not hesitate to call me at 516-756-1060 ext. 121.

Very truly yours,

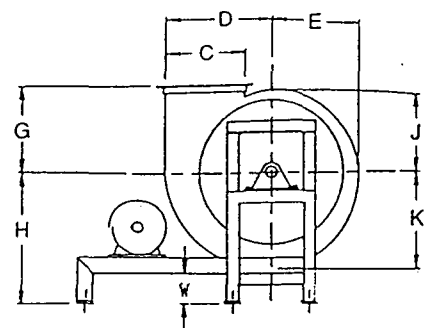
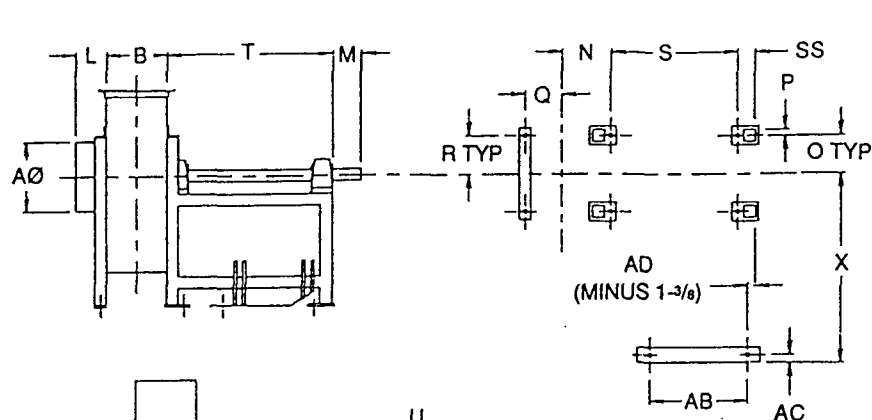
RRT DESIGN & CONSTRUCTION CORP.

David J. Kettler, P.E.
Director of Projects

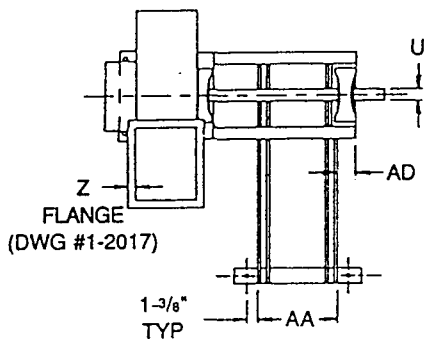
cc: M. Kessler/TIA
N. Egosi
W. Meckert

KICE "FC" FAN - FC5 THRU FC29

ARRANGEMENT #9FB BASE



(VIEWS SHOW MOTOR MOUNTED LEFT)

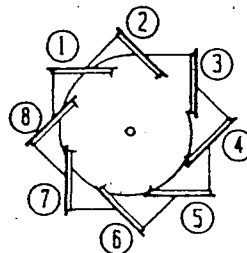


TOP VIEW

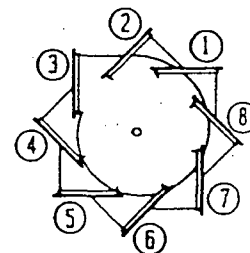
TOP VIEW OF BASE HOLES
(HOLE SIZE = 5/8\"/>

CONFIGURATION OPTIONS (VIEWED FROM DRIVE SIDE)

1. BLADE ROTATION - CLOCKWISE OR COUNTER CLOCKWISE
2. HOUSING POSITION (SEE INDICATOR)
 1. UP BLAST
 2. TOP ANGULAR UP
 3. TOP HORIZONTAL
 4. TOP ANGULAR DOWN
 5. DOWN BLAST
 6. BOTTOM ANGULAR DOWN
 7. BOTTOM HORIZONTAL
 8. BOTTOM ANGULAR UP
3. MOTOR LOCATION - AVAILABLE "MOTOR LEFT" OR "MOTOR RIGHT". LOCATE MOTOR LEFT IF POSSIBLE FOR BETTER JUNCTION BOX ACCESS.
4. DOWN BLAST AND BOTTOM ANGULAR DOWN REQUIRE SPECIAL DRAWINGS.



HOUSING POSITION INDICATOR
(VIEW FROM DRIVE SIDE)
CLOCKWISE ROTATION



HOUSING POSITION INDICATOR
(VIEW FROM DRIVE SIDE)
COUNTER CLOCKWISE ROTATION

	FC-5	FC-7	FC-9	FC-11	FC-13	FC-15	FC-17	FC-19	FC-21	FC-23	FC-26	FC-29
A	5	7	9	11	13	15	17	19	21	23	26	29
B	4 1/2	6 1/8	8 1/2	9 3/4	11 1/4	13	15 1/8	16 3/8	18 1/8	19 3/4	21 1/2	25
C	5	7 1/4	9 3/8	11 1/4	13	14 7/8	17 1/8	18 3/8	20 3/4	22 1/8	25 3/8	28 3/8
D	7 1/8	9 1/2	13 1/2	16 3/8	19 3/8	22 1/2	25 1/4	28 3/8	31 3/8	34 3/8	38 3/8	43 3/8
E	6 1/4	8	11	13 3/8	16 3/8	18 1/2	21	23 1/4	25 3/4	28 3/8	31 3/8	35 3/4
G	6	8	10 1/4	12 1/2	15	17	19	21	23 1/2	26	29 1/4	32 1/2
H	13 1/2	14 1/8	16 3/8	20 3/8	20 3/4	23 3/4	27 1/2	30	33	36 1/2	42	45 1/2
J	5 3/8	7 1/4	10 3/8	12 3/8	14 1/2	16 3/4	19	20 7/8	23 1/2	26	28 1/2	31 3/8
K	6 3/8	8 3/4	12 1/4	15	17 1/4	20 1/2	23 1/8	25 3/8	28 3/8	31 1/4	35 3/8	39 1/2
L	3	3	4	4	4	4	4	4	4	6	6	6
M	3	3	3 1/2	3 1/2	3 1/2	3 1/2	5	5	5	5	5	5
N	4 1/4	5 1/2	6 1/2	7 1/4	9	9 3/8	11	12 1/4	13	13 3/4	15 3/8	17 3/8
O	4 1/2	4 1/4	4 7/8	5 3/8	6 3/8	8 1/4	9 1/4	10 1/2	9 1/2	11	12 1/2	13
P	1/2	1/2	3/4	3/4	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2
Q					6 3/8	7 3/8	8 3/8	9 3/8	10 3/8	11 1/4	12 3/8	14 1/8
R					6	7	8	9	9 1/2	11	12 1/2	13
S	10 1/4	12 1/4	15 3/4	17 3/4	19 3/4	21 3/4	23 3/4	24 3/4	26 3/4	29 3/4	27 3/4	27 3/4
SS	1 7/8	1 7/8	2 1/8	2 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	4 3/8	4 3/8
T	14	16	20	22	26	28	30	32	34	37	37	37
U	1 1/16	1 1/16	1 1/16	1 1/16	1 15/16	1 15/16	2 1/16	2 1/16	2 11/16	2 15/16	3 1/16	3 1/16
W	4	4	4	4	5	5	6	6	8	8	8	14 1/2
X	21	23 1/4	24 3/8	30 3/8	35 1/8	36 3/4	37 3/4	38 1/4	41 1/4	41 1/4	48	51 1/2
Z	1	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	2	2
WEIGHT	8 3/4	12 1/4	15 5/8	19 1/8	22 3/8	26 1/8	29 3/8	33	36 1/2	40	45 1/8	50 1/2
FEET	100	140	210	290	400	546	760	830	960	1320	1730	2130

HORSEPOWER	3	5	10	15	20	25	30	40	50
MOTOR SIZE	182T	184T	213T	215T	254T	256T	284T	286T	324T
AA	6	7	7	8 1/2	10	11 3/4	11 3/4	12 3/4	14
AB	8 3/4	9 3/4	9 3/4	11 1/4	12 3/4	14 1/2	14	15 1/2	16 3/4
AC	1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2
AD	2	2	2 1/4	2 1/4	3 3/8	3 3/8	3 3/8	3 3/8	4 1/4

15 HP

REVISED 9-92

KICE "FC" FAN
FC5 THRU FC29
ARRANGEMENT #9FB BASE
TITLE



KICE INDUSTRIES, Inc.
2040 S. MEAD, WICHITA, KANSAS

MC

DRAWN BY

CHECKED BY

8-1-91

DATE

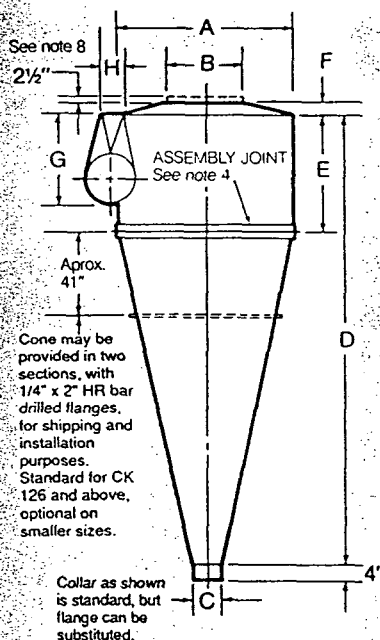
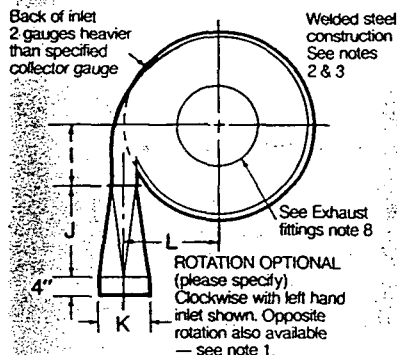
1-3671A

DWG. NO.

PRINTED 10-93

NOTE: ANCHOR EACH FOOT THEN TIGHTEN BOLTS BEFORE RUNNING

THE "CK" CYCLONE COLLECTORS



STANDARD GAGES: CK 18-60, 16 GA.;
CK 66-90, 14 GA.; CK 96-144, 12 GA.
BACK OF INTAKE TWO GAGES HEAVIER.
SHIPPING WEIGHTS ARE FOR
STANDARD GAGES.

MODEL	CFM	A	B	C	D	E	F	G	H	I	J	K	L	SHIP'G WT.
CK- 18	500	18	9	5	44 1/4	15	1 1/4	10	2 1/2	8	12 1/2	5	9 3/8	90
CK- 24	900	24	11	5	60 3/4	18	1 1/2	12	3	9	15	6	12 3/4	150
CK- 30	1450	30	14	5	77 1/4	21	1 3/8	15	4	12	17 1/2	8	16	225
CK- 36	2000	36	16	6	91	23	2 1/4	18	4 1/2	13	20	10	19 1/2	310
CK- 42	2500	42	18	6	108	26	2 3/8	20	5 1/2	15	20	12	22 3/8	400
CK- 45	2900	45	20	6	117	28	2 3/8	22	6	15 1/2	22 1/2	13	24	450
CK- 48	3300	48	22	8	121	31	3	24	6 1/2	16	25	14	25 3/8	510
CK- 54	4100	54	24	8	137	34	3 3/8	26	7	18	27 1/2	15	28 3/4	600
CK- 60	5000	60	27	8	142	38	3 3/4	28	8	20	30	16	32	700
CK- 66	6000	66	30	8	156	40	4 1/8	30	9	22	31	18	35 1/4	840
CK- 72	7100	72	33	10	166	42	4 1/2	33	10	24	32	20	38 1/2	950
CK- 78	9300	78	36	10	180	44	4 3/8	36	11	26	33	22	41 3/4	1100
CK- 84	11000	84	39	10	194	46	5 1/4	39	12	28	34	24	45	1275
CK- 90	13500	90	42	10	208	48	5 3/8	42	13	30	35	26	48 1/4	1425
CK- 96	15000	96	45	12	218	50	6	45	14	32	36	28	51 1/2	1600
CK-102	17200	102	48	12	232	52	6 3/8	48	15	34	37	30	54 3/4	1805
CK-108	19500	108	51	12	246	54	6 3/4	48	17	36	38	32	58 1/4	2035
CK-114	22000	114	54	12	257	56	7 1/8	48	19	38	39	34	61 3/4	2315
CK-120	25000	120	57	12	271	58	7 1/2	48	22	40	40	36	65 1/2	2620
CK-126	30000	126	60	14	287	62	7 3/4	51	24	42	41	38	68 3/4	3300
CK-132	35000	132	63	14	301	64	8	54	26	44	42	40	72 1/4	3900
CK-138	40000	138	65	14	314	66	8 3/8	57	28	46	43	43	75 3/4	4600
CK-144	45000	144	68	14	328	68	8 3/4	60	30	48	44	45	79 1/4	5400

1. Always specify cyclone rotation. For clockwise rotation with left hand inlet as shown, add suffix Letter "L" to model number. For counter clockwise rotation (with right hand inlet) add Letter "R". For example: CK 48 L - indicates left hand inlet with clockwise rotation - as shown.
2. All CK cyclones are welded construction with angle ring reinforcing and sloped top as shown, 36" dia. and larger shipped with cone separate to facilitate passage through doors. Cone is joined to cylinder by caulking and bolting the mating angle iron flanges.
3. The gage of material for CK cyclones may vary. Different gages are available for all sizes. Back of inlet may be of special abrasion resistant steel if specified.
4. Angle iron rings are 1-1/2" x 1-1/2" x 3/16" from CK 18 up through CK 66, 2" x 2"

- x 1/4" through CK 120, and 2-1/2" x 2-1/2" x 1/4" on all others.
5. Standard stock outlet has 4" length collar with outside diameter "C" as noted. This dia. can be increased if specified. For every 1" increase in "C", "D" decreases by approximately 2". A flange as specified can be substituted for the collar.
6. Inlet dia. "K" to be varied within limits upon request. Flat bottom transition inlet included with all cyclones.
7. C.F.M. Ratings are based on 3" W.C. pressure drop.
8. Exhaust fittings (next page) - rain caps for CK 72 and larger and all horizontal outlets are flange mounted to top of cyclone. Otherwise a 2 1/2" (approx.) x "B" dia. collar is provided.

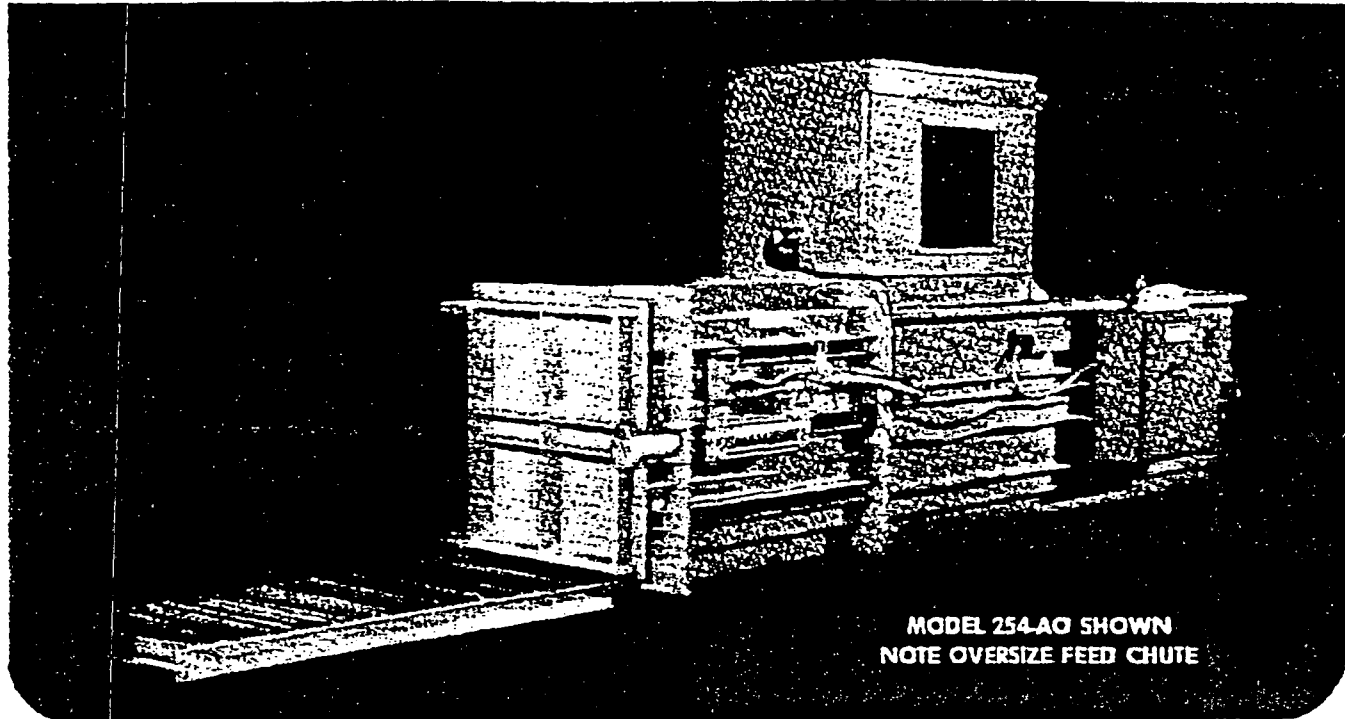
All specifications are approximate and subject to change without notice.

Balewel[®] by Balemaster[®]

200 SERIES
MODELS

242-AO 254-AO
AUTOMATIC CYCLING
OVERSIZE FEED HOPPER

B BALEWEL by Balemaster



MODEL 254-AO SHOWN
NOTE OVERSIZE FEED CHUTE

APPLICATION

Automatic operation provides capacities up to 1200 lbs. per hour of all forms of corrugated paper, newsprint, etc. Ideal for operation requiring 2 to 10 bales daily.

Oversize feed chute measures 28-1/2" x 40" height of chute is 36". Perfect for feed from gravity chute, mechanical or pneumatic conveyor.

Bales range in weight from 250 to 600 lbs. depending on type of material. Bale size 30" x 30" x choice of 42" or 54" length depending on model. The heavier Model 254 offers greater hydraulic thrust for better bale density, stability and size with this Series.

Closed chamber end door design makes unit suitable for silica coated paper like poly and wax, textiles and synthetics, light metal cut-outs and foils.

These oversize models suitable for material fed in whole form — unshredded such as empty small to medium size corrugated boxes.

GENERAL INFORMATION

Units supplied factory tested with Open Drip Proof motor, motor starter and standard controls operating on 125 wire bundle of bale line and wired for 208, 230, 460 or 575 volt, 3 phase, 60 hertz. Factory installed electrical equipment meets OSHA and National Electrical code. Control circuit 115 volts. For operator safety all moving parts enclosed. Hydraulic safety check protects operator and baler during operation.

When ordering, always specify voltage, phase and hertz desired, i.e., (Totally enclosed fan cooled) or other type motors along with special electricals available at slight additional charge. Contact factory for delivery and price.

Bale ejection door opening and electrical control panel locations are provided as pictured unless otherwise ordered. Optional Windowed Feed Chute Door with Control Circuit Interrupter is pictured.

See reverse side for available accessories.

OPERATIONAL SEQUENCE AUTOMATIC — OPERATES UNATTENDED WHILE BALING

The feed chute accepts and accumulates scrap from mechanical or air conveyor or other gravity feed system to the height of the cycling eye. This electric eye sensor activates automatic cycle and the hydraulic baling ram pushes the loose scrap into the sealed compression chamber forming an increment of bale length.

If feed hopper is empty, baling ram rests in storage position. The ram will continue to cycle as long as the sensor is blocked or until the pressure switch is activated indicating the preset pressure has been reached and a bale has been formed.

The baling ram then advances to the "tie off" position and a bright light signals the operator for bale "tie off".

The operator then ties-off bale — pushes reset control button — opens the end ejection door — positions the bale length control arm in front of bale and resumes automatic baling.

Baling continues until the bale ejection limit switch is activated, signaling the operator to remove the tied bale. After bale removal the bale length control arm is returned to its stored position and the operator closes the ejection door, pushes reset button and continues baling.

Balewel by Balemaster

Division of East Chicago Machine Tool Corporation

980 Crown Court — P.O. Box 465 — Crown Point, Indiana 46307
Phone: (219) 663-4525

B BALEWEL by Balemaster

MODELS 242-AO 254-AO AUTOMATIC CYCLING, OVERSIZE FEED HOPPER

SPECIFICATIONS

Completed Bale Size (inches) W.,H.,L.

Feed Chute Size (inches) W.,L.,H.*

Loading Chamber Volume (cu. ft.)

Number of Wire Ties per Bale

Ram Thrust Total (lbs.)

Ram Thrust in lbs./sq. in. of Ram Face

Stroke Cycle (seconds)

Motor-Horsepower

Balelocks

Approx. Gross Wt. (lbs.)

Model 242-AO Model 254-AO

30" x 30" x 42" 30" x 30" x 42"

28 1/2" x 40" x 36" 28 1/2" x 40" x 36"

25 25

3 3

13,000 22,700

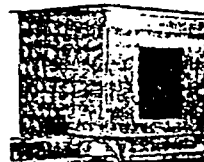
20 20

20 20

10 10

2 2

2,900 5,000



LARGE FEED CHUTE AND HOPPER

Oversize measures 28-1/2" wide x 40" long x 36" high. Scrap accepted from mechanical or air conveyor or other delivery system. Electric eye automatically activates baling ram when materials reach correct level in chute. Electric eye is unaffected by sporadic noise or radio frequencies and vibrations. Optional Windowed Feed Chute Door with Control Circuit Interrupter is illustrated.



DESIGN FEATURES

- Conveniently located NEMA electrical cabinet with operator controls. Simply connect to your power source.
- Optional Disconnect
- Operator signal light
- For easy maintenance a removable hydraulic and baling ram compartment cover
- Accessible oil filler cap and automotive type dip stick to check fluid condition and level.



RUGGED CONSTRUCTION

- Built-in quality as noted in heavy construction of bulkhead type compression door
- Heavy duty locking arm actuated by lever controlled hydraulic cylinder with anti-creep valve
- All designed to withstand operating pressures without distortion.

AVAILABLE ACCESSORIES

Disconnect Switch - Recommended - fused, mounted on pole.

Windowed Feed Chute Door with Control Circuit Interrupter - recommended as pictured.

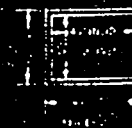
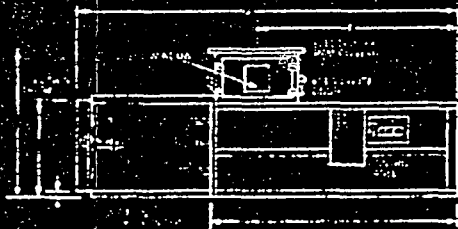
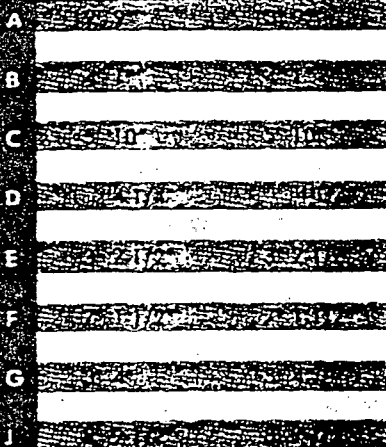
"Split" into two sections - All 200 Models can be supplied "split" - suitable for hard to reach work areas like sub-basements, narrow corridors and elevators. Unit is simply bolted together at installation site.

Weight Scale and Roller Conveyor System - Exact bale weight and simplified lift truck bale removal.

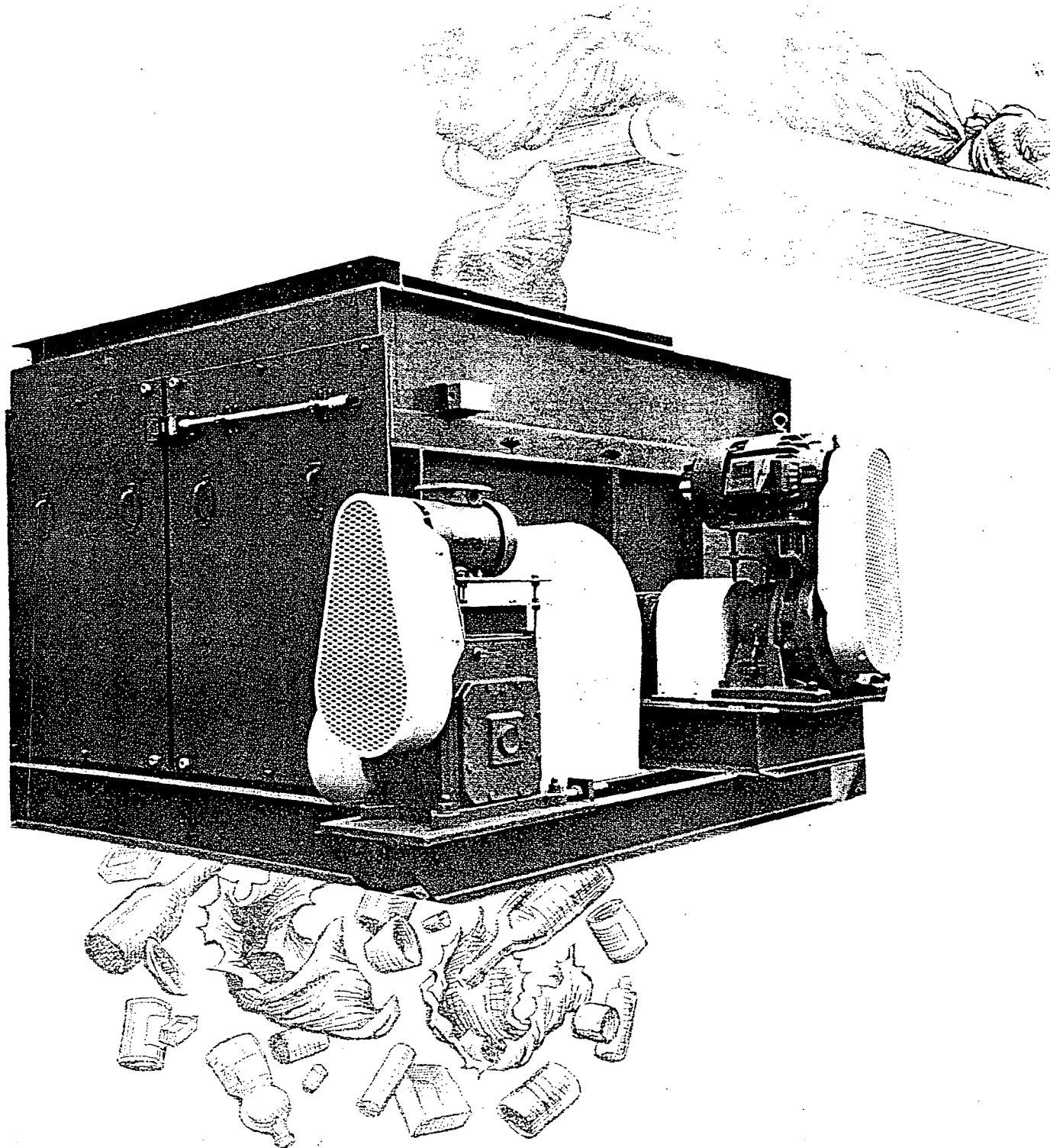
Regenerative Hydraulic Circuit - For up to 25 percent faster baling ram speed.

Risers - To increase bale discharge height to 13-1/2" above floor level.

DIMENSIONS (Feet-inches)



BHS BAG BREAKER



◆ COMMINGLED CONTAINERS

◆ HOUSEHOLD WASTE

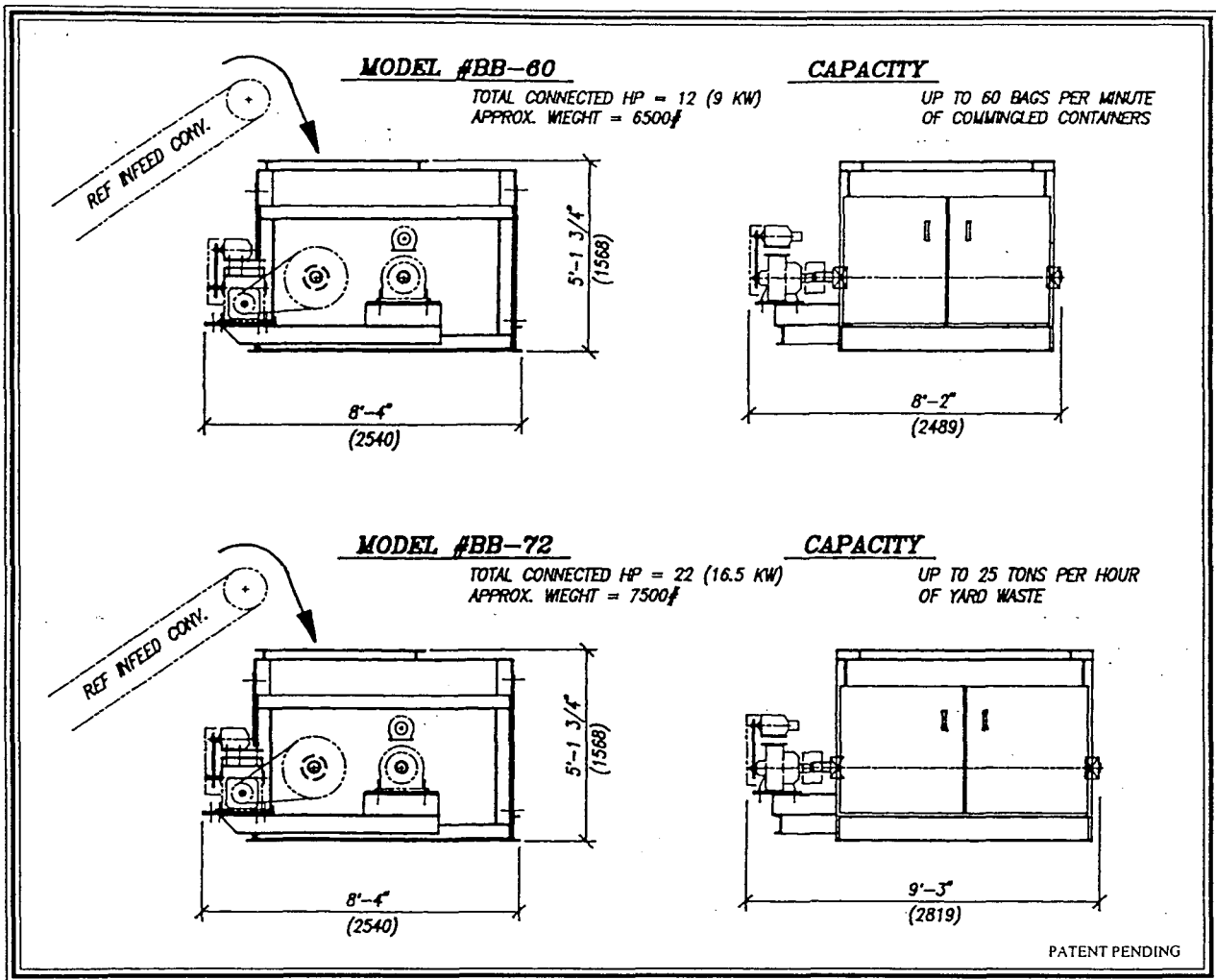
◆ OFFICE WASTE PAPER

◆ YARD WASTE



BULK HANDLING SYSTEMS, INC.

1040 Arrowsmith Eugene, OR 97402 (503) 485-0999



FEATURES

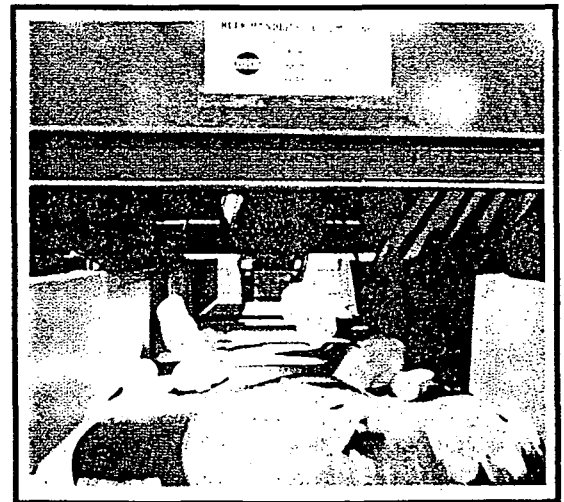
- ✓ Variable speed drive
- ✓ Heavy duty construction
- ✓ Anti-jam control logic
- ✓ Minimum glass breakage
- ✓ Bags are not shredded
- ✓ Multiple bag feed



MSW AND PAPER WASTE

HEAVY DUTY TO **LIGHT DUTY**

**THE B.H.S.
BAG BREAKER IS
LOW MAINTENANCE
WITH LOW
OPERATING COST**



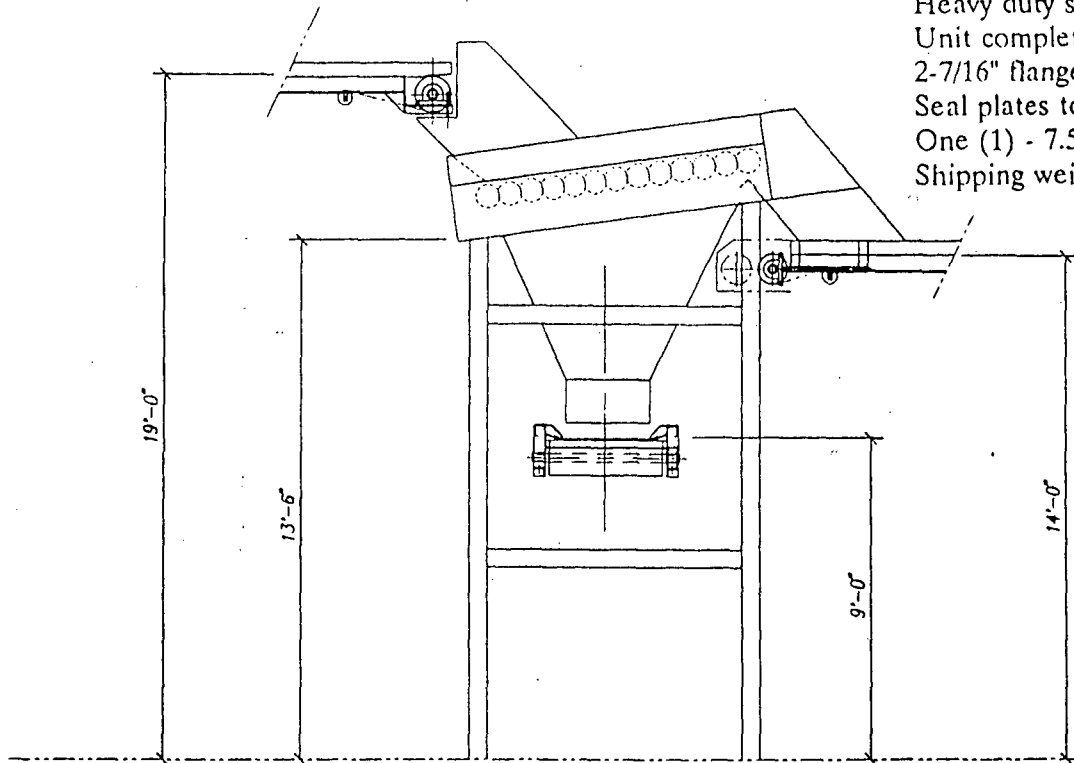
BLUE BAG RECYCLABLES



BULK HANDLING SYSTEMS, INC.
EUGENE, OREGON (503) 485-0999

BHS 48-13

Replaceable 1/2" thick abrasion resistant plate discs.
 Heavy duty steel shaft assembly.
 Unit completely assembled.
 2-7/16" flange type double row tapered roller bearings.
 Seal plates to keep material from leaking around shafts into bearing cavity.
 One (1) - 7.5 HP, 460/3/60, TEFC motor with V-belt drive to a Class II reducer.
 Shipping weight approximately 9,000 lbs.

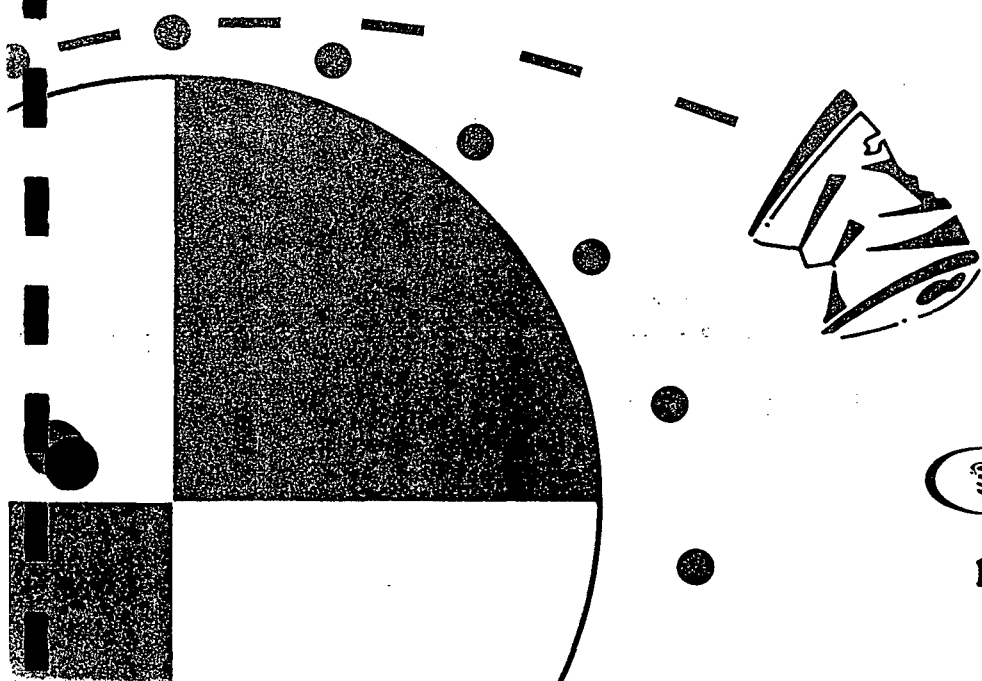
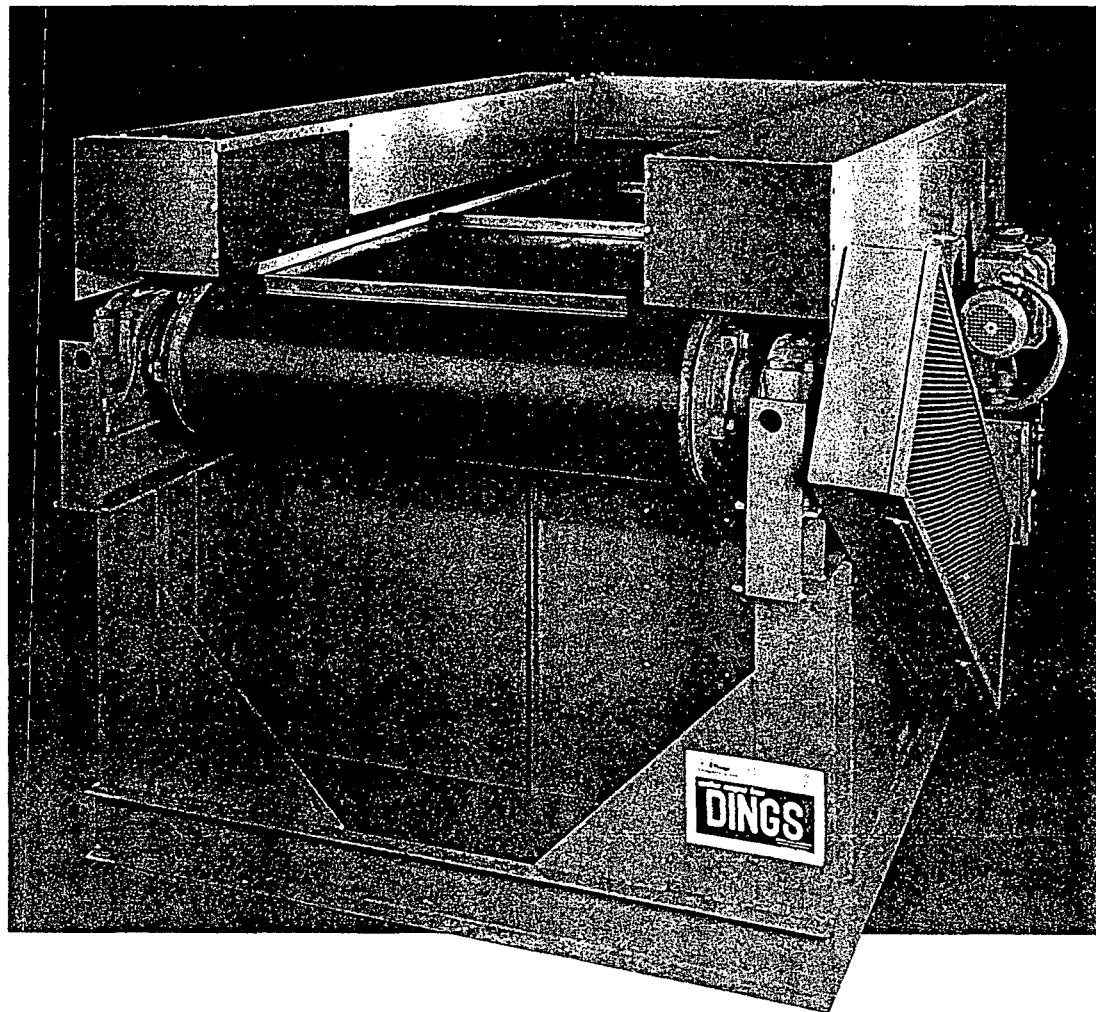


1	REFERENCE ONLY	BKC	7-24-95		
REV	DESCRIPTION	DRN	DATE	APD	DATE
BULK HANDLING SYSTEMS, INC. 1040 ARROWSMITH • EUGENE, OREGON 97402 PHONE (503) 465-0999			JOB NO.	P-4559	
FOR: R.R.T. LOCATION: SUMTER CO. FLORIDA			DWG. NO.	4559-2.0	
TITLE: M.S.W. SCREEN LAYOUT			SCALE: 1/4"=1'-0"		REV 1

CAD FILE: 4559\559-020

C U R R E N T S E P A R A T O R S

Deep field design sets new standards for nonferrous recovery



 **Dings**
CO.
magnetic group



EDDY CURRENT SEPARATOR

Dings offers distinct payback advantage

When it comes to reclaiming nonferrous metal, one system's design separates itself from the rest – the Dings eddy current separator. It's built for years of reliable service, backed by almost a century of experience in magnetic technology and manufacturing. Dings unique design provides maximum recovery, even in the most challenging environments. Its deep magnetic field can handle more tons and recover more metal, giving the Dings eddy current separator a distinct payback advantage.

Deep magnetic field increases recovery

The effectiveness of an eddy current separator to recover nonferrous metals is determined by more than a simple measurement of magnetic field strength. High gauss at the belt surface does not necessarily equate to a strong, efficient separator.

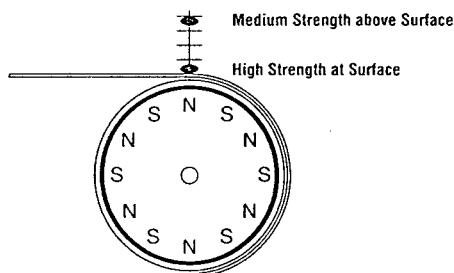
Almost all rare earth separators have a very high magnetic field strength on the surface, just above the magnetic rotor. In many models, however, the magnetic strength decreases so rapidly as you move above the surface that only very small burden depths can be processed without major losses in recovery efficiency.

In contrast, the Dings eddy current separator has high magnetic field strength at the surface and maintains

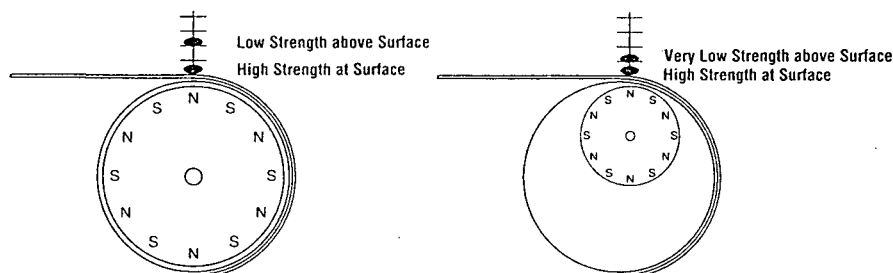
enough magnetism at a distance to process deep burdens. This deep magnetic field improves the rate of recovery, directly increasing your profits. The Dings model can separate nonferrous, such as aluminum, even during surges when the aluminum may be on top of clumps of the nonmetallic material. A separator with a shallow field will miss this aluminum, lowering the percent recovery of nonferrous.

Dings Co. has decades of experience designing magnetic circuits, and created a unique rotor assembly for this separator that produces this very powerful, deep field. *The result: more tons can be processed, more metals recovered, more profits made.*

Dings Deep Field Design



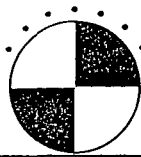
Conventional Designs



On-line separation improves efficiency

To earn a quick payback you need to run a separation system continuously, on-line with the rest of your equipment. Because the Dings deep field design can handle more volume, it's able to process on-line, even during peak feed rates.

Other eddy current systems with less capacity need to be batch-fed. Double-handling is costly and results in a much slower payback of the equipment investment. Or, in order to handle the surges, a wider, more expensive separator, or even two separators, may be required to process the same tonnage that Dings handles on-line with one separator.



EDDY CURRENT SEPARATOR

Rugged construction provides inexpensive, low maintenance separation for heavy industrial and commercial environments

Reliability and easy maintenance are just a few of the benefits of Dings trouble-free design. The Dings eddy current separator is a rugged, heavy-duty piece of machinery. Each component is engineered to withstand severe outdoor environments and the dirty, dusty surroundings found at many job sites. Steel I-beams provide solid support for the separator, heavy-duty drive packages are used, and oversized shafts and bearings provide greater reliability and longer service.

The permanent rare earth magnets used in the separator are well-suited to industrial environments. They offer high strength and long life; do not require power; and do not rely on sensitive electronics requiring clean, dry surroundings.

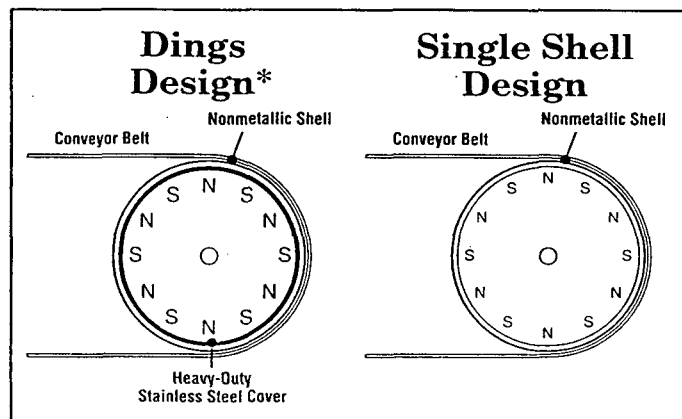
Many facilities, such as MRFs, operate up to 20 hours per day, moving hundreds of tons of materials. The Dings separator is designed for such heavy-duty continuous use.

With over 95 years of experience in metal fabrication, Dings Co. has built a solid reputation as a manufacturer of rugged separation equipment. Dings was a pioneer in designing products for severe-duty recycling applications, such as crushed concrete and C&D debris, and is continuing the tradition with a rugged, dependable design for its eddy current separator. Unlike some eddy current separator suppliers, it does not contract out any of its fabricating — all is done in-house at Dings' U.S. manufacturing facility.

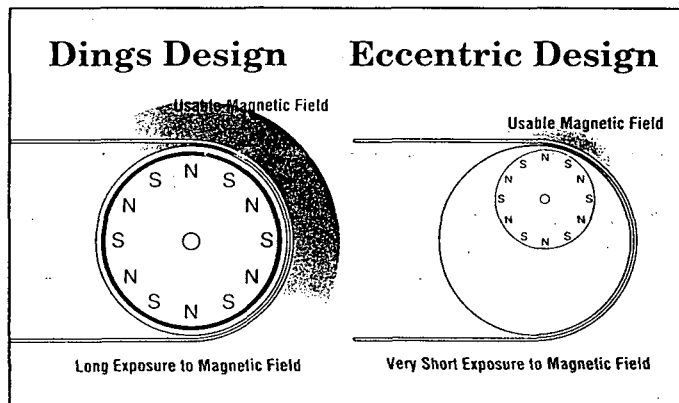
Solid stainless steel protects key components

The "heart" of the Dings eddy current separator, the magnetic rotor assembly, is protected by a heavy-duty cover of solid stainless steel*. Over this is a nonmetallic shell that supports the belt. Should a large piece of ferrous somehow get past the magnets further up the line, it could cause damage. On the Dings separator, this would be a simple repair since *only* the outer shell would be affected; the inner stainless steel cover protects the magnetic rotor from damage. Other separators which do not have this heavy-duty inner cover could incur costly damage to the rare earth magnetic assembly. And, because the Dings eddy current separator has a deep magnetic field, a protective double shell design can be used without sacrificing strength and separation power.

*Patent Pending



Larger magnetic field results in optimum recovery



The Dings full size magnetic rotor produces strong eddy currents and repelling forces for maximum separating power. Separators with an eccentric design have small diameter rotors with a narrow arc of exposure to the magnetic field. With the Dings full diameter rotor, the burden has a longer exposure to the magnetic field. This ensures maximum recovery, and is especially important for good separation of heavier pieces of nonferrous metals.

Other units with a small field must reduce their belt speed in some applications to increase the amount of time the material spends in the field. With the Dings design, that material can be processed at a faster rate of speed, increasing the productivity of your system.

C U e R d S E P A R

How an eddy current separator works

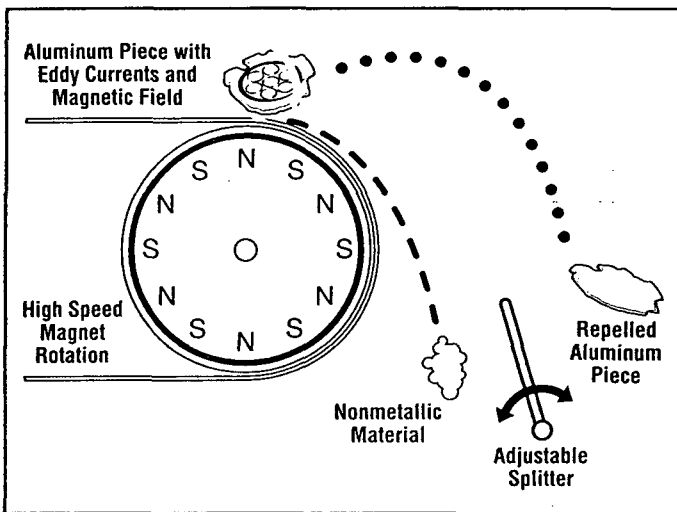
The key component of Dings eddy current separator is the magnetic rotor, which is a series of permanent rare earth magnets mounted on a support plate attached to a shaft. The magnetic rotor is surrounded by (but not attached to) a

nonmetallic shell which supports the conveyor belt. This allows it to spin at a much higher speed than the nonmetallic shell and belt.

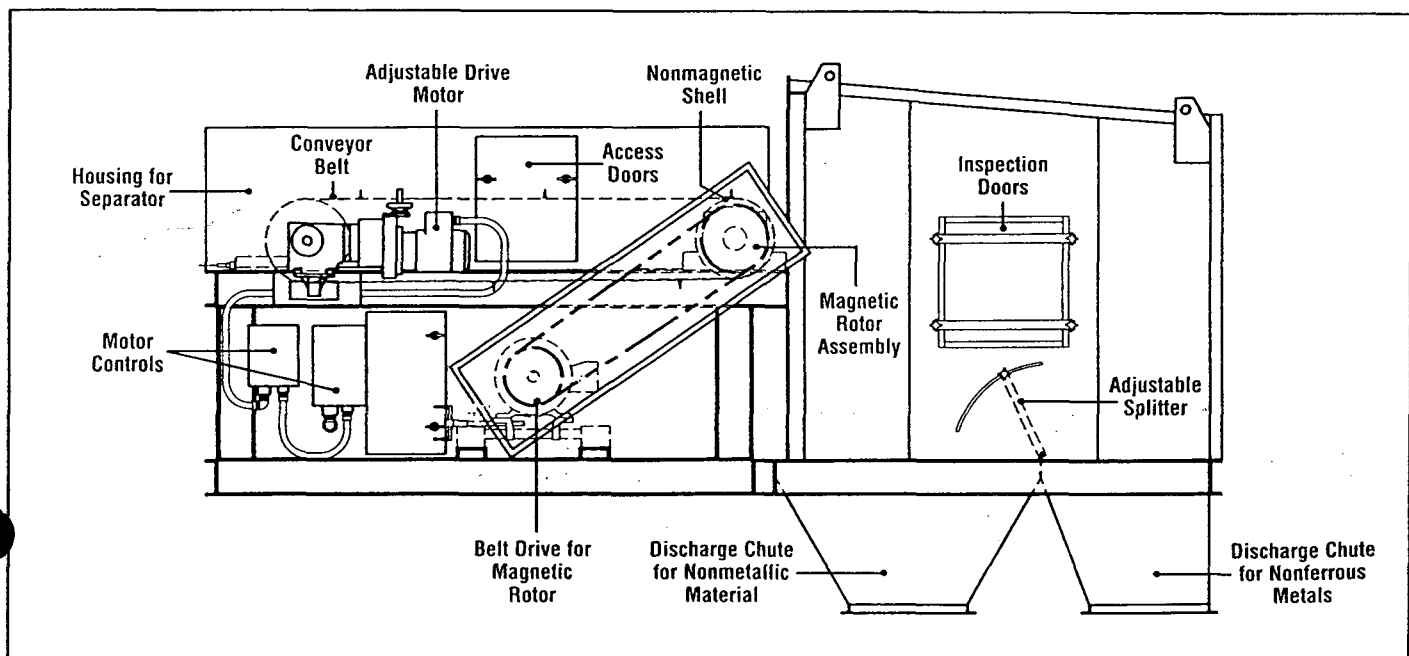
When a piece of nonferrous metal, such as aluminum, passes over the separator, the magnets inside the shell rotate past the aluminum at high speed. This forms eddy currents in the aluminum which in turn create a magnetic field around the piece of aluminum. The polarity of that magnetic field is the same as the rotating magnet, causing the aluminum to be repelled away from the magnet. This repulsion makes the trajectory of the aluminum greater than that of the non-metallics, allowing the two material streams to be separated with an adjustable splitter.

The eddy current system can be used to separate aluminum, die-cast metal, or copper from nonmetallic material. Nonferrous metals that are highly conductive and light weight are easiest to separate because they allow the formation of

high current and large force. Other nonferrous metals are recoverable, as well, depending upon their alloy content and particle size. We encourage you to provide us with a representative sample of the material you wish to separate. We'll test it on an eddy current separator at the Dings laboratory and give you a confidential analysis.



Components of the Dings



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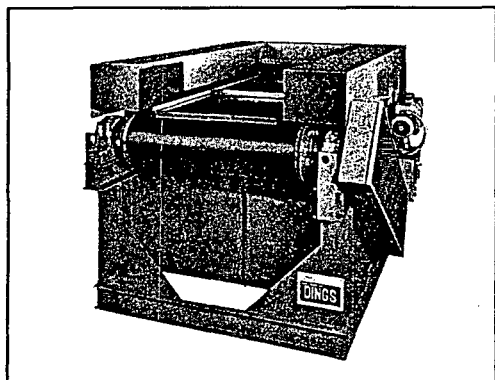
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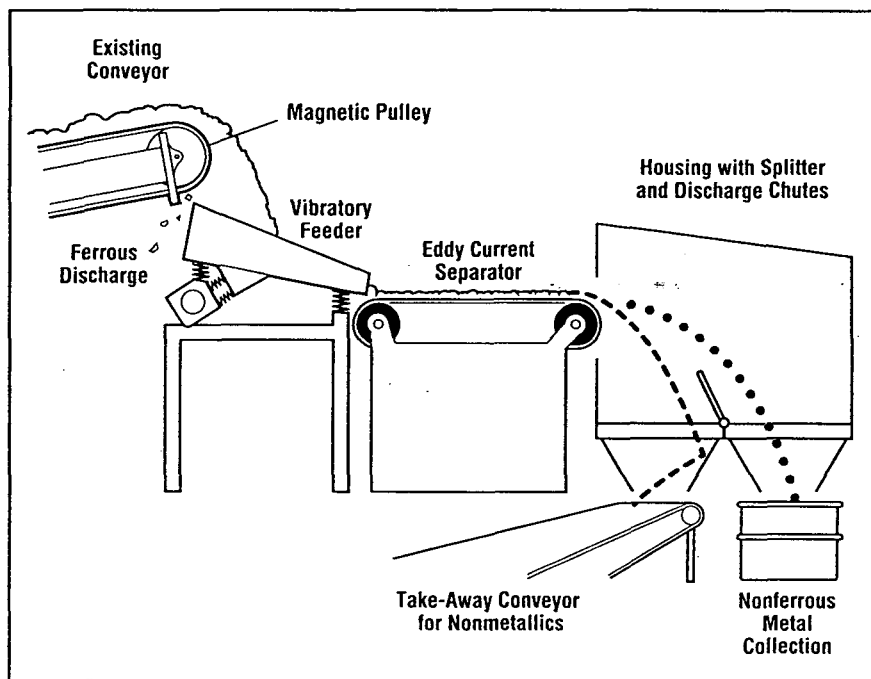
S

System design for nonferrous separation



In addition to the Dings eddy current separator, other system components include:

- Dings magnetic pulley to ensure maximum removal of ferrous metal
- Vibratory feeder to level out surges and provide a uniform feed to the eddy current separator
- Nonmetallic material holding bin or transfer conveyor
- Nonferrous metal holding bin or transfer conveyor



eddy current separator

Magnetic rotor assembly

- Permanent rare earth magnetic material is always charged; does not require power to generate magnetic field.
- Protected by solid stainless steel cover.
- Magnetic rotor assembly is balanced for long life.

Belt drive for magnetic rotor

- Turns rotor at optimum fixed speed.

External nonmagnetic shell

Conveyor belt, drive, and motor controls

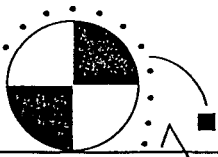
- Variable belt speed, adjustable to 600 fpm. Changing the belt speed affects the feed rate, burden depth, and changes the amount of time the material is in the magnetic field.
- Low horsepower requirement.
- Pulleys are crowned for reliable belt tracking. Lagging on the drive pulley.
- Belt widths available: 6" to 48".

Housing for separator

- Access doors on the enclosure open quickly for easy inspection and cleaning.

Discharge housing

- Discharge chute for nonmetallic material.
- Discharge chute for nonferrous metals.
- Adjustable splitter.
- Inspection doors on both sides.



EDDY CURRENT SEPARATOR

Put an eddy current separator to work for you

Generate income from the sale of the recovered nonferrous metal.

Save money by reducing transportation and landfill costs by eliminating the weight of the nonferrous metal from the material being hauled to the landfill.

Command a better price with upgraded nonferrous.

Improve the quality of your nonmetallic material by removing contaminating nonferrous metal.

Save on labor costs by reducing the man-hours required for manual sorting.

Separate

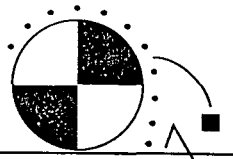
Reclaim or recover

Upgrade or concentrate

Purify

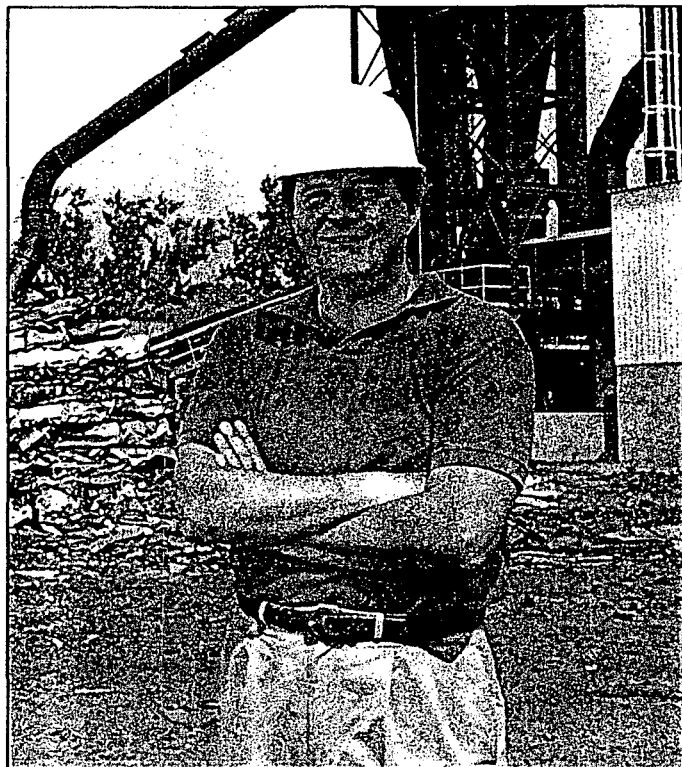
Protect

- The unique design of the Dings eddy current separator gives it a distinct payback advantage. Its deep field design increases the percent recovered and allows it to process more tons, even during peak rates. Both are key factors that increase the income from the separator and earn a faster payback.
- The Dings eddy current separator is ideal for recovering nonferrous metals from commingled recyclables, plastics, glass, material processed at composting or waste-to-energy facilities, automotive shredder residue, and other processed materials or minerals.
- The separator can be specified for a new processing line, or added to an existing system.
- Many MRFs are being retrofitted with automated sorting equipment such as eddy current separators to increase productivity, improve safety, and reduce liability claims.
- Depending on your application, we can size and select an eddy current model to your exact specifications. For selection, the type and density of your material, tons per hour processed (including average and peak rates) and other information about your application need to be considered. Various models are available which can be adapted to your specific processing system and equipment.



EDDY CURRENT SEPARATOR

"Our Dings separator is handling significantly more tons per shift"



Carter Strauss chose a Dings 36" eddy current separator for his auto shredding plant in Wheeling, W.Va.

"I had evaluated systems at other shredding operations, and decided that Dings is the most productive. Our Dings separator is handling significantly more tons per shift than other models."

"We feel their years of experience in the industry gives Dings a definite edge."

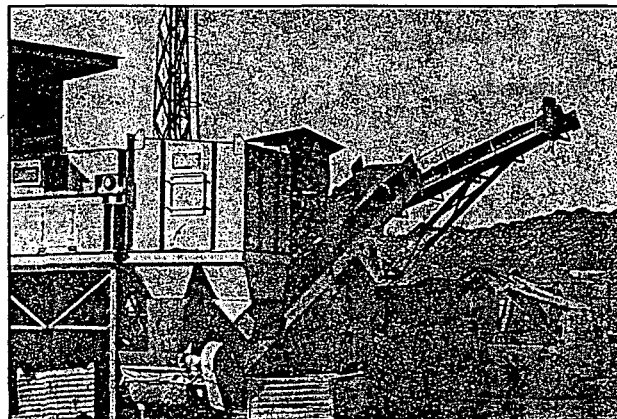
*Carter Strauss, President
Strauss Industries*

Eddy current separators from Dings – making the tough jobs look easy.

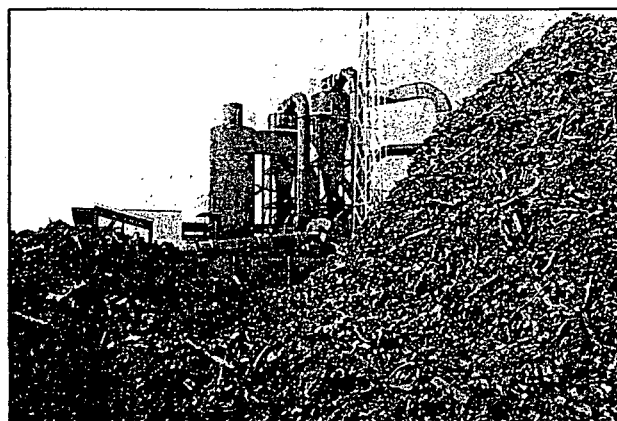
Strauss Industries operates a Dings eddy current separator on-line at their auto shredding plant in Wheeling, W. Va.

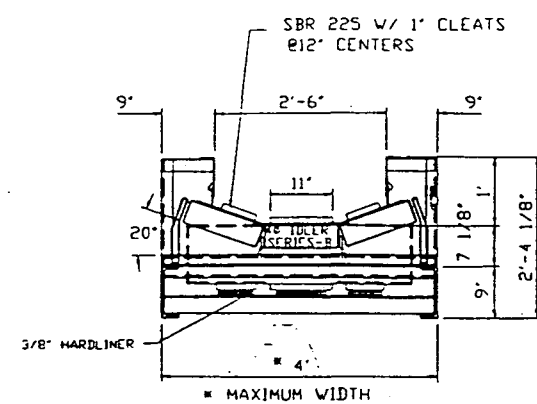
Reclaiming aluminum from fluff (automotive shredder residue) is one of the most difficult applications for an eddy current separator. The fluff is composed of fabrics, fibers, foam, and plastics which vary in size and can occasionally entrap the nonferrous metal. The aluminum pieces left in fluff are small, and small sizes are harder to repel and separate.

The Dings eddy current separator is a consistent performer, even in difficult applications. High recovery rates are maintained during challenging peak surges on the processing line. The Dings separator delivers superior performance with the most difficult materials, and under the toughest conditions.

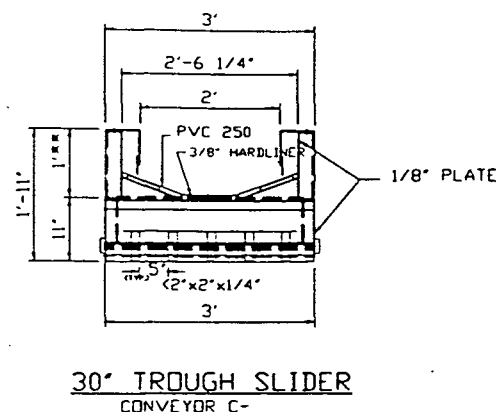


Nonferrous metals, which previously had been taken to a landfill with the fluff, are recovered at AutoMatic Recycling, Inc. with the Dings eddy current separator. Auto shredders can also use a Dings separator to upgrade or concentrate the heavier nonferrous produced from a trommel.

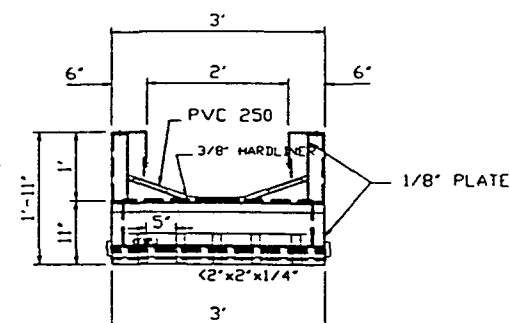




36" WIDE TROUGH IDLER
CONVEYOR C-



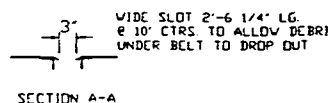
30" TROUGH SLIDER
CONVEYOR C-



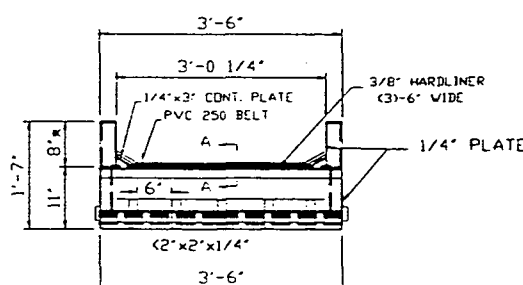
30" TROUGH SLIDER
CONVEYOR C

NOTE
PRODUCTION CANNOT START
UNTIL ONE SET OF DRAWINGS
ARE SIGNED AND RETURNED
TO HUSTLER CONVEYOR CO.

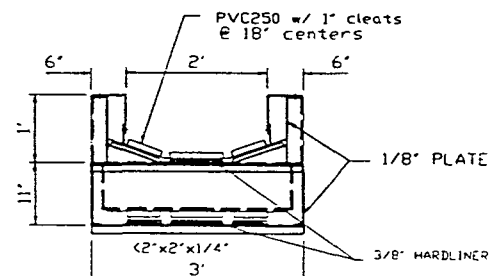
APPROVAL
BY _____
DATE _____
DATE EQUIPMENT IS REQUIRED
AT JOB SITE _____



SECTION A-A



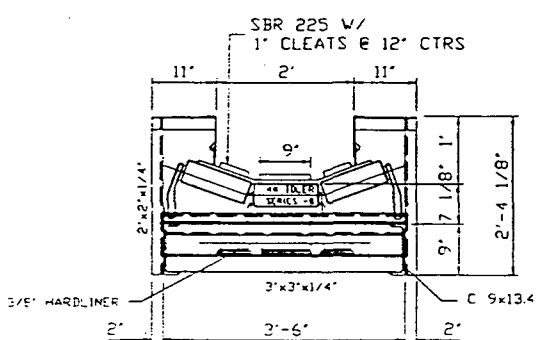
36" SLIDER SLIDER
CONVEYOR C-
VARIES



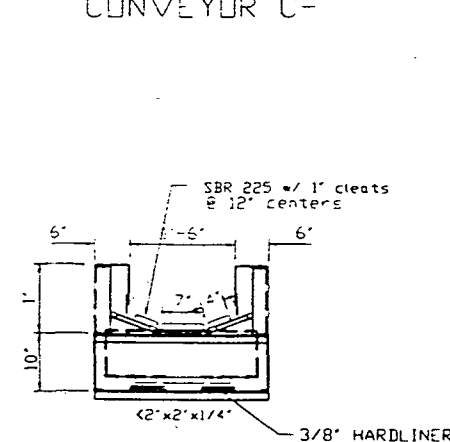
30" WIDE TROUGH SLIDER
CONVEYOR C-

PRELIMINARY

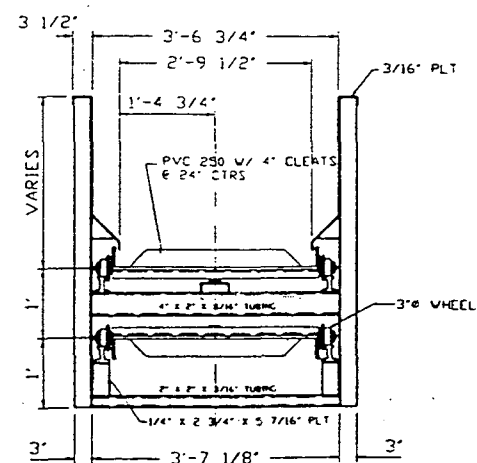
**FOR REVIEW ONLY.
DO NOT USE FOR
CONSTRUCTION**



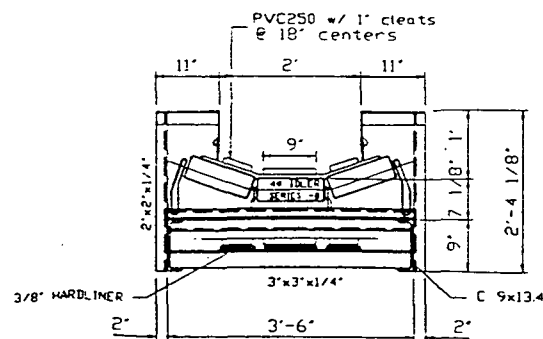
30" WIDE TROUGH IDLER
CONVEYOR C-



24" WIDE TROUGH SLIDER
CONVEYOR C-



36" WIDE ROLLER CHAIN BELT CROSS SECTION
CONVEYOR C-



30" WIDE TROUGH IDLER
CONVEYOR C-

1	3-2-95	CHANGES HARDLINER THICKNESS FROM 1/8" TO 3/8"	FILE	REV.
2	4-26-95	REVISED PER RRT COMMENTS DATED 4-21-95	FILE	REV.
3	4-19-95	REVISED PER RRT FAX DATED 4-20-95 RE CROSS SECTION RESOLUTION	FILE	REV.
4	4-18-95	REVISED PER CUSTOMER WAREHOUSE	FILE	REV.
REV.	DATE	DESCRIPTION	FILE	REV.
B.O.		DRG. NO. H95048-1A		FILE
<p>HUSTLER CONVEYOR COMPANY</p> <p>4000 PYLEN AVENUE ST. LOUIS, MO. 63140 TEL. 314-862-0000 FAX 314-862-0000</p>				
<p>THIS DRAWING IS THE PROPERTY OF HUSTLER CONVEYOR COMPANY. IT SHALL NOT BE COPIED OR DUPLICATED IN ANY MANNER AND SHALL NOT BE SUBMITTED TO ANY OUTSIDE PARTY FOR EXAMINATION WITHOUT OUR CONSENT. IT SHALL BE USED FOR REFERENCE TO WORK ON CONTRACT OR PROPOSAL SUBMITTED BY THIS COMPANY ONLY.</p>				
CROSS SECTION				
SCALE: 3/8"=1'-0"		DRAWN BY: JIMICAYAS		REVISED
DATE: 4-12-95		FOR: RRT DESIGN & CONSTRUCTION COMPANY MELVILLE, NY (SPRINGFIELD PROJECT)		

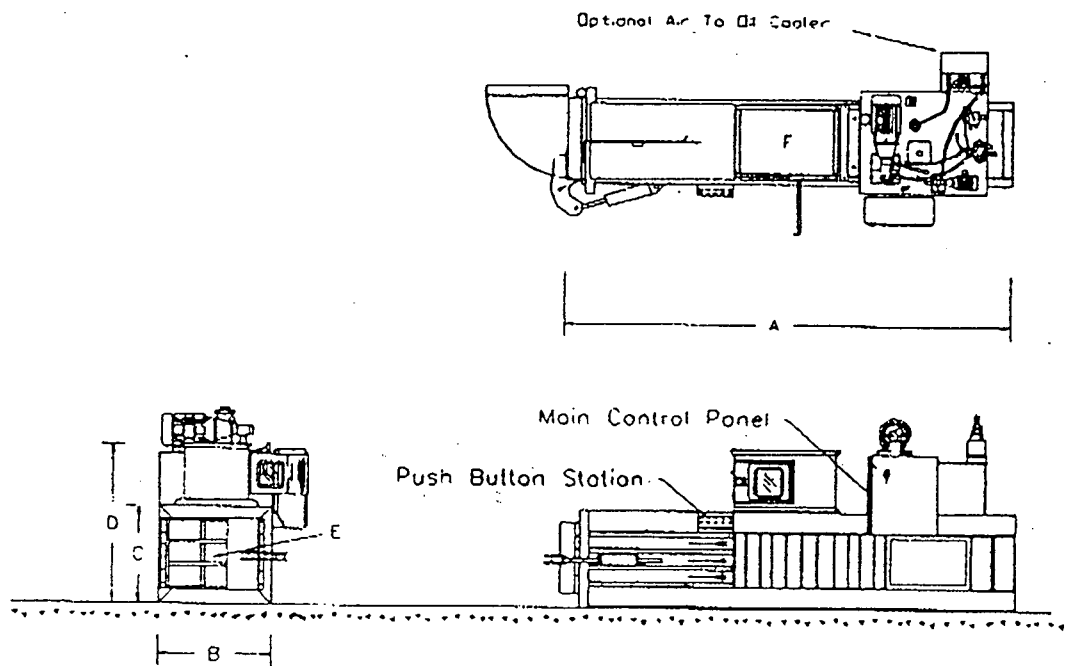


**Harris Waste
Management
Group, Inc.**

HAL-7SSR

Structural

A	LENGTH OVERALL	22 Ft. - 1 IN.
B	WIDTH FRAME	4 Ft. - 3 IN.
C	HEIGHT FRAME	3 Ft. - 6 IN.
D	HOPPER CHARGING HEIGHT	5 Ft. - 10 IN.
E	BALE SIZE	45 IN. x 30 IN. x 60 IN.
F	HOPPER OPENING	40 IN. x 50 IN.
	FRAME DESIGN	SHIP CHANNEL CONSTRUCTION
	SHEAR BLADE	T-1 ALLOY STEEL
	SHIPPING WEIGHT	22,000 LBS. (APPROXIMATE)



OPTIONS

REDUCED VOLTAGE STARTING
REMOTE POWER UNIT
BALE RUN OUT TABLE

HOPPER EXTENSION
UPPER PHOTO EYES
AIR-TO-OIL COOLER

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



**Harris Waste
Management
Group, Inc.**

**SELCO MODEL
HAL-7SSR
AUTOMATIC HORIZONTAL BALING PRESS
GENERAL SPECIFICATION NUMBER 725001
REVISED 2/7/94**

Performance

BALE SIZE	45 IN. WIDE x 30 IN. HIGH x 60 IN. LONG
BALE VOLUME	47 CUBIC FEET EXPANDED (APPROXIMATE)
CYCLE TIME	14 SECONDS (NO LOAD)

MATERIAL	BALE WEIGHT	DENSITY LBS / CU.FT. LOOSE/BALED	STANDARD 50 HP TONS / HR
OCC	UP TO 1300 LBS.	2 / 28	UP TO 4
CONDITIONED NEWS	UP TO 1500 LBS.	2 / 32	UP TO 5
PET	UP TO 850 LBS.	.75 / 18	UP TO 2
WHOLE ALUM. CANS	UP TO 850 LBS.	2 / 18	UP TO 3

*PERFORMANCE RATES, BALE WEIGHTS, AND BALE DENSITIES ARE SUBJECT TO MOISTURE CONTENT, MATERIAL PRE-BALE DENSITIES, FEED RATES, AND OTHER VARIABLES IN BALING

Hydraulics

MAIN PUMPS	1 - 106 GPM AT 800 PSI 1 - 31 GPM AT 2250 PSI
SYSTEM PRESSURE	2800 PSI
MAIN CYLINDER	10 IN. BORE, 74 IN. STROKE, 7 IN. ROD
OVERALL PLATEN FORCE	219,800 LBS.
RAM FACE PRESSURE	176 PSI
OIL RESERVOIR	386 GALLON CAPACITY
HYDRAULIC MANIFOLD	INTERNAL RELIEF VALVE REGENERATIVE SUBPLATE CIRCUIT

Electrical

MAIN MOTOR	50 HP, 460 VOLT, 3 PHASE (STANDARD)
ENCLOSURE	NEMA 12 RATED
CONTROLS	UL APPROVED, NEMA 12 RATED
MOTOR TYPE	TEFC, HIGH EFFICIENCY, ACROSS THE LINE STARTING IS STANDARD
CONTROLS	UL AND CSA LISTED, NEMA 12 RATED
PHOTOCELL	LED TYPE, 0-15 SECONDS ADJUSTABLE TIME DELAY



EDDY CURRENT SEPARATOR

Years of industry experience you can count on

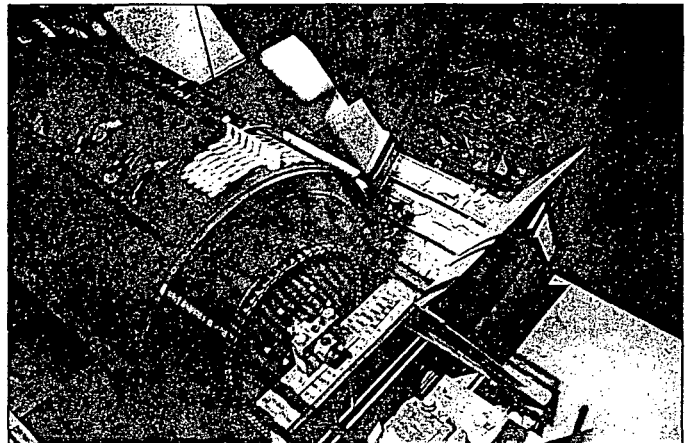
Dings Co. has been a leader in supplying magnetic separators to the recycling industry for decades. In 1973, Dings Co. patented the first solid waste magnetic separator. The introduction of this three-stage separator made it feasible to reclaim steel cans from solid waste. Previous to this design, the separated steel had too much entrapped waste to be saleable.

Dings Co. was also the first to develop an armor-clad Durabelt, which allowed self-cleaning separators to be used for severe-duty applications such as recycling crushed concrete, solid waste, shredded tires, and C&D waste.



Dings was the first to develop a magnet with an armor-clad belt for severe-duty use.

Dings Co. manufactures a full line of magnetic separators, including magnetic head pulleys for purifying material with low ferrous content; overhead magnets that suspend over conveyors; magnetic drums for recycling plastic, aluminum, or glass; severe-duty drums for auto recycling; solid waste systems; scrap-lifting magnets; and magnetic sweepers. Hundreds of auto recyclers, MRF, composting, C&D waste, RDF, mass burn, and other recycling facilities currently use Dings magnets.



The magnetic circuit in its severe-duty drums is patented by Dings, and produces a powerful, uniform field.

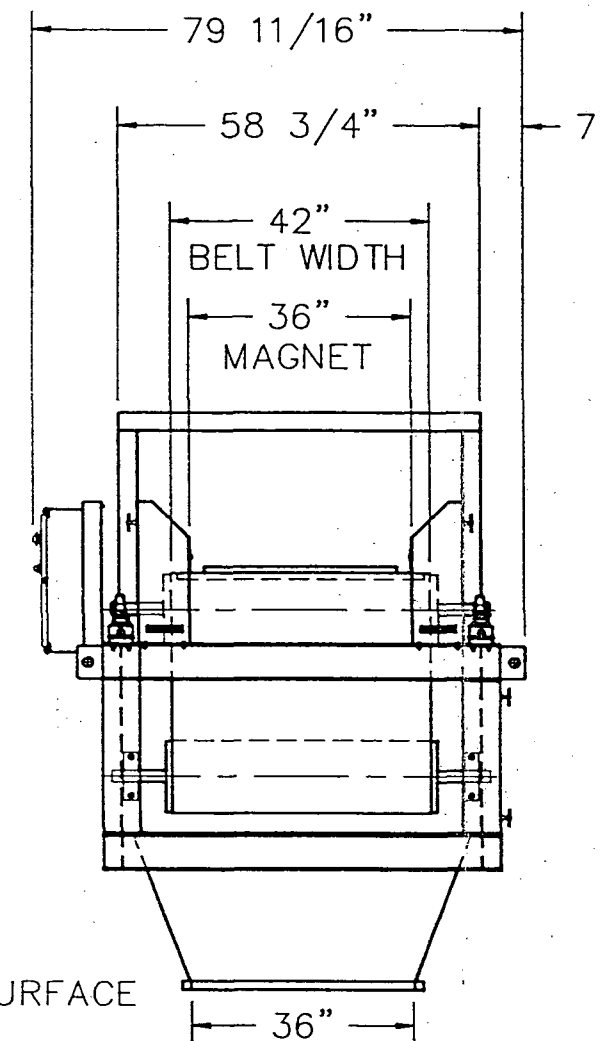
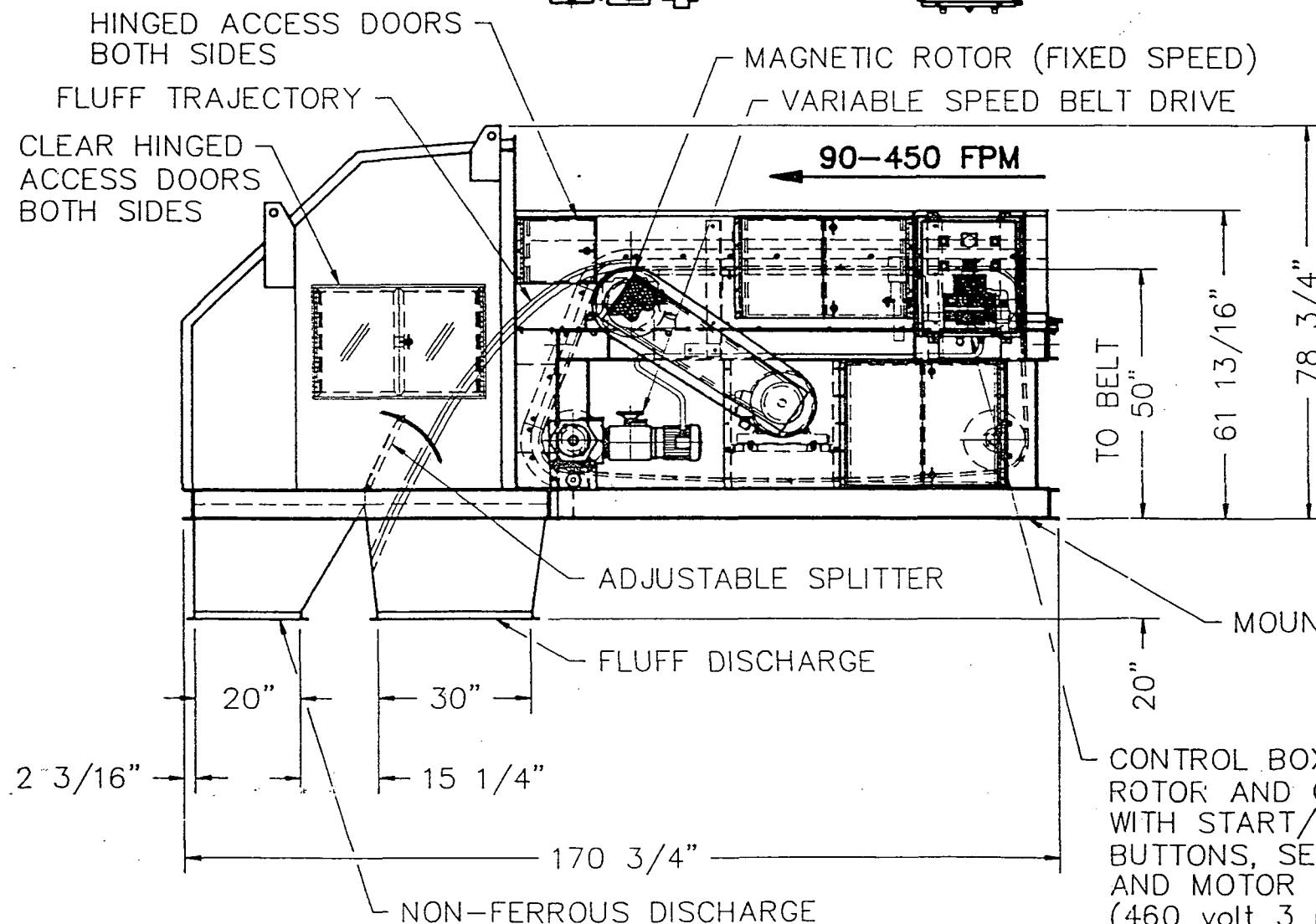
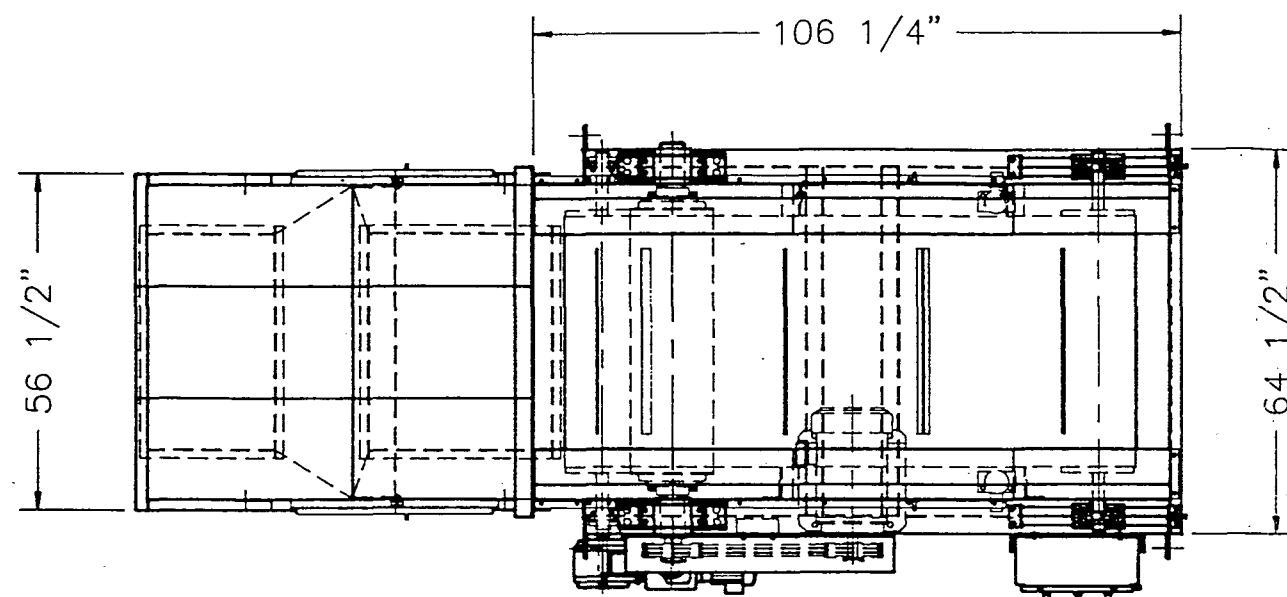
PROVIDING SEPARATION SOLUTIONS SINCE 1899

To help you with your application, Dings Co. has sales engineers located at our manufacturing facility as well as local representatives worldwide. They can select and size a Dings separator to your exact requirements, and provide job site follow-up to ensure your satisfaction.



Dings magnetic group

4740 W. Electric Ave., Milwaukee, WI 53219
(414) 672-7830 FAX (414) 672-5354



EST. WGT. 5200 LBS

THIS MATERIAL IS PROPERTY OF DINGS COMPANY. NO RIGHTS ARE GRANTED TO USE SUCH MATERIAL FOR ANY PURPOSE OTHER THAN (1) PRODUCT EVALUATION OR MAINTENANCE OR (2) THE FURNISHING OF SERVICES AND SUPPLIES TO THE DINGS COMPANY.

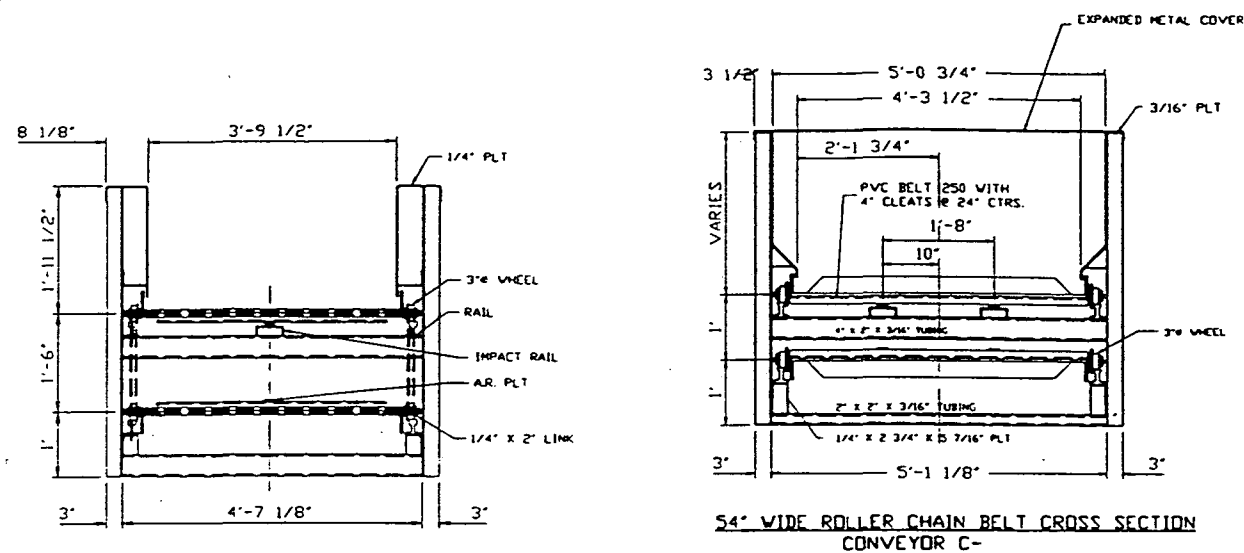
TITLE 13" DIA. x 36" WIDE RARE EARTH EDDY CURRENT
SEPARATOR GENERAL ASSEMBLY - MODEL 9436

<p>4740 WEST ELECTRIC AVE. MILWAUKEE, WISCONSIN 53219 U.S.A.</p>		DRAWING NO. B16832	REV. NO. B
DRN BY RRW	CHKD BY	SCALE 1/32"=1"	
DATE 3/8/94	REFER TO B17023 B16992 B17002 B17024 B16832 B17025 B16991		

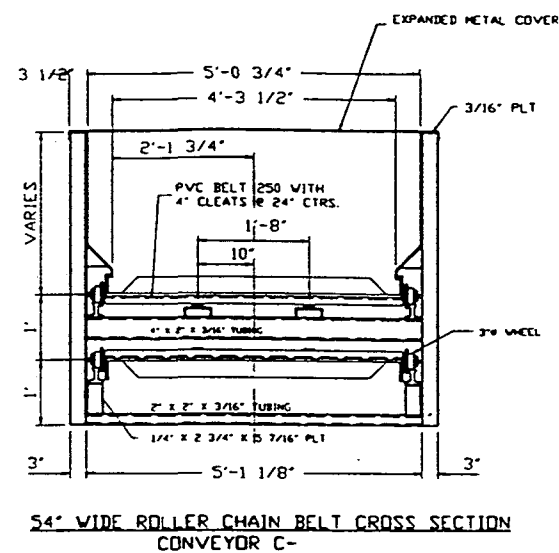
FOR REFERENCE ONLY

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED

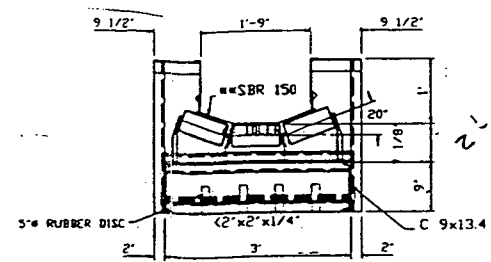
B		7/24/95	RRW	REDESIGNED
A		4/25/95	RRW	UPDATED
REV	CHG#	DATE	BY	REVISION



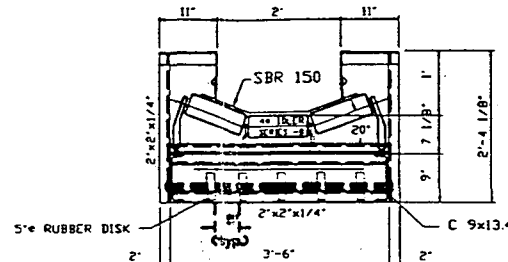
48" WIDE STEEL BELT CONVEYOR
CONVEYOR C-



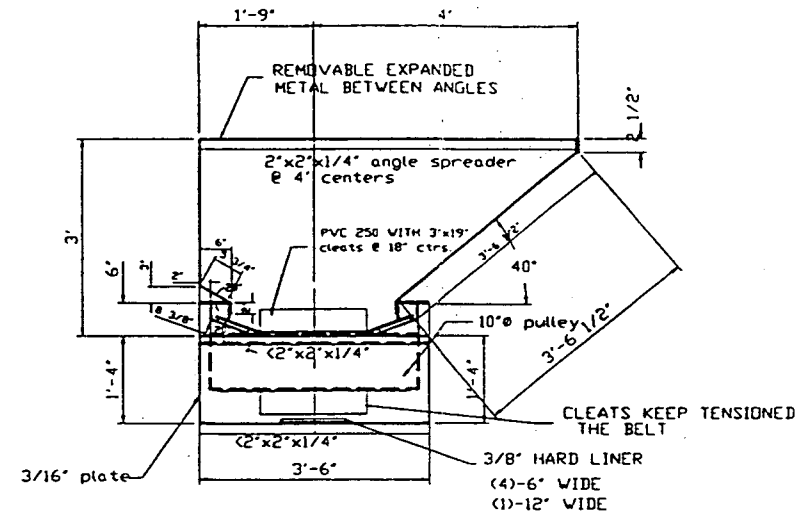
54" WIDE ROLLER CHAIN BELT CROSS SECTION
CONVEYOR C-



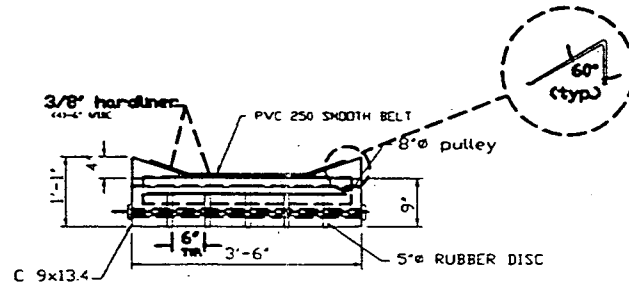
24" WIDE TROUGH IDLER
CONVEYOR C-



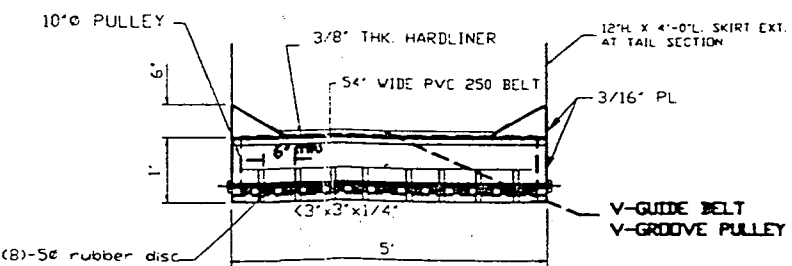
30" WIDE TROUGH IDLER
CONVEYOR C-



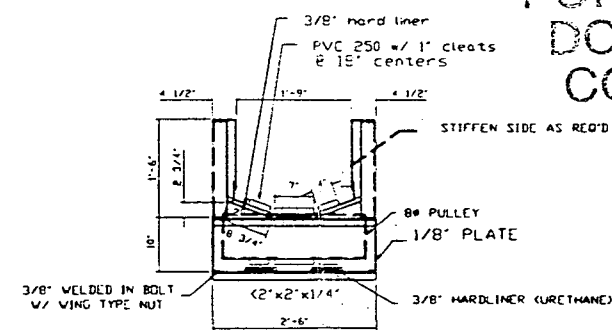
36" TROUGH SLIDER
CONVEYOR C-



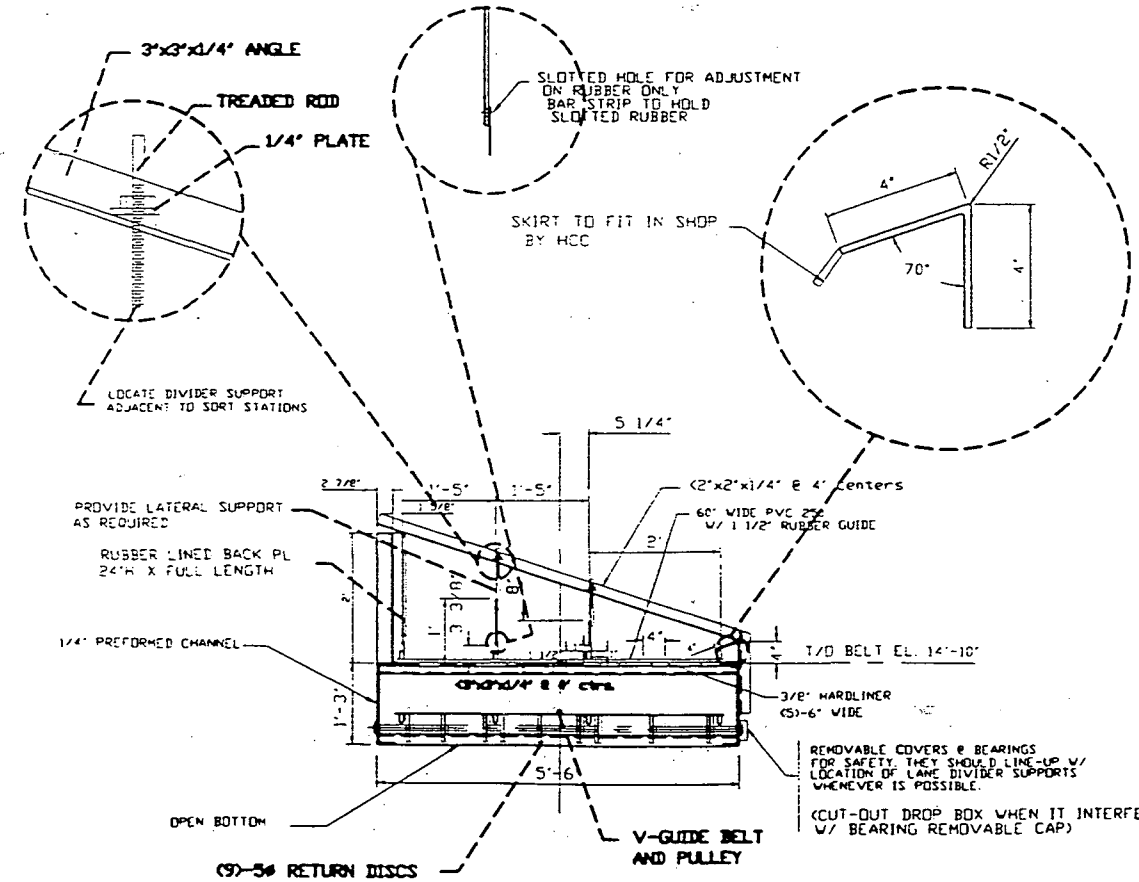
36" TROUGH SLIDER
CONVEYOR C-



54" WIDE TROUGH SLIDER CONVEYOR
CONVEYOR C-



24" WIDE TROUGH SLIDER
CONVEYOR C-



60" FLAT SLIDER PICKING STYLE CONVEYOR (TRIPLE CHAMBER)
(FOR CONVEYOR C-)

PRELIMINARY
FOR REVIEW ONLY.
DO NOT USE FOR
CONSTRUCTION

APPROVAL
BY _____
DATE _____
DATE EQUIPMENT IS REQUIRED
AT JOB SITE _____

NOTE
PRODUCTION CANNOT START
UNTIL ONE SET OF DRAWINGS
ARE SIGNED AND RETURNED TO
HUSTLER CONVEYOR CO.

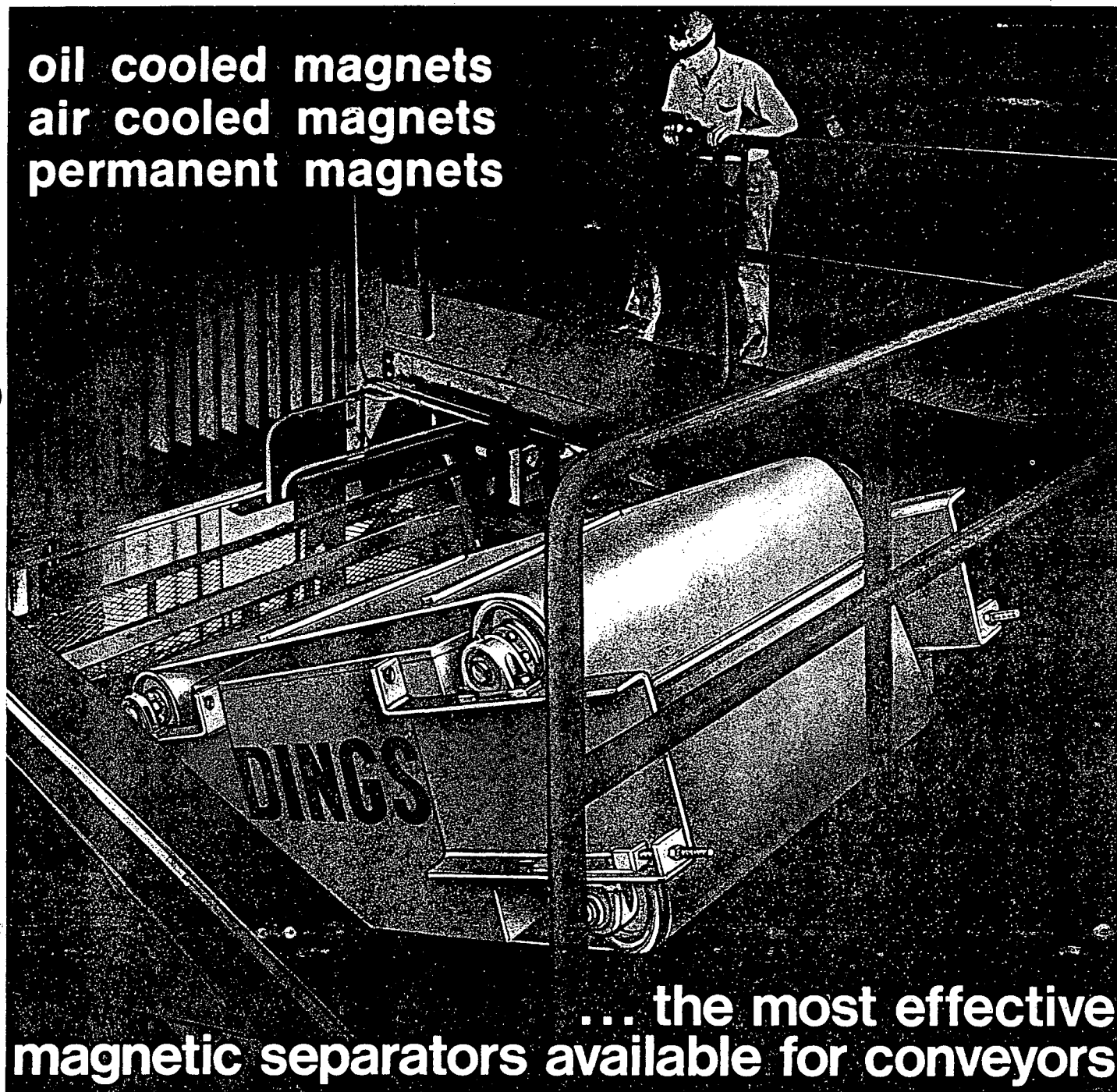
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Dings
CO.
magnetic group

OVERHEAD MAGNETS

**oil cooled magnets
air cooled magnets
permanent magnets**



**... the most effective
magnetic separators available for conveyors**

PROPOSAL**Dings**
CO.*A Venturedyne, Ltd. Company***DYNAMICS GROUP****magnetic group**

TO: RRT DESIGN & CONSTRUCTION
125 Baylis Road
Melville, NY 11747
Attn: Bill Meckert

PROPOSAL NO. CV950519DATE May 23, 1995BULLETIN NO. 3200C, 3200S, 2530S

DRAWING NO. _____

YOUR REFERENCE Sumter County**THANK YOU FOR YOUR INQUIRY. WE ARE PLEASED TO QUOTE AS FOLLOWS:**

APPLICATION: Removal of recoverable ferrous from a 48" conveyor carrying 10½TPH at 30-60 FPM. The magnet is to be mounted crossbelt a maximum of 18" above the conveyor.

DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
Model 55CB MRF	1		
8 KW Rectifier Nema 12	1		
1. Balanced magnetic circuit. See Bulletin 3200C. Coil wound with Class H anodized aluminum strap.			
2. Space inside magnet case for warm oil expansion, no external tank required.			
3. DC Volts 115			
4. 3 year warranty against magnet coil burnout, 1 year on balance.			
5. TEFC 1800 RPM motor, 1.25 SF-NEMA design B.			
6. Shaft mounted speed reducer with V-belt drive, single speed.			
7. Sealmaster NP self-aligning bearings.			
8. Self-cleaning, non-endless, multi-ply rubber belt with 1" x 3" vulcanized rubber cleats. 250 FPM belt speed.			
9. Stephens-Adamson crowned curved pulleys with squeeze-lock hubs (for positive tracking).			
10. All unprotected surfaces are spray painted with a coat of Green Synthetic Enamel, Hentzon Chemical Coatings Co. No. 2990.			
11. Stainless steel infeed deflector.			
12. 7/8" X 12" turnbuckles			

ESTIMATED SHIPPING SCHEDULE: 7 to 9 weeks ARO

TERMS OF SALE: Net cash 30 days to prior approved credit.
FOB Milwaukee, WI. Freight collect. Sales, use, occupational and excise taxes are not included in the prices shown. Any order is subject to acceptance by the seller at the factory in Milwaukee. Standard terms and conditions shown on the back apply.

BY



RECTIFIERS SPECIFICATIONS AND DATA

DESCRIPTION

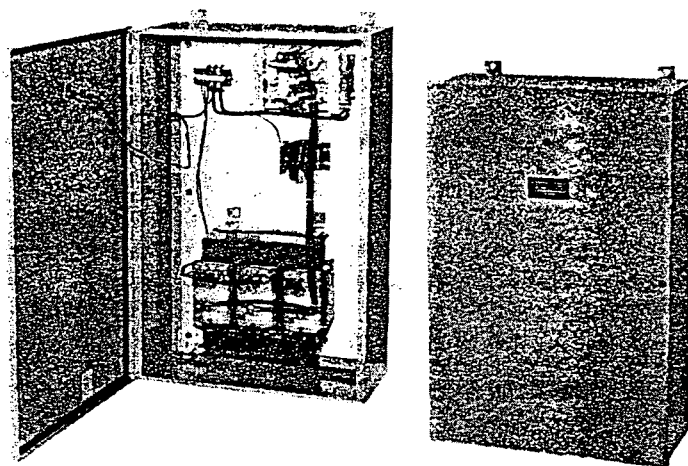
A Dings rectifier is auxiliary equipment that supplies electric power to electromagnetic separators. It converts the alternating current from a local power source to the direct current needed by such separators.

The Dings rectifier consists of a hinged door cabinet, and an internal assembly of electrical components. Ratings and sizes of components in this solid state silicon diode design determine output in volts and watts.

Rectifiers are available in a range of wattages to handle the power requirement of any size electromagnetic separator. A rectifier cabinet can be selected in a particular NEMA (National Electrical Manufacturers Association) enclosure according to environmental conditions at the installation.

SPECIFICATIONS (All Sizes & Models)

- 1) AC input 480 volts, 3ph, 60Hz.
- 2) DC output 115 volts or 230 volts.
- 3) Output wattage to match separator requirement 1 to 50 KW.
- 4) Three phase solid state rectifier bridge.
- 5) Dry type insulating transformers, delta wye circuit.
- 6) Operation in excess of 95.5% efficiency.
- 7) Power factor approaches one (unity).
- 8) No maintenance solid state design.
- 9) Convection cooling is standard.
- 10) Ventilated or nonventilated enclosures depending on NEMA selection.
- 11) All units conservatively rated for cool continuous operation.
- 12) Excellent voltage regulation — within 3.5% from no load to full load.
- 13) Six NEMA enclosures available — 1, 3, 3R, 4, 9 & 12.
- 14) Cabinet housing 16 ga. steel or thicker depending on NEMA enclosure.
- 15) Floor mounted design for NEMA 1.
- 16) Wall mounted design for NEMA 4, 9 & 12. Consult factory for other NEMA enclosures.
- 17) Rust inhibiting primer.
- 18) Temperature rated for up to 40°C (104°F) ambient.
- 19) Red pilot light indicates switched on condition — NEMA 1, 3, 3R, & 12 only. Consult factory for NEMA 4 & 9.
- 20) Excellent overload capacity for short infrequent periods.
- 21) Hinged front door for easy access (NEMA 1 is fully removable).
- 22) For operation up to 5,000 feet above sea level without derating.
- 23) For operation above 5,000 feet, or where ambient temperature exceeds 40°C (104°F), rectifier should be oversized or derated — because output wattage is diminished. Consult factory.
- 24) Options:
 - a) Special AC input voltage — other than 480V.
 - b) Special DC output voltage — other than 115V or 230V.
 - c) Operation on 50Hz.
 - d) Manual starter with overload heaters, 1 through 9KW only — externally housed.
 - e) Magnetic starter with overload heaters — internally housed, available for any KW. Standard on 10 KW and up.
 - f) AC and DC voltmeter.
 - g) AC and DC ammeter.
 - h) AC and DC line fuses (three for AC, two for DC).
 - i) AC and DC circuit breaker.
 - j) AC and DC control relay (four poles maximum)
 - k) AC and DC fused disconnect.
 - l) AC and DC non-fused disconnect.
 - m) Undercurrent relay (one pole N.O. or NC.).
 - n) Auxiliary contacts.
 - o) Thermostat.
 - p) Extra shunt.
 - q) Tropicalized cabinet.
 - r) Internal space heaters.
 - s) Epoxy paint.
 - t) Leg kit for floor mounting (standard on NEMA 1).
 - u) Extra start/stop contacts.
 - v) Wiring for remote start/stop.
 - w) Compensating taps on transformer.
 - x) Extra pilot light.
 - y) Automatic thermal cutout for customer's alarm circuit.
 - z) Sliding link terminal barrier.



CONTINUED ON REVERSE SIDE

DESCRIPTIONS OF NEMA ENCLOSURES

The descriptions below are brief. Refer to the National Electrical Code and the various NFPA and NSI Standards referenced by the NEC to make a proper selection of enclosure.

- NEMA 1** General Purpose, Indoor Only. Ventilated totally enclosed cabinet. Openings shall prevent entrance of a rod 0.500 inches in diameter. Rust resistant coating.
- NEMA 3** Dust Tight, Rain Tight and Sleet Resistant, Outdoor. Must protect enclosed equipment against wind-blown dust and water — not sleet (ice) proof. Mounting means external to equipment cavity. Rust resistant coating.
- NEMA 3R** Rainproof and Sleet (Ice) Resistant, Outdoor. Must protect enclosed equipment against falling rain. Not dust, snow or sleet (ice) proof. Provisions for drainage. Rust resistant coating.
- NEMA 4** Water Tight and Dust Tight, Indoor/Outdoor. Non-ventilated enclosure must protect enclosed equipment against splashing water, seepage of water, falling or hose directed water, and severe condensation. Must be sleet resistant but not sleet proof. Mounting means external to equipment cavity. Rust resistant coating.

NEMA 9 Hazardous Locations, Indoor. Nonventilated enclosures must prevent the ingress of explosive amounts of hazardous materials. If gaskets are used they shall be mechanically attached and non-combustible, nondeteriorating, vermin proof material. Rust resistant coating. For Class II Groups E, F & G locations.

NEMA 12 Industrial Use, Dust Tight, Drip Tight. Indoor. Enclosures must protect enclosed equipment against flying fibers, dust and dirt, light splashing, seepage, dripping and external condensation of noncorrosive liquids. There are no holes through enclosure and no conduit knockouts or conduit openings. Wall mounting must have external mounting means. Floor mounting must have a closed bottom and provisions for mounting. Rust resistant coating.

RECTIFIER WEIGHTS

RECTIFIER KW (115 or 230 Volt DC)	RECTIFIER WEIGHT IN LBS.					
	NEMA 1	NEMA 3	NEMA 3R	NEMA 4	NEMA 9	NEMA 12
1	77	150	139	116	250	125
2	88	164	150	130	301	139
2.5	88	179	164	145	316	154
3	102	179	164	145	316	154
4	117	253	179	256	438	228
5	117	256	179	259	441	231
6.5	169	276	253	279	461	251
8	172	342	256	305	558	313
9	192	344	276	306	559	314
10	196	342	274	305	551	313
12.5	217	505	340	387	700	428
15	220	556	342	438	*	479
17.5	313	557	489	439	*	480
20	313	655	489	597	*	593
25	367	657	539	600	*	596

Available on Request:

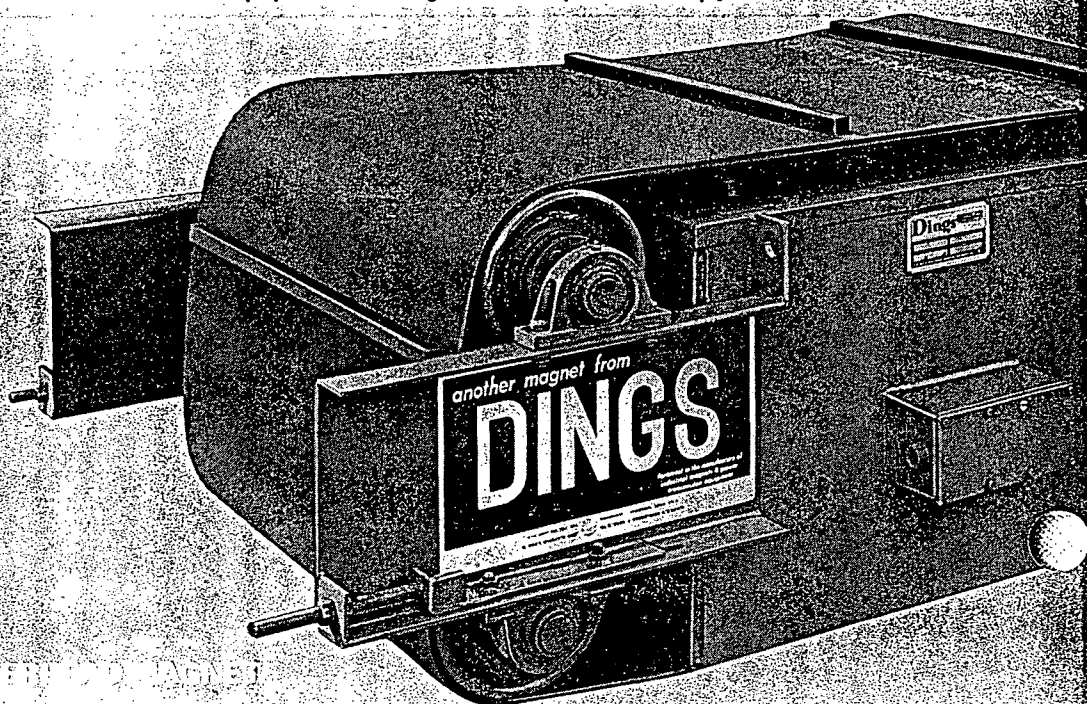
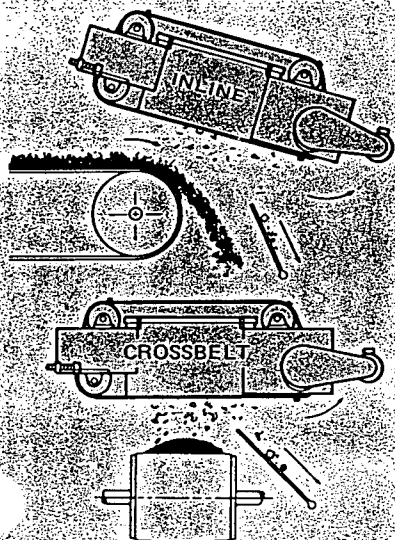
*Consult Factory

Cabinet outline dimensions drawing, wiring diagram with parts list, and an instruction sheet.

Overhead Magnets are powerful suspended type magnetic separators. They remove damaging tramp iron and ferrous impurities from materials conveyed in bulk form. Dings builds Overhead Magnets that match any conveying condition. No conveyor is too wide or too narrow. No conveyor travels too fast or too slow. No conveyor load is too deep.

Overhead Magnets cut costly downtime in processing plants. They protect processing machinery by removing rods, bolts, nuts, tools, parts and all kinds of damaging iron and steel objects from materials conveyed to machinery. Unwanted ferrous metal of any conceivable shape, buried anywhere inside a conveyed burden, is eliminated.

Overhead Magnets separate metal present in large amounts or metal encountered only occasionally. Separation is continuous and automatic with no interruption of normal conveying. Many models are powered by electricity. Other models are nonelectric. Some models are self cleaning. Others aren't. This bulletin describes all models. The availability of hundreds of model size combinations from Dings saves investment dollars. This saving is possible because the strength of magnetic field and the size of magnetic field can be matched to application conditions. There's no need to pay for more magnet than required for any job.



SELF-CLEANING ELECTRIC OVERHEAD MAGNET

CLEANS ITSELF AUTOMATICALLY
CLEANS ITSELF COMPLETELY
RUNS QUIETLY
EXTRA THICK BELT 3 PLY
CLEATS ARE VULCANIZED
DISCHARGES CLEAR OF CONVEYOR

There's never a chance for excessive buildup of iron - too much iron on the face of a magnet shorting out magnetism. Rubber cleats vulcanized to the belt ensure complete sweeping of all metal. Vulcanizing prevents attracted metal from lodging under cleats as is the case with other designs with cleats bolted to a belt. Permanent magnet extensions are available to extend trajectory of discharged metal.

FOUR PULLEYS CONSERVE SPACE
PULLEYS ARE CROWNED
SELF ALIGNING BEARINGS
INTERCHANGEABLE BEARINGS
GREASEABLE BEARINGS

Besides that, all bearings are interchangeable. All pulleys are crowned for reliable belt tracking. Bearings are of course greaseable and self-aligning.

CONTINUOUS DUTY
OBSOLETE OIL TANK DESIGNS
NO PLUMBING
MOUNTS AT ANY ANGLE
SUPPORT ABOVE OR BELOW

Conventional designs need external control of oil expansion and moisture. There are no external oil tanks or plumbing on the Dings design. They aren't needed. That means the Dings design can be mounted at any angle - even upside down. Steel lugs are provided for suspended mounting or underneath mounting.

WOUND WITH ANODIZED ALUMINUM
INSULATION BETTER THAN CLASS H
CONVENIENT TERMINAL BOX
THREE YEAR COIL GUARANTEE

Insulation quality in the coil far exceeds class H. The coil is virtually burnoutproof. A 3 year guarantee applies against coil burnout. Coil leads are connected to leakproof terminals inside an easy to get at gasketed terminal box.

A thick heavy duty rubber belt moves continuously and quietly around the magnet. This belt intercepts attracted metal and sweeps it off the magnet.

A 4-pulley design is used on nearly all models. This allows a saving in space and weight compared to a 2 pulley design.

All models are built for continuous magnet energizing and for continuous belt cleaning. Energizing is by direct current. Dings can supply rectifiers. Conventional designs need external control of oil expansion and moisture.

All models are built with aluminum strip (not wire) and not plain aluminum but anodized aluminum.

BALANCED MAGNETIC CIRCUIT The magnetic circuit is balanced by having the right combination of strip winding, core, backplate and poles. See page 4 for more details.

CHOICE OF TYPES There are 2 types of Self Cleaners - an Inline and a Crossbelt. The Inline installs over a conveyor head pulley with its cleaning belt running parallel to the trajectory of material falling off the conveyor head pulley. The Crossbelt installs over any straight section of a conveyor with its cleaning belt running at a right angle to the conveyor travel direction. There's no difference in appearance between an Inline Self Cleaner and a Crossbelt Self Cleaner. But, an Inline installation is preferred. The Inline installation is always a lower cost installation. A cost saving is the result of easier separating conditions at the conveyor head pulley. Material discharging from a head pulley opens up during its trajectory through air. Material is no longer packed as tightly around buried metal. Consequently, there's less resistance to magnetic pull. Less magnetic force is needed to pull the metal free from the material. The Inline doesn't need extra magnetic force to perform the additional function required of a Crossbelt - the momentary stopping of attracted iron and then the changing of its travel direction. An Inline is strongly recommended over a Crossbelt whenever possible.

NO SPARES NEEDED A common purchasing specification is a list of spare parts needed for the first year of operation. There are no spare parts required for the first operating year. Actually, all Overhead Magnets are built to operate for extended time periods with no maintenance beyond lubrication.

DUST TIGHT HOUSINGS Most installations don't require dust tight housings, but when such enclosures are needed, they can be obtained from Dings.

MOTOR & DRIVE INCLUDED Every Self Cleaner is shipped complete with motor and drive. They're oil filled, ready to mount and ready to operate. No conveyor modification is required. An illustrated instruction bulletin is packed with every shipment.

will match your application

TYPICAL USERS

Overhead Magnets are most often suspended over belt conveyors or vibratory conveyors. They're also used in screen and chute installations. Power plants use them to keep tramp iron out of coal pulverizers. Miners of coal, copper, lead, zinc and bauxite use them to protect crushers. Crushers are also protected in quarries and cement operations. Food processors use them to maintain product purity. The pulp and paper industry separates iron from wood chips. Foundries remove chills, wire, sprues, gagers, etc. from sand. Grain elevators and wood-working plants guard against sparks. Scrap yards reclaim metal for recycling.

There's one particular model in an exact size for any application where ferrous metals must be separated from nonferrous materials.

AIR-COOLED ELECTRO OVERHEAD MAGNETS

The normal ambient conditions in most applications are suitable for continuous operation of oil cooled magnets. If conditions are extreme, and oil temperature is a matter of concern, an Air-Cooled Electro Overhead Magnet can be installed. The external appearance and the performance of Dings Air-Cooled Electro Overhead Magnets are the same as the appearance and performance of the oil-cooled magnets.

STATIONARY ELECTRO OVERHEAD MAGNET

ECONOMY SAVES SPACE LESS WEIGHT Stationary Electro Overhead Magnets are identical to the magnets inside Self Cleaner models. There's no need to invest in a self cleaning system for removal of occasional tramp iron or small quantities of contaminants. Stationary models are cleaned simply by shutting off d-c power. A trolley or small crane can be used to move the magnet to a discharge bin.

CABLE SUSPENSION SUPPLIED A 3 point cable sling suspension system with bull ring is included. Each of the 3 suspension members is independent of the others. One member includes a turnbuckle for quick and easy one-time adjustment of mounting angle. Adjustment can be made while the magnet is hanging in position. There's no measuring, shortening, lengthening or cutting of cable.

NO MAINTENANCE Stationary models have no moving parts. All steel sides plus the stainless steel bottom are welded together with continuous welds. There's nothing to lubricate, tighten or replace.

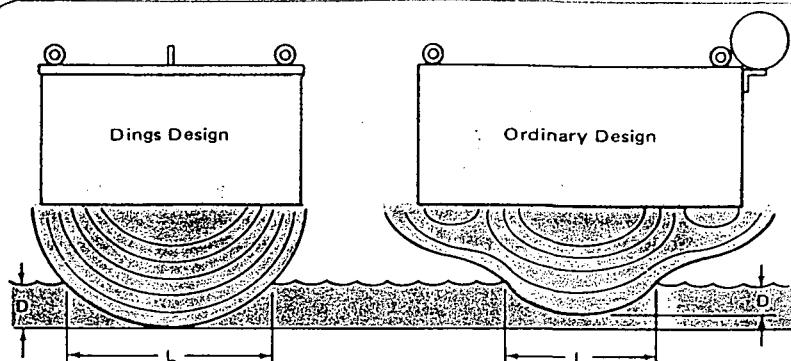
MOUNTING CHOICE Stationary models mount over a head pulley or anywhere over the straight section of a conveyor. A head pulley installation costs less (see discussion under Self Cleaners).

CONTINUOUS DUTY • OBSOLETE OIL TANK DESIGN • NO PLUMBING • MOUNTS AT ANY ANGLE • ANODIZED ALUMINUM • INSULATION BETTER THAN CLASS H • CONVENIENT TERMINAL BOX • THREE YEAR COIL GUARANTEE • BALANCED MAGNETIC CIRCUIT • NO SPARES NEEDED • SHIPPED READY TO OPERATE

OVER
CONVEYOR

OVER
HEAD
PULLEY





L = Length of magnetic field in burden D = Depth of magnetic field in burden

BALANCED MAGNETIC CIRCUIT

Dings has balanced the size and arrangement of components which make up the magnetic circuit in Electro Overhead Magnets: aluminum strip in the coil winding, steel in the end poles and steel in the backplate. This circuit produces a uniformly shaped magnetic field, a long magnetic field and a deep penetrating field - the most effectively shaped separating field.

An ordinary magnet can be physically enlarged to expand the magnetic field, but when the circuit is not in balance, the field is distorted. It becomes larger near the magnet but not in the separating zone where it must penetrate a conveyor burden. An unbalanced circuit can also result in excessive power consumption and in inadequate ampere turns, wasted energy and ineffective magnetism.

All information on this 2 page spread applies to the magnet in all oil cooled Electro Self Cleaner models and in all oil cooled Electro Stationary models.

Oil level and filler plug. You can check oil level any time you want, but you will probably never have to add oil.

Electric terminal box provides for fast hook up and easy access. You simply connect 2 wires from your d-c power source to 2 terminals inside.

Non-magnetic stainless bottom plate for long life. It will hold up no matter what size or quantity of iron is pulled off your conveyor.

Drain hole - It's unlikely you'll ever use it, but it's handy if you do.

Oil convection currents provide efficient cooling. You'll never be concerned with a breakdown in this cooling system.

One way pressure relief valve allows air to escape but not to re-enter. You won't worry about moisture.

unmatched in design and

signed with you in mind

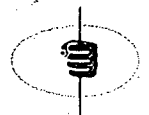
Multiple pancake coils wound with anodized aluminum strip (not wire) are virtually burnout proof. Weight is minimum. Equivalent performance isn't available with any wire design. You can't buy a longer life design.

Steel backplate spreads magnetic lines uniformly to side plates. Too thick it wastes steel. Too thin it chokes off magnetism. You get the right amount in a balanced circuit.

Free space for warm oil to expand. Expansion tanks and plumbing, common in old designs, aren't required. You don't get obsolescence.

Heavy steel plate on all four sides provides an optimum magnetic path and mechanical strength. No side ever needs your attention.

Dings



Magnet may be mounted in any position (even upside down in which case valve, plug and drain are relocated) since there is no need for an expansion tank. You get the most mounting flexibility available.

Oil filled cavity provides total contact with coil and case for maximum heat transfer. Your magnet is filled when you receive it.

Steel core is not covered by a pole shoe. Pole shoes are common in old designs. Elimination of pole shoe in Dings balanced circuit allows stronger and deeper magnetic intensity (a higher gradient). You can't buy more efficiency.

Each coil turn completely immersed in oil, for maximum heat transfer. Your magnet won't overheat.

manufacturing excellence

Ceramox Overhead Magnets

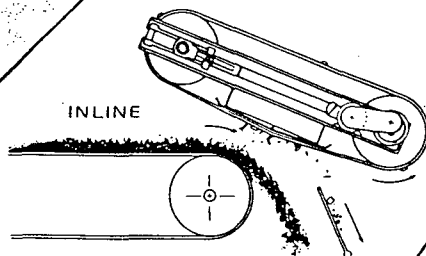
Besides Electro Overhead Magnets, Dings builds a complete line of nonelectric Overhead Magnets. They contain an assembly of permanent magnet material called Ceramox instead of an electro coil assembly. Ceramox Inline models, Crossbelt models and Stationary models are applied to conveyors in the same manner as Electro models.

The obvious advantage of Ceramox models over Electro models is in energizing the magnet. No electric power is required for energizing and there's no energy consumption. Ceramox Overhead Magnets are more economical for some applications - not all. Sizes are available to cover any conveyor width and it's possible to construct Ceramox models with sufficient magnetic strength for many application conditions. In some cases a choice between Ceramox and Electro is a matter of preference or economics.

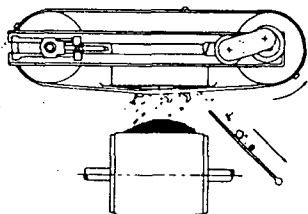
Dings invented the Flux Control Circuit in the late 1960's (patent No. 3,365,599). It was a breakthrough in design of permanent magnet circuits. It overcame the major drawback in designing effective permanent magnets in large size - excessive leakage of magnetic flux. Leakage in the air space between magnet poles in a permanent magnet reduces the amount of flux which emanates from the working face - where it's needed. In the DFC design (Dings Flux Control) air space is replaced by specially oriented Ceramox which acts as a barrier to leakage. All generated flux becomes working magnetism. Permanent magnets have now become practical for Overhead Magnet applications.

Here's what's important to remember about all Ceramox Overhead Magnets:

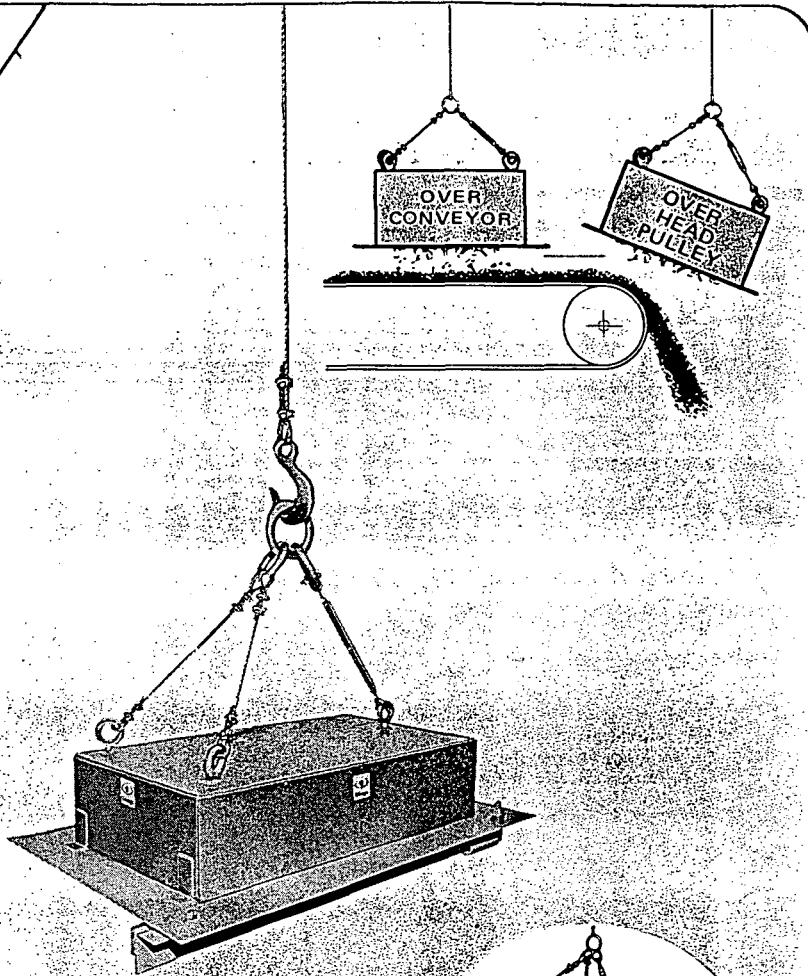
MAGNETISM IS PERMANENT.
NO RECTIFIER IS NEEDED.
NO WIRING FOR MAGNET.
MAGNET OPERATES WITH NO COST.
MAGNET HOLDS IRON IF PLANT POWER FAILS.



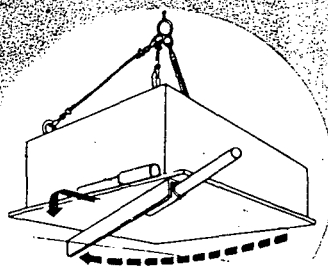
CROSSBELT



CLEANS ITSELF AUTOMATICALLY
CLEANS ITSELF COMPLETELY
RUNS QUIETLY
EXTRA THICK BELT
CLEATS ARE VULCANIZED
DISCHARGES CLEAR OF CONVEYOR
PULLEYS ARE CROWNED
SELF ALIGNING BEARINGS
INTERCHANGEABLE BEARINGS
GREASEABLE BEARINGS
CONTINUOUS DUTY
MOUNTS AT ANY ANGLE
SUPPORT ABOVE OR BELOW
CHOICE OF INLINE OR CROSSBELT
NO SPARES NEEDED
MOTOR AND DRIVE INCLUDED
SHIPPED READY TO OPERATE



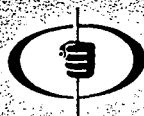
A nonmagnetic stainless steel angle is bolted at one end to the bottom surface near a corner on all Stationary models. A pipe receptacle is welded to the angle so that a length of pipe or tubing can be inserted to act as an arm. Manual movement of the pivoted angle pushes attracted iron off the bottom surface.



MANUAL CLEANING
ARM

STATIONARY CERAMOX OVERHEAD MAGNETS

CLEANS WITH MANUAL UNLOAD ARM
ECONOMY
SAVES SPACE
LESS WEIGHT
CABLE SUSPENSION SUPPLIED
SEPARATE SUSPENSION MEMBERS
TURNBUCKLE ADJUSTMENT
NO CABLE MEASURING
NO CABLE CUTTING
NO MAINTENANCE
SILENT OPERATION
MOUNTING CHOICE
CONTINUOUS DUTY
MOUNTS AT ANY ANGLE
NO SPARES NEEDED
SHIPPED READY TO USE



Dings

GET A QUOTATION

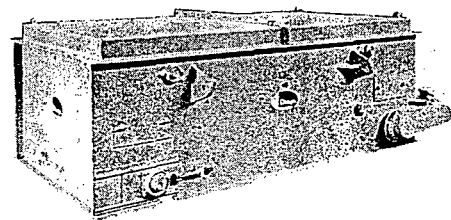
Dings is anxious to furnish you with a specific recommendation and quotation. Sales representatives are ready to assist you. Matching an Electro or a Ceramox Overhead to a conveying application requires knowledge about the conditions and requirements in that particular application. All we need from you now is the information listed below.

Conveyor width _____
Conveyor speed _____
Conveyor capacity in _____
tons per hour _____
Description of conveyed _____
material _____
Width of conveyed ma- _____
terial _____
Maximum depth of con- _____
veyed material _____
Maximum lump size of _____
conveyed material _____
Description of largest and _____
smallest iron piece _____
Type of equipment to be _____
protected _____
Self-Cleaner or Station- _____
ary Magnet _____
Mount over head pulley _____
or over conveyor _____
Direct current available _____

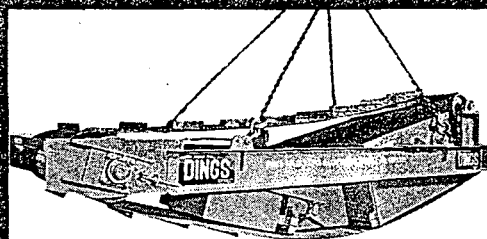
Our quotation will include price, delivery terms, weight, dimensions, watts (unless your job can be handled by a Ceramox model), plus other descriptive information on the magnet model and rectifier (when applicable).

MODIFIED DESIGNS

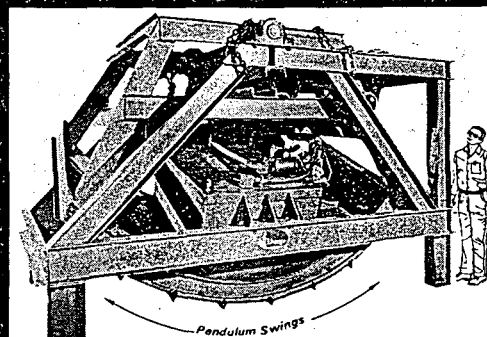
Dust Tight
Enclosure
for control
of air
pollution



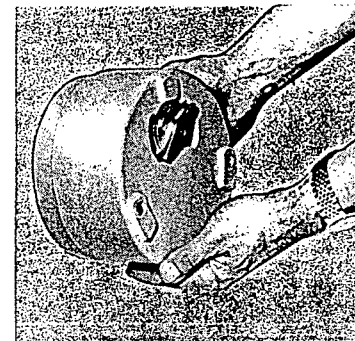
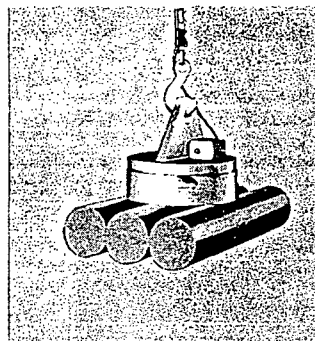
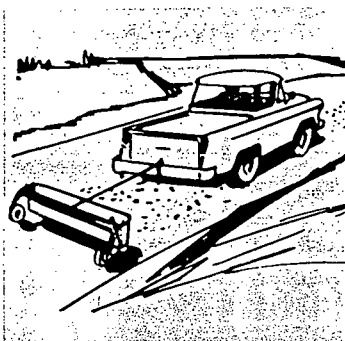
Solid Waste
Magnetic
System for
reclaiming
steel in
shredded
solid waste



Swinging
Pendulum
Magnet for
reclaiming
steel in
slag



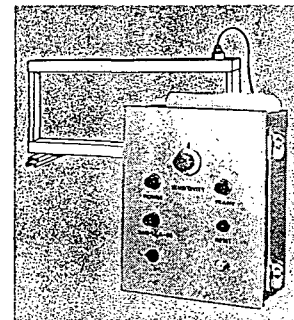
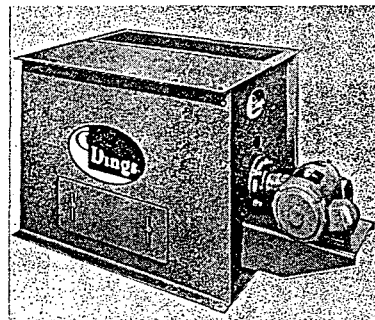
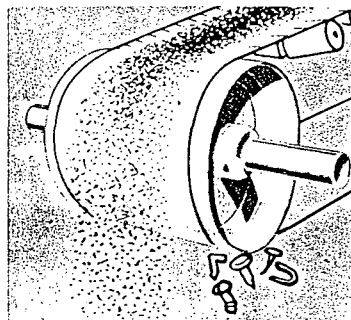
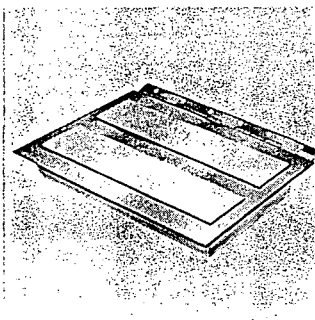
OTHER **Dings** PRODUCTS



The Dings Co. is Foremost in the Manufacture of Industrial Magnets and Power Transmission Equipment. Typical Products:

- magnetic sweepers prevent accidents and tire damage.
- Electricore Lifting Magnets handle tons of scrap iron.
- Elektrolift hoist magnets easily lift metal in the shop.
- magnetic disc brakes mount directly on electric motors.
- plate magnets separate tramp iron in chutes.

- magnetic head pulleys automatically separate damaging tramp iron on conveyors.
- magnetic drum separator automatically separates materials carried in chutes.
- detector signals presence of damaging tramp iron and automatically stops conveyors.



Dings

CO.



DYNAMICS GROUP



magnetic group

The Dings Co. has played a principal role in the development and application of magnetic and power transmission equipment. A company commitment to design and manufacturing excellence has been a major factor in making Dings an industry leader. The Dings Co. offers extensive experience plus proven ability in the practical utilization of magnetic forces. A worldwide network of sales representatives and distributors provides prompt and efficient assistance. Dings is ready to give your problem individual attention.

DINGS . . . A Tradition of Excellence



FILE

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

REQUEST FOR ADDITIONAL INFORMATION

**PENDING PERMIT NO. SC60-263199
SUMTER COUNTY SOLID WASTE MANAGEMENT FACILITY
SUMTERVILLE, FLORIDA**

PREPARED FOR:



**SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS
209 NORTH FLORIDA STREET
BUSHNELL, FLORIDA 33513**

February 22, 1996

921100.000

Springstead Engineering, inc.

Consulting Engineers — Planners — Surveyors

727 South 14th Street

Leesburg, Florida 34748

Lake (904) 787-1414

Sumter (904) 793-3639

Fax (904) 787-7221



**Springstead
Engineering, Inc.**

Consulting Engineers — Planners — Surveyors

727 South 14th Street
Leesburg, Florida 34748

February 22, 1996

Lake (904) 787-1414
Sumter (904) 793-3639
Fax (904) 787-7221

Ms. Susan J. Pelz, E.I.
Solid Waste Section
Division of Waste Management
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

RECEIVED
FEB 23 1996

RE: **Materials Recovery Facility Expansion**
Pending Permit No. SC60-263199, Sumter County
SEI File No. 92-1100.000

Depart **Environmental Protection**
BY **SOUTHWEST DISTRICT**

Dear Ms. Pelz:

Springstead Engineering, Inc. is in receipt of your certified mail Request for Additional Information (RAI), please find the following responses:

GENERAL:

1. It is the Department's understanding that the information submitted (received December 11, 1995) for the construction and operation of the new MRF is intended to replace the information previously submitted (December 16, 1994, February 10, 1995, and May 11, 1995) concerning the composting facility expansion. It will be submitted at a later date. The permit modification request will include construction details and operational information on the expansion composting facility and the digester equipment. Please confirm if the County is in agreement with this understanding. Based on this understanding, the Department will defer the requests for information in the Department's January 13, 1995, March 14, 1995, and May 19, 1995 letters, at this time.
1. The information submitted (received December 11, 1995) for the construction and operation of the new MRF is intended to replace the information previously submitted (December 16, 1994, February 10, 1995, and May 11, 1995) concerning the composting facility expansion. The permit modification request will include construction details and operational information on the composting facility expansion and the digester equipment. The County is in agreement with this understanding. The County appreciates the Department deferring the request for the composting facility expansion information.

ENGINEER'S REPORT:

2. The information submitted states, "Recyclables in the waste stream including metals, plastics, glass, used oil, tires, batteries, and other items are segregated...." (page 3) Please clarify if used oil, batteries and tires are received mixed in the waste stream and are removed, or are received as source-separated materials.
2. The County operates a recycling drop-off center and processing area at the existing facility where residents, businesses, and institutions can deliver source separated items such as used

oil, tires, and lead acid batteries. Tires and lead acid batteries remaining in the waste stream are manually removed by inspectors/sorters from the tipping floor. The tires and the lead acid batteries received in source separated loads are stored until sold and transported to market.

3. The information submitted states, "material which travels across the screen will then pass over the primary sort conveyor where plastics, glass,... will be removed from the stream...." (page 5) Please clarify if these materials will be removed by mechanical means or by hand-sort (pickers).
3. Sorters located along the primary sort conveyor will manually remove plastics and glass (clear, green, brown) for recycling. Ferrous metals and aluminum remaining on the conveyor will be mechanically recovered using a cross belt magnetic separator, magnetic head pulleys and eddy current separator respectively.
4. Please provide procedures for start-up operation, normal operational and emergency shut down operations and safety information as soon as available. (page 5) If this information will not be available within 30 days, please provide an anticipated schedule for the submittal of this information.
4. The recovery equipment supplier is required to provide this information as part of an Operations and Maintenance Manual which will be available two months prior to the shakedown of the facility. The County anticipates receiving this information from the recovery equipment supplier by the end of April, 1996. The County will forward this information to the Department upon receipt.
5. The information submitted states, "The material remaining after the eddy current separator is rejoined with the material passing through the disk screen, which has also passed by a magnetic head pulley..." (page 5) Please clarify this material flow. The process flow shown on Sheet 7 does not appear to show the "rejoining" of these process streams.
5. The disc screen overs are conveyed to C104 conveyor which is located on the 12' high platform. This overs materials is sorted out manually to retrieve all Recyclables and non-compostable material excluding aluminum and remaining ferrous which is removed from the stream utilizing a magnetic head pulley and Eddy Current Separator.

The unders from the disc screen are transferred to the C105 conveyor which is located under the 12' high platform. This unders material is fed directly into C106 excluding the remaining ferrous material which is removed from the stream utilizing a magnetic head pulley on the C105 conveyor.

The C106 conveyor transfers the material out of the process area to the Future Digester Equipment Area ("Compost Feedstock Area").

6. The information submitted states, "A recently revised map of the area showing use and zoning... is presented in Appendix B." (page 5) It does not appear that Appendix B was provided. Please clarify if the drawings submitted constitute Appendix B.
6. The revised "Land Use & Zoning Map" was improperly stated as being in Appendix B, but is rather Sheet 3 of 10 within the plans.
7. The information submitted states, "The design capacity of the facility is... 100 tons in a 7-1/2 hour shift." (page 6) Please clarify if this is the material input to the facility, or the material output from the MRF which will be input to the digester/composting facility.
7. The materials processing facility is designed to receive and process a daily input of 100 tons of material in a 7 1/2 hour shift.
8. The information submitted states, "The geotechnical soil evaluation. has been previously submitted." (page 7) Please provide the title, date and revision number (if applicable) of the previously submitted geotechnical soils evaluation. Since the current submittal is intended to replace the previous submittals, the applicant may elect to resubmit the information in order to provide a comprehensive document.
8. The geotechnical report ("Subsurface Exploration-South 40 Acre Parcel, Sumter County Solid Waste Management Facility, Sumterville, Sumter County, Florida, 12/15/94") is included as Appendix "A".
9. Please provide additional information on the leachate collection system associated with the new MRF. (page 7) Please provide details on the size of the sumps, grates, elevations of the sumps and piping, and details on the 4-foot diameter wetwell (including elevations and pump details). Please clarify if the truck which will be used to transport leachate to the existing recirculation system is limited to leachate hauling exclusively, or is the truck used for other purposes.
9. The details of the leachate collection system including size of the sumps, grates, elevations of the sumps and piping, and details on the 4-foot diameter wetwell are being provided in Sheet 10a of 10 along with other revised sheets in Appendix "B". The truck to be used to transport leachate is the same vehicle which currently serves the same purpose in the existing MRF. The truck is being used exclusively for leachate hauling.
10. The information submitted states, "The floor surfaces are sloped such that surface flow is directed to the leachate collection system." (page 8) Please specify the floor slopes of the plan sheets. Please clarify if the floors will be cleaned at the end of each work day, or at some other frequency.
10. Due to the varying distances from the building walls toward the leachate inlets within the building, the slope of the floor will vary accordingly. The finished floor elevation at all of the entrances/exits for the processing floor will be 71.0 feet NVGD, and the inlets will be placed at the elevations shown on Sheet 10a of 10 along with other revised sheets in

Appendix "B". The average slope of the floor will be 1/16"/FT. The floors will be cleaned at the end of each work day.

11. The information submitted states, "The facility is regularly patrolled to minimize any litter which may escape the screens." (page 9) Please provide the minimum frequency for collection and removal of litter.
11. **Minimum frequency for collection and removal is one (1) time per day.**
12. Please provide the permit numbers referenced in item #f. on page 9.
12. **SWFWMD WUP #2011259.00
FDEP DRY-LINE Permit #DS60-262528**
13. The information submitted states, "Processing equipment is presented on Sheet 7.... with the details presented in Appendix A." (page 10) Please specify the minimum number of loaders and transfer trailers/trucks which are available for use in the operation. Please provide manufacturer specification sheets (cut-sheets) for the "residue disk screen". (page 12).
13. **Under the operation of the processing facility, a minimum of three loaders and three transfer trailers/trucks are available for use in the operation. The manufacturer specifications for the disc screen is presented in Appendix "C".**
14. Please provide a Contingency Plan which provides procedures for waste handling in the event of equipment failure. Please estimate the maximum downtime for critical pieces of equipment. Will spare parts for the processing equipment be available on-site? As required by FAC 62-701(20)(g), please provide a plan for disposal of unmarketable recyclables, unauthorized wastes and residues. Please provide procedures for waste handling in the event of emergencies such as fires, explosions or natural disasters as required by FAC 62-701.700(3)(c).
14. **If equipment failure occurs, material from the tipping floor will be loaded into trucks and transported to an approved disposal facility. Sumter County has an agreement in place with the Lake County Ogden/Martin facility. Downtime for critical pieces of equipment will be a maximum of 24 hours. Spare parts for the processing equipment will be available on site. Unmarketable recyclables, unauthorized wastes and residues will be transported and disposed at the Ogden-Martin facility. In the event of an operations interruption or emergency, the waste will be transported directly to the Lake County facility for disposal.**
15. The information submitted states, "Sumter County will not accept easily identifiable hazardous waste.... Personnel are to read and become familiar with the Hazardous Waste Information for Sumter County Landfill." (page 10) Please provide a copy of "easily identifiable" hazardous waste. Please provide a copy of the "Hazardous Waste Information for Sumter County Landfill".

15. Appendix "D" contains the "Hazardous Waste Information for Sumter County Landfill Operations Personnel" including the list of easily identifiable hazardous waste, as approved in Permit No. S060-211179.
16. Please provide a list of each piece of equipment in the process and the associated maximum and normal processing rate for each processed material.
16. Please see Table 1 on Page 6 for a list of each piece of equipment in the process and the associated maximum and normal processing rate for each processed material.
17. Please provide the following information for each recyclable material, non-processable wastes, unauthorized wastes and residues: the maximum storage quantity, the maximum storage time, storage location, and storage method (i.e. bales, loose, in containers (tarpred and untarpred), inside/outside, etc.). Please provide a projection of the waste types and quantities expected in future years, as required by FAC 62-701.700(2)(a) and (d).
17. Please see Table 2 on Page 7 for the following information on each recyclable material, non-processable wastes, unauthorized wastes and residues: the maximum storage quantity, the maximum storage time, storage location, and storage method (i.e. bales, loose, in containers (tarpred and untarpred), inside/outside, etc.).

The projection of the waste types and quantities expected in future years are presented in Table 3, Municipal Solid Waste To Be Collected and Recycled, on page 8, and were taken from County's 1995-1996 Solid Waste and Recycling Grant. The table provides projections on the types and quantities of waste the County anticipates to generate and recycle in future years as required by FAC 62-701.700(2)(a).

18. Please provide a description of the personnel required for the operation of the facility, as required by FAC 62-701.700(3)(a).
18. An Operation and Maintenance Manual is being created by the County's materials recovery process contractor (RRT Design and Construction Corp.) as required by FAC 62-701.700(3)(a). This information will be available by the end of April, 1996 and will be forwarded to the Department upon receipt, along with the information requested in Item No. 4.
19. Please provide a plan that identifies the steps needed to close the facility, as required by FAC 62-701.700(3)(d).
19. Steps required to close the facility include:
 1. The County will notify to the Department in writing 180 days before the date the facility is expected close. No waste shall be received by the facility after the expected closing date.

TABLE 1

	MANUFACTURERS RATED MAXIMUM OPERATING CAPACITY (TONS/DAY)	NORMAL OPERATING CAPACITY (TONS/DAY)
CONVEYOR SYSTEM	125	100
DEBAGGING SYSTEM	125	100
RESIDUE DISC SCREEN	125	100
MAGNET SYSTEM	125	100
EDDY CURRENT SYSTEM	75	60
BALER	40-60*	32-48*

* DEPENDING ON MATERIAL BALED

NOTE: NORMAL OPERATING CAPACITY IS ASSUMED TO
BE INDUSTRY STANDARD OF 80% OF MANUFACTURERS
MAXIMUM RATED CAPACITY.

TABLE 2

	BALED, STORED & MARKETED	BULK STORED IN ROLLOFFS- & MARKETED	TRANSFERRED TO DISPOSAL FACILITY	STORED FOR PICKUP OR TRANSFER TO RECYCLER	RETURNED TO PROCESS LINE FOR ADDITIONAL RECOVERY	MAXIMUM STORAGE QUANTITY	MAXIMUM STORAGE TIME	STORAGE LOCATION	STORAGE METHOD
PROCESSED MATERIAL									
ALUMINUM	X					*	1 YEAR	*	**
FERROUS	X					*	1 YEAR	*	**
PLASTIC	X					*	1 YEAR	*	**
PAPER	X					*	1 YEAR	*	**
PLASTIC	X					*	1 YEAR	*	**
FIBRE	X					*	1 YEAR	*	**
GLASS		X				*	1 YEAR	*	**
RESIDUES			X		X	*	72 HOURS	*	**
NON-PROCESSABLES									
OVERSIZE AND BULKY			X			*	72 HOURS	*	**
TIRES				X		*	1 YEAR	*	**
LEAD-ACID BATTERIES				X		*	90 DAYS	*	**
USED OIL				X		*	90 DAYS	*	**
UNAUTHORIZED									
HAZARDOUS WASTE			X			*	N/A	*	**

* STORAGE FOR ALL RECYCLABLES WILL BE PROVIDED IN THE EXISTING PROCESSING BUILDING WHICH WILL BE UTILIZED AS A WAREHOUSE FOR RECYCLABLES. (MATERIALS WILL BE STORED IN AMOUNT NECESSARY TO MEET TRUCK LOAD QUANTITIES FOR BEST TRANSPORTATION PRICES.

** ALL MATERIALS WILL BE EITHER BALED AND STACKED, PALLETIZED, BINNED OR STORED IN ROLL-OFFS OR TRAILERS.

**TABLE
MUNICIPAL SOLID WASTE TO BE
COLLECTED AND RECYCLED**

(July 1, 1995 - June 30, 1996 and July 1, 2014 - June 30, 2015)

OPEN DATA FILE: before pushing button, do not alter any formats, do not enter information in shaded areas.

COUNTY:	Sumter		1995 POPULATION:		36,700		2014 POPULATION:		67,400								
(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)	
Materials		To Be Collected and Recycled July 1,1995 - June 30, 1996						To Be Collected July 1, 2014 - June 30, 2015									
		Collected Tons(a)	Percent Total Tons(b)	Pounds per Capita per Day(c)	Recycled Tons	Percent Recycled(d)	Collected Tons(e)	Percent Total Tons(b)	Pounds per Capita per Day(f)								
1. Minimum 5 Materials(g)																	
a. Newspaper		3,039	7	0.45	1,094	36	5,581	7	0.45								
b. Glass		1,636	4	0.24	491	30	3,005	4	0.24								
c. Aluminum cans		117	0	0.02	16	14	215	0	0.02								
d. Plastic bottles		1,169	3	0.17	140	12	2,146	3	0.17								
e. Steel cans		1,403	3	0.21	182	13	2,576	3	0.21								
2. Special Waste Materials(h)																	
a. C&D debris		14,025	30	2.09	1,519	11	21,464	25	1.75								
b. Yard trash		5,844	13	0.87	3,282	56	11,591	14	0.94								
c. White goods		140	0	0.02	140	100	258	0	0.02								
d. Tires		94	0	0.01	94	100	172	0	0.01								
e. Process fuel(i)		NA	NA	NA		100	NA	NA	NA								
3. Other Waste Materials																	
a. Other plastics		1,865	4	0.28	261	14	3,426	4	0.28								
b. Ferrous metals		2,805	6	0.42	1,964	70	5,151	6	0.42								
c. Non-ferrous metals		1,403	3	0.21	1,150	82	2,576	3	0.21								
d. Corrugated paper		3,740	8	0.56	1,309	35	6,869	8	0.56								
e. Office paper		1,169	3	0.17	479	41	2,146	3	0.17								
f. Other paper		3,273	7	0.49	1,211	37	6,010	7	0.49								
g. Food		2,338	5	0.35	608	26	4,293	5	0.35								
h. Textiles		701	2	0.10	7	1	1,288	2	0.10								
i. Miscellaneous		1,989	4	0.30	1,843	93	7,090	8	0.58								
4. County Totals		46,750	100.00	6.98	15,791	34	85,857	100.00	6.98								
Must Equal Figure Reported in Table3:		46,750	Must = 100%	6.98	15,791	34	85,857	Must = 100%	6.98								

- (a) Collected Tons = column 2, line 4 (total tons collected) times column 3 (percent total tons) divided by 100.
- (b) Percent Total Tons as reported in County's Waste Composition study. County Total must = 100%.
- (c) Pounds/Capita/Day = column 2 (material type tons) times 2,000 pound/ton divided by the 1995 county population divided by 365 days.
- (d) Percent Recycled = column 5 (recycled tons) divided by column 2 (material type tons) times 100. No recycling rates can be greater than 100%.
- (e) Collected Tons = column 7, line 4 (total tons collected) times column 8 (percent total tons) divided by 100.
- (f) Pounds/Capita/Day = column 7 (material type tons) times 2,000 pound/ton divided by the 2014 county population divided by 365 days.
- (g) The Legislature established a goal of 50 percent for each material by the end of 1994 for each county with a population over 50,000.
- (h) The total of these materials can count towards no more than one half of the 30 percent recycling goal for each county.
- (i) Process fuel (yard, wood and paper waste used in process boilers) should not be included in line 4; column 2 (total county tons collected), as they are accounted for in other material categories. They should be counted in line 4; column 5 (total county tons recycled.)

2. Within 30 days after receiving the final solid waste shipment, the County shall remove or otherwise dispose of all solid waste or residue in accordance with the approved closure plan.
 3. Sign the facility to notify the public of the end of acceptance of material at this facility and describe an alternative location where material can be legally disposed.
 4. Remove and dispose of all material on the tipping floor (Max 3 days of material). The tipping floor material will be loaded into trucks and hauled to an FDEP approved disposal facility.
 5. Remove all processed material from recovery equipment and catch bins, bale load and transport to FDEP approved disposal facility.
 6. Shut down power to processing equipment and building.
 7. Secure all entrances to insure no unauthorized entry.
 8. Closure will be completed within 180 days after receiving the final waste quantity. Closure will include removal of all recovered materials from the site. When closure is completed, the County shall certify in writing to the Department that closure is complete. The Department will make an inspection within 30 days to verify the closure and advise the owner or operator of the closure status.
20. Please provide a cost estimate for closing the facility, pursuant to FAC 62-701.700(4). The cost estimates shall include the costs of loading, transportation and disposal of the materials. The closing costs shall be for a third-party performing the work, and shall be based on the maximum quantity of materials (processed, unprocessed, residuals, and unauthorized wastes) which may be stored in-process at the facility at any time.
20. Cost Estimate for closing the Materials Recovery Facility as required by Rule FAC 62-701.700(4).

Assumptions: Maximum material to dispose is 300 tons

Three trucks available for material disposal

Four days will be required to completed the hauling

Round trip to disposal facility is 24 miles

Labor: 1 Supervisor

1 Loader Operator

3 Truck Drivers

Fuel Costs:	\$575
Labor Cost:	\$1,520
Disposal Cost:	<u>\$13,500</u>
Total Cost	\$15,595

DRAWINGS:

21. Sheet 7.

- a. Please provide elevations for the floors, sumps, walkways, etc.
- b. Please provide details on the curbing described in the Engineer's Report, item #2.c(2), page 8.
- c. Please provide a north-south cross-section of the processing line, and an east-west cross-section of the infeed conveyor (C-100, C-101). Please provide a north-south cross-section of the "Recyclables baler" processing line. Please include elevations on all cross-sectional views.
- d. Please identify the cyclone and bag breaker on the plan sheet.
- e. Please clarify the purpose of the bins located directly north of the bag breaker.
- f. Please clarify if the material which is transported on conveyor C-104 is the "overs" or "unders" from the "RDS Residue Screen". Please clarify if the "RDS Residue Screen" is the "residue disk screen" referenced in the Engineer's Report (pages 4 and 12).
- g. Please clarify if a magnet exists over the conveyor (C-104) adjacent to the southernmost FE bin (located just north of the eddy current separator).

21.
 - a. We are providing a revised Sheet 7 of 10 in Appendix "B" showing the elevations for the floors, sumps and walkways.
 - b. FDOT Index 300, Type "D" curbing will be used around the outside perimeter of the building. A typical detail is presented on Sheet 7 of 10 in Appendix "B".
 - c. The requested north-south cross section of the processing line, and the east-west cross-section of the infeed conveyor (C-100, C-101) and a north-south cross-section of the "Recyclables baler" processing line is shown on the Equipment Contractor Drawing in Appendix E.
 - d. The cyclone and bag breaker are identified on the revised sheet 7 of 10 in Appendix "B" in the plans.
 - e. These bins are to receive other bulky waste at the initial sort station prior to entering the bag breaker.
 - f. The materials conveyed on C-104 are the "overs" from the "RDS Residue Screen". The "RDS Residue Screen" is the Residue Disc Screen mentioned within the report.
 - g. The C104 and C105 conveyors are supplied with magnetic head pulleys. The magnetic head pulleys will remove any remaining ferrous from the stream. The Ferrous is transferred via chute to self dumping hoppers located on the processing floor.

22. Sheet 8.

- a. Please provide overall dimensions for the building shown on this sheet.
- b. Please provide the height of the partially open wall shown on the East Elevation. Please identify the circular structures shown to the south of the partially open wall on the East Elevation (exhaust fans?).

22. a. The overall dimensions for the building are shown on the revised sheet 8 of 10 in Appendix "B" of the plans.

- b. 1. The height of the partially open wall is shown on the East Elevation is 8 feet.
2. The circular structures shown to the south of the partially open wall show the exit openings for the digesters.

23. Sheet 10.

Please provide a north arrow on this sheet. Please identify (label) the location of a "Typical Push-Wall Foundation Detail" on the plan view. Please identify the structures located in the southern portion of the building.

23. Please see revised sheet 10 of 10 in Appendix "B" of the plans.

Sumter County believes that this information answers all of the questions raised in the Department's request for additional information. The Sumter County Solid Waste Management Facility continues to meet or exceed all permit requirements. Sumter County looks forward to the issuance of the permit for this facility. We appreciate the Department's cooperation and assistance in the processing of this permit application.

We hope that this information meets your needs at the present time. Should you have any further comments or questions, please feel free to contact our office.

Very truly yours,
SPRINGSTEAD ENGINEERING, INC.


David W. Springstead, P.E.
Engineer
Florida Registration No. 48229

DWS/jal

copy: Garry Breeden - Sumter County
Mitch Kessler - TIA Consultants
John Matalevich - RRT
Terry Hurst - Sumter County
SEI File

APPENDIX A

SUBSURFACE EXPLORATION

AT

**SOUTH 40 ACRE PARCEL
SUMTER COUNTY SOLID WASTE
MANAGEMENT FACILITY
SUMTERVILLE, SUMTER COUNTY, FLORIDA**

FOR

**SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS
DEPARTMENT OF PUBLIC WORKS**



**CENTRAL TESTING LABORATORY
LEESBURG, FLORIDA**

**DECEMBER 15, 1994
92-1100.003**

Central Testing Laboratory

Engineering and Materials Testing

Reply to:
Leesburg

December 15, 1994

Sumter County Board of County Commissioners
Department of Public Works
222 E. McCollum Avenue
Bushnell, Florida 33513

Attn: Mr. Garry Breeden, Director

RE: Subsurface Soil Exploration
South 40-Acre Parcel
Sumter County Solid Waste Management Facility
Sumterville, Sumter County, Florida
Job. No 92-1100.003

Dear Mr. Breeden:

Central Testing Laboratory (CTL) has completed a subsurface soil exploration for the above referenced project. The purposes of performing this exploration were to explore and evaluate the general subsurface conditions within the site. This report documents CTL's findings and presents our engineering recommendations.

Site Location and Proposed Construction

The subject site is located ½ mile south of County Road 470 approximately 1 mile east of the intersection of CR 470 and Interstate Highway I-75 (Section 22, Township 20 South, Range 22 East) in Sumterville, Sumter County, Florida. The general site location is shown on the 1958 Bushnell, Florida, USGS Quadrangle Map and is presented in Figure 1.

It is CTL's understanding that the proposed development for the site consists of a covered composting pad building and screening building for processing the compost along with additional features including paved parking/drive areas and stormwater retention areas.

The subject site has been cleared and the soil materials have been removed from the site to an approximate elevation of 71.5 feet NGVD since performance of the field exploration borings.

P.O. Box 883
Floral City, Florida 34436
(904) 726-6447

Hernando County
(904) 796-0035

727 S. 14th Street
Leesburg, FL 34748
(904) 787-1268

Sumter County
(904) 793-3639

1725 SW 17th Street
Ocala, FL 34474
(904) 622-1186



Review of Soil Survey Maps

Based on the 1988 Soil Survey for Sumter County, Florida as prepared by the U.S. Department of Agriculture, Soil Conservation Service, the predominate soil types at the site are identified as the "Astatula fine sand, 0 to 8 percent slopes" soil series, the "Astatula fine sand, rolling" soil series and the "Apopka fine sand, 0 to 5 percent slopes" soil series.

The "Astatula fine sand" soil series consists of fine sands and slightly silty fine sands to a depth of 80 inches. The internal drainage of the "Astatula fine sand" is characterized as being excessively drained and the soil permeability is greater than 20 inches per hour. According to the Soil Survey, the seasonal high water table for the "Astatula fine sand" is typically greater than 6 feet below the natural ground surface.

The "Apopka fine sand" soil series consists of fine sands and slightly silty fine sands to a depth of 54 inches underlain by a clayey fine sand to a depth of 80 inches. The internal drainage of the "Apopka fine sand" is characterized as being well drained and the soil permeability is from 6 to 20 inches per hour for the fine sands and slightly silty fine sands and from 0.6 to 2.0 inches per hour for the clayey fine sands. According to the Soil Survey, the seasonal high water table for the "Apopka fine sand" is typically greater than 6 feet below the natural ground surface.

Site Geology

The geology of the site may be described as a layer of clastic material (sand, silt and clay) overlying carbonates (limestone and dolomite). The thickness of the clastic layer is probably from between 30 to 80 feet thick. The limestone is several thousand feet thick. The upper, more recently deposited limestones make up the Floridan Aquifer. The thickness of the Floridan Aquifer probably nears 1500 feet in this area. The limestone formations beneath the site listed from youngest to oldest are:

The Ocala Group of the Late Eocene Epoch dated approximately 38 million years old. The Ocala Group is made up of the Crystal River Formation and the Williston Formation. Some sources also include the Inglis Formation.

The Avon Park Limestone of the middle Eocene Epoch dated approximately 41 to 48 million years old.

The Oldsmar Limestone of the Middle and Early Eocene Epoch dated approximately 48 to 53 million years old.

The Cedar Keys Formation of the Late Paleocene Epoch and the Early Eocene Epoch dated approximately 53 to 60 million years old.

The Oldsmar Limestone and the Cedar Keys Formation are not considered to be a part of the Floridan Aquifer. Some sources include the Lake City Limestone as part of the Floridan Aquifer, placed between the Avon Park Limestone and the Oldsmar Limestone.

References used in the geology section are:

Column No. 30, Gulf Coast Regional Chart, Correlation of Stratigraphic Units of North America (COSUNA) American Association of Petroleum Geologists.

Geologic Highway Map of the Southeast Region, American Association of Petroleum Geologists and the United States Geological Survey.

Hydrology of Lake Panasoffkee, Sumter County, Florida, United States Geological Survey, Water Resources Investigation No. 77-88.

Site Hydrogeology

It appears that no surficial aquifer is present beneath the site. The subject site is directly underlain by the Floridan Aquifer consisting of the Ocala Group and Avon Park Group of limestones. Due to the relatively thin layers of overlying deposits, the potentiometric surface of the upper Floridan Aquifer is above the top of the aquifer in this area. In addition, the potential exists for temporary perched water tables on top of impermeable clay layers present above the potentiometric surface. Due to the relatively thin overlying deposits, the site is thought to have moderate capabilities to recharge the Floridan Aquifer by local rainfall.

The subject site is located in the eastern edge of the Tsala Apopka Plain physiographic element. This element is characterized as a low-lying terrain from which moderate surface runoff occurs. The land surface is poorly to moderately well drained and the potentiometric surface of the upper Floridan Aquifer is generally close to the land surface.

References used in the hydrology section are:

Water-Resources Information for the Withlacoochee River Region, West Central Florida, United States Geological Survey, Water-Resources Investigations 81-11.

Reconnaissance of Geohydrologic Areas and 1981 Low-Flow Conditions, Withlacoochee River Basin, Southwest Florida Water Management District, United States Geological Survey, Water-Resources Investigations Report 86-4203.

Field Exploration Program

The field exploration program consisted of performing 5 Standard Penetration Test (SPT) borings. The locations of these borings are illustrated on the Boring Location Plan presented in Figure 2. The boring locations were determined in the field based on measurements using a cloth tape from the approximate location of the property lines. The locations should be considered accurate only to the degree implied by the method of measurement used.

The SPT borings were performed at selected locations on the site. The borings were advanced to depths ranging from 35 to 70 feet below the ground surface using the methodology outlined in ASTM D-1586. This field procedure is outlined in the method summary presented in Appendix I.

Samples recovered during performance of the SPT borings were visually classified in the field and representative portions of the samples were placed in containers and transported to our laboratory for further analysis.

The groundwater level at each of the boring locations was measured upon completion of drilling to document the water table conditions at the site.

All of the borings were grouted to the ground surface with neat cement grout at the completion of drilling.

Laboratory Testing Program

Soil samples from the borings were classified in the field and transported to the laboratory for further testing and classification. The soil samples were visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488) with the soil colors being determined from the Munsell Soil Color Chart. The resulting soil descriptions are shown on the soil boring profiles presented in Appendix II.

Results of Field Exploration

The results of the field exploration are graphically shown on the soil boring logs presented in Appendix II. These profiles represent CTL's interpretation of the field boring logs and the results of the laboratory analysis of the recovered samples. The

stratification lines represent the approximate boundary between soil types. The actual change may be more gradual than suggested.

The results of the borings indicate that the general soil profile is as follows:

<u>Elevation</u>	<u>Description</u>
100-55	Loose to medium dense fine sands and slightly silty fine sands
55-45	Medium dense clayey fine sands and clays
45-	Loose to very dense limerock

Limerock was not encountered in Boring B-4 to an Elevation of 23 feet NGVD where the boring was terminated.

The above soil profile is outlined in general terms only. Please refer to the boring logs in Appendix III for soil profile details.

The borings were allowed to remain open on the date drilled to determine the level of the groundwater. The groundwater was encountered in the borings at elevations ranging from 42.5 to 45.0 NGVD at the time of drilling.

Changes in groundwater levels should be expected throughout the year due to seasonal differences in rainfall and other factors that may vary from the time the borings were conducted.

Typical Seasonal High Water Table

The typical seasonal high water table each year is the water level in the August-September period at the end of the rainy season. The seasonal high water table is affected by a number of factors. The drainage characteristics of the soils, the land surface elevation, the presence and distance to relief points such as lakes, rivers, swamp areas, etc., are some important factors which have an influence on the seasonal high water table.

Based on CTL's interpretation of the site conditions using our boring logs, it is anticipated that the seasonal high water table in the retention pond area will be at a depth of greater than 6 feet below the existing ground surface (below elevation 65.5 feet NGVD).

Evaluations and Recommendations

The results of CTL's exploration indicate that, with proper site preparation as recommended in this report, the existing soils are suitable for supporting the proposed structures on conventional shallow foundations such as spread footings or thickened edge slabs.

Recommendations for foundation site preparation which in CTL's opinion are best suited for the proposed facility and existing soil conditions are presented below. The recommendations are made as a guide for the design engineer and/or architect. Parts of these recommendations should be incorporated into the project's specifications.

Recommended Site Preparation

Stripping and Grubbing

Based on a visual observation of the site, the proposed construction areas have been previously stripped and grubbed.

Proof-rolling

Proof-rolling is recommended to: (1) locate any soft areas or unsuitable surface or near surface soils, (2) to increase the density of the soils within the top 3 to 4 feet, and (3) to prepare the existing surface for the addition of fill soils (if required). Proof-rolling of the building and parking/drive areas should consist of at least 10 passes of a self-propelled vibratory compactor capable of delivering a minimum impact force of 30,000 to 35,000 pounds per drum to the soil. Each pass of the compactor should overlap the preceding pass by 30 percent to insure complete coverage. If deemed necessary, in areas that continue to "yield", remove all deleterious material and replace with a clean, compacted sand backfill. The proof-rolling should occur after cutting and before filling.

The proof-rolling should produce a density equivalent to 95% of the modified Proctor (ASTM D-1557) maximum dry density value for a depth of 2 feet in the building areas and 1 foot in the parking/drive areas. Additional passes of the compaction equipment may be required if this density requirement is not achieved.

Suitable Fill Material and the Compaction of Fill Soils

All fill materials should be free of organics such as roots and/or vegetation. CTL recommends using fill with between 3 to 12 percent by dry weight of material passing the U.S. Standard

No. 200 sieve size. Soils with greater than 10 to 12 percent passing the No. 200 sieve will be difficult to compact due to their inherent nature to retain soil moisture. The existing fine sand soils available at the site should be suitable for use as fill soils.

Structural fill should be placed in level lifts not thicker than 12 inches (uncompacted). Each lift should be compacted to at least 95 percent of the modified Proctor (ASTM D-1557) maximum dry density value. If hand-held compaction equipment is used, reduce the uncompacted lift thickness to 6 inches. The filling and compaction operation should continue in lifts until the desired elevation is attained.

Foundation Support

Excavate the foundations to the proposed bottom of the footing elevations and verify the in-place compaction for a depth of 2 feet below the footing bottoms. If necessary, compact the bottoms of the excavations to achieve a minimum dry density equivalent to 95 percent of the modified Proctor maximum dry density (ASTM D-1557) value for a depth of 2 feet below the footing bottoms.

Based on the existing soil conditions, and assuming the above outlined proof-rolling and compaction criteria is implemented, an allowable soil bearing pressure of 2500 pounds per square foot (p.s.f.) may be used in the foundation design. This bearing pressure should result in foundation settlements within tolerable limits (i.e., 1 inch or less).

All bearing wall foundations should be a minimum of 24 inches wide and column foundations 36 inches wide. A minimum soil coverage of 24 inches should be maintained from the bottom of the exterior foundations to the adjacent outside finished grades.

Compaction beneath all floor slabs should be verified for a depth of 12-inches and meet the 95 percent criteria (modified Proctor, ASTM D-1557).

Moisture entry from the underlying subgrade soils should be minimized. An impervious membrane placed between the subgrade soils and floor slab will help to accomplish this. A polyethylene film (6 mil) is commonly used for this purpose. Care should be used so that the membrane is not punctured when placing reinforcing steel (or mesh) and concrete.

Expansion joints should be used around columns if they are isolated from the floor slab. The expansion joints should be sealed with a water-proof sealant.

Based on the groundwater conditions encountered, dewatering should not be required to achieve the necessary stripping and ensuing construction, backfilling, and compaction requirements presented in this report.

Typical Pavement Section

Site Preparation

All areas to be paved should be stripped and grubbed of surficial debris including vegetation, roots and organic matters. The natural ground surface should then be compacted to achieve a density equivalent to 95 percent of the modified Proctor (ASTM D-1557, AASHTO T-180) maximum dry density value for a depth of 12 inches.

Limerock Base

A limerock base course 8 inches thick overlying a 12-inch thick stabilized subgrade can be used provided that grading and drainage plans preclude periodic saturation of the base material. The periodic saturation of a limerock base material could lead to premature pavement distress. The limerock must be compacted to 98 percent of the modified Proctor (ASTM D-1557, AASHTO T-180) maximum density value and have a minimum Limerock Bearing Ratio of 100 percent.

A 12-inch thick subgrade must be placed beneath the limerock base and stabilized with suitable clayey soil or limerock mixed with soil. The stabilized subgrade must be compacted to 98 percent of the modified Proctor maximum dry density (ASTM D-1557, AASHTO T-180) value and have a minimum Limerock Bearing Ratio of 40 percent.

Wearing Surface

Install a minimum of 1-1/4 inch of FDOT Type S-1 asphaltic concrete having a minimum Marshall Stability of 1,500 lbs. For truck parking and drive areas, increase the minimum thickness to 2 inches of Type S-1 asphaltic concrete. Specific requirements for the Type S-1 asphaltic concrete wearing surface are outlined in Section 331 in the Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, 1991 Edition.

The latest specifications of Florida Department of Transportation shall govern the design and placement of the limerock base and asphaltic concrete wearing surface.

Preliminary Evaluation of Sinkhole Potential

The prediction of the development of sinkholes in a specific area is not an exact science. However, certain areas are known to be more susceptible to sinkhole development than others due to hydrogeologic conditions favoring the development of sinkholes. In general, Central Florida is considered a sinkhole - prone area.

Based on CTL's area study and review of relevant USGS Quadrangle maps, The subject site does not display features indicative of sinkhole depressions. Based on the results of the shallow borings performed for this exploration, no soil conditions indicative of sinkhole activity were encountered.

This study is based on a relatively shallow exploration. A deep subsurface exploration with a more comprehensive scope of work would be necessary for a more detailed sinkhole evaluation.

Quality Control

CTL recommends establishing a comprehensive quality control program to insure that site preparation and foundation construction is conducted according to plans and specifications. The materials testing and inspection services should be provided by Central Testing Laboratory.

An engineering technician should be on-site to monitor all stripping and grubbing, to verify that all deleterious materials have been removed, and observe the proof-rolling to make sure that the appropriate number of passes are applied to the subgrade. Density testing should be performed during backfilling and below all footings and floor slabs to check the required densities. Field density values should be compared to laboratory Proctor moisture-density results for each different natural and fill soil encountered.

For the pavements, the results of stripping, grubbing and proof-rolling should be verified by on-site inspections and observations. Natural ground and subgrade densities and LBR values should be measured. The base course should be tested for LBR value, density and thickness. Samples of the asphaltic concrete should be obtained and tested in the laboratory for Marshall stability, flow, asphalt content, and aggregate gradation. Also, the in-place asphaltic concrete thickness should be verified in the field.

Inspection and testing the construction materials for the foundations and other structural components is also recommend.

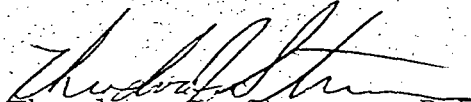
Closure

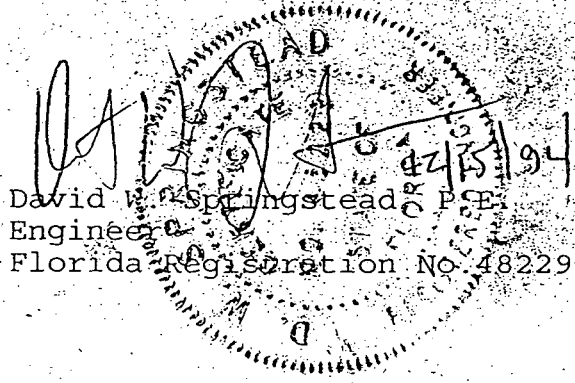
The analyses and recommendations stated within this report are based upon the data obtained from the soil borings in Appendix II and the assumed loading conditions. Variations may be present adjacent to or between the borings which were not apparent in the boring logs. If variations are encountered during construction, it will be necessary to reevaluate the recommendations made in this report.

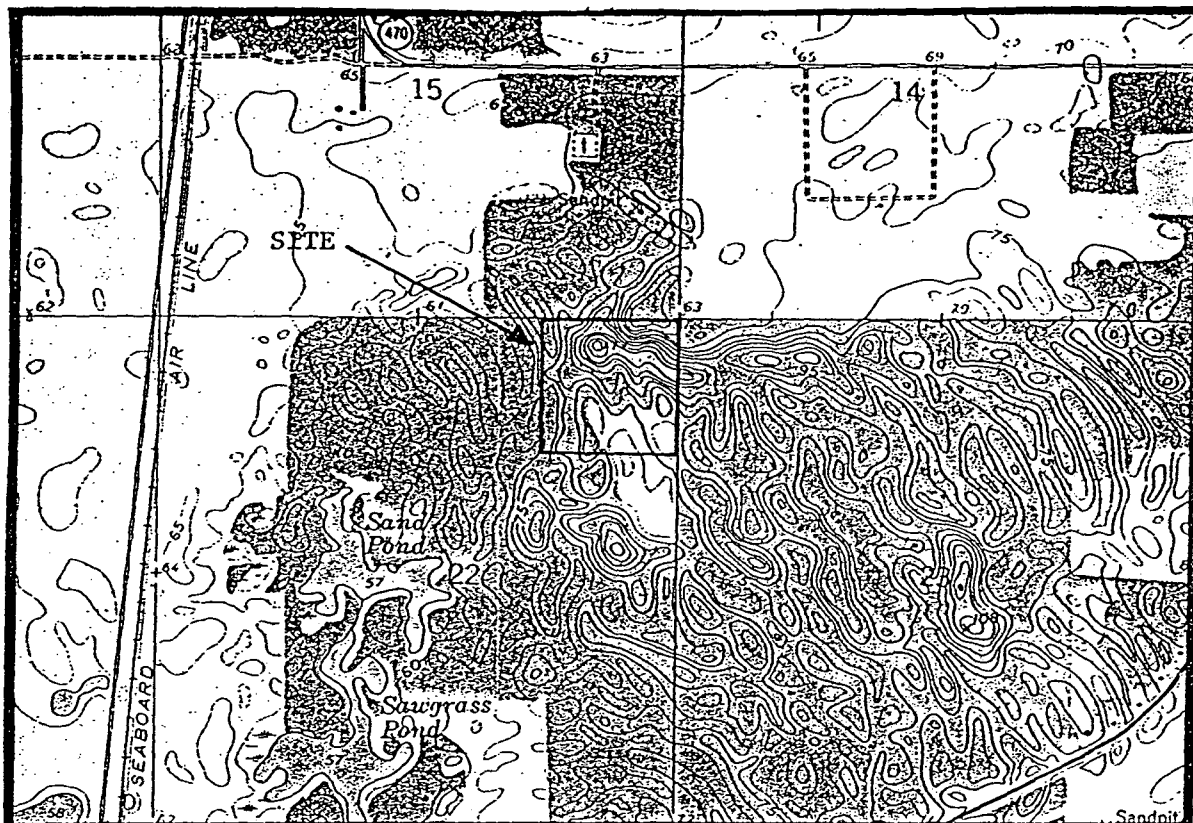
Generally accepted geotechnical and hydrogeological engineering practices were employed in the preparation of this report. CTL should review the conclusions and recommendations made in this report if changes occur in the design of the proposed project.

CTL is pleased to be of assistance to you on this phase of your project. If we may be of further service to you or should you have any questions, please contact us.

Very truly yours,
Central Testing Laboratory


Theodore J. Strouse, P.E.
Branch Manager
Florida Registration No. 48220


David W. Springstead, P.E.
Engineer
Florida Registration No. 48229



SOURCE: 1958 BUSHNELL, FLORIDA USGS QUADRANGLE MAP

CENTRAL TESTING LABORATORY **ENGINEERING AND MATERIALS TESTING**



P.O. BOX 883
 FLORAL CITY, FLORIDA 32636
 (904) 726-6447

727 SOUTH 14th STREET
 LEESBURG, FLORIDA 34748
 (904) 787-1268

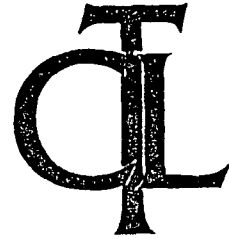
SITE LOCATION MAP
SUMTER COUNTY SOLID WASTE
MANAGEMENT FACILITY
SUMTERVILLE, SUMTER COUNTY, FLORIDA

Drawn By: TJS
 Checked By: DWS
 Date: DECEMBER 15, 1994

Job Number: 92-1100.003
 Sec. 22 Twp. 20S Rge. 22E
 FIGURE 1 OF 2

APPENDIX I

CENTRAL TESTING LABORATORY



ENGINEERING - MATERIALS TESTING - QUALITY CONTROL

LEESBURG - FLORAL CITY - OCALA

THE STANDARD PENETRATION TEST ASTM D 1586

The Standard Penetration Test, commonly called a soil boring, provides small soil samples and standard penetration resistances (blow counts) from selected depth intervals. The samples are used for soil classification and the penetration resistances provide a general indication of soil strength and density. All of this data is used to estimate soil bearing capacity and settlement.

The borings are advanced to the desired test depth by a dry rotary drilling process using a flight auger. When it becomes necessary, drilling mud is used. Drilling mud, in this application, is a mixture of clay and water with a specific gravity of 1.05 to 1.10. Drilling mud is heavier than water; consequently, the drilling mud prevents ground water from entering the bore and provides support to the walls of the bore, minimizing wall collapse.

The sampler is driven into the bottom of the boring with a 140 pound hammer dropping thirty (30) inches. The blows are counted for three (3) consecutive six (6) inch increments for a total of eighteen (18) inches. The first six (6) inches are to assure that the sampler is in undisturbed soil. The number of blows for the remaining twelve (12) inches is recorded and is termed the N value or blow counts. This is performed in each soil stratum, but at maximum intervals of five (5) feet.

This procedure gives an minimally disturbed sample that is classified by a technician, packaged in suitable containment, and transported to the laboratory. The samples are examined by an engineer or a geologist to verify the field classifications.

The boring data are shown as soil classifications and penetration resistances in blow counts. The symbols used to show the various soils encountered are explained in the legend accompanying the Boring Logs. The blow counts are shown as blow count(s) per six (6) inches of penetration, i.e. 22/6. The color of the soil is determined by using the Munsell Soil Color Charts and is given in code such as 10YR 6/3. This information is used to prepare Boring Logs as necessary.

MEMBER OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS

APPENDIX II

BORING LOG

BORING NO. 1

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 1

ELEV.: 99.8

DATE: 4-13-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 568' S, 899' E

BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 53.3

DEPTH OF COLLAPSE: NONE

ELEV DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
100 - 0	1/6 0/6 1/6 1/6 1/6 1/6 1/6 2/6 2/6 1/6 1/6 2/6 2/6 1/6 3/6 2/6 4/6	POORLY GRADED SANDS OR GRAVELLY SANDS LITTLE OR NO FINES	LIGHT GRAY 10YR 7/1 FINE SAND @ 1' VERY PALE BROWN 10YR 6/3 FINE SAND @ 3' VERY PALE BROWN 10YR 7/4 FINE SAND @ 4.5' YELLOW 10YR 7/6 FINE SAND @ 6' VERY PALE BROWN 10YR 7/4 FINE SAND @ 7.5' VERY PALE BROWN 10YR 8/3 FINE SAND @ 9' VERY PALE BROWN 10YR 7/3 FINE SAND
95 - 5			
90 - 10			
85 - 15	4/6 5/6 8/6		PALE BROWN 10YR 6/3 FINE SAND
80 - 20	7/6 7/6 11/6		
75 - 25	3/6 4/6 6/6		
70	4/6 4/6 7/6		
Boring Continues			

BORING LOG

BORING NO. 1

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 1

ELEV.: 99.8

DATE: 4-13-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 568' S, 899' E

BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 53.3

DEPTH OF COLLAPSE: NONE

ELEV DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
70 30			
65 35	3/6 6/6 9/6		YELLOW-BROWN 10YR 5/4 FINE SAND
60 40	13/6 13/6 11/6	SILTY-CLAYEY SANDS SAND-SILT-CLAY MIXES	WHITE 10YR 8/1 - 8/2 FINE CLAYEY SAND WITH SOME HIGHLY PLASTIC INC.
55 45	27/6 31/6 33/6		PALE BROWN 10YR 6/3 FINE SAND WITH WHITE 10YR 8/1 HIGH PLASTIC INCLUSIONS
50 50	7/6 8/6 10/6		
45 55	7/6 13/6 17/6	SILT AND LIMESTONE MIXED	WHITE 10YR 8/1 SILT WITH LIMESTONE
40 60	15/39 39/6 39/6	LIMESTONE	WHITE 10YR 8/1 LIMESTONE
	Boring Continues		

BORING LOG

BORING NO. 1

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 1

ELEV.: 99.8

DATE: 4-13-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 568' S, 899' E

BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 53.3

DEPTH OF COLLAPSE: NONE

ELEV DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
<div data-bbox="322 627 421 840"> 40 — 60 35 — 65 </div> <div data-bbox="470 627 636 840"> </div>			

BORING LOG

BORING NO. 2

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 2

ELEV.: 76.9

DATE: 4-12-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 1018' S, 966' E

BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 30.7

DEPTH OF COLLAPSE: NONE

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
DEPTH			
80			
75	1/6 2/6 2/6 1/6 1/6 1/6 0/6 1/6	POORLY GRADED SANDS OR GRAVELLY SANDS LITTLE OR NO FINES	DARK GRAY-BROWN 10YR 4/2 FINE SAND @ 1.5' LIGHT GRAY-BROWN 10YR 6/2 FINE SAND
5	1/6 1/6 1/6		@ 4.5' VERY PALE BROWN 10YR 7/3 FINE SAND
70	2/6 1/6 1/6 1/6 1/6 2/6		
10	2/6 1/6 2/6		@ 9' PALE BROWN 10YR 6/3 FINE SAND
65			
15	5/6 3/6 3/6		DARK BROWN 7.5YR 3/4 FINE SAND
60			
20	8/6 7/6 10/6	CLAYEY SANDS SAND-CLAY MIXES	WHITE 10YR 8/2 HIGHLY PLASTIC MIX OF SILTY, CLAYEY FINE SAND
55			
25	8/6 8/6 8/6 7/6 7/6		WHITE 10YR 8/1 - 8/2 HIGHLY PLASTIC MIX OF SILTY, CLAYEY FINE SAND
50			
	Boring Continues		

BORING LOG

BORING NO. 2

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 2

ELEV.: 76.9

DATE: 4-12-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 1018' S, 966' E

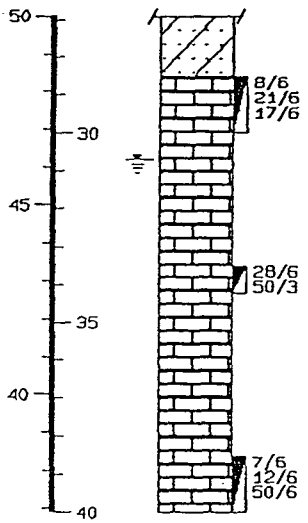
BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 30.7

DEPTH OF COLLAPSE: NONE

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
DEPTH			
50	 <p>Diagram of the boring log showing depth from 50 to 40 feet. The soil profile is represented by a vertical column with various patterns. A dashed line indicates the water level at 30.7 feet. Three sampler locations are marked with arrows and labels: 8/6, 21/6, 17/6 near the top; 28/6, 50/3 in the middle; and 7/6, 12/6, 50/6 near the bottom.</p>	LIMESTONE	WHITE 10YR 8/1 LIMESTONE WITH SOME SILT
30			
45			
35			WHITE 10YR 8/1 LIMESTONE
40			
40			

BORING NO. 3

BORING NO.: 3

ELEV.: 75.5

DATE: 4-9-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 611' S, 126' E

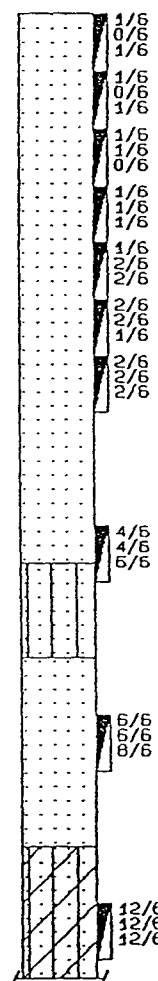
BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 30.0

DEPTH OF COLLAPSE: NONE

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
DEPTH			
80			
75		POORLY GRADED SANDS OR GRAVELLY SANDS LITTLE OR NO FINES	BROWN 10YR 5/3 FINE SAND @ 1.5' VERY PALE BROWN 10YR 7/3 FINE SAND @ 3' VERY PALE BROWN 10YR 7/4 FINE SAND @ 4.5' VERY PALE BROWN 10YR 8/3 FINE SAND @ 6' WHITE 10YR 8/2 FINE SAND @ 7.5' VERY PALE BROWN 10YR 8/3 FINE SAND @ 9' VERY PALE BROWN 10YR 7/3 FINE SAND
65			
60		SILTY SANDS SAND-SILT MIXES	VERY PALE BROWN 10YR 7/4 FINE SAND @ 14.5' LIGHT YELLOW- BROWN 10YR 6/4 SILTY, CLAYEY FINE SAND
55		POORLY GRADED SANDS OR GRAVELLY SANDS LITTLE OR NO FINES	WHITE 10YR 8/1 FINE SAND
50		SILTY-CLAYEY SANDS SAND-SILT-CLAY MIXES	YELLOW-BROWN 10YR 5/4, STRONG BROWN 7.5YR 5/6 SILTY FINE SAND WITH WHITE 10YR 8/1 HIGHLY.. PLASTIC INCLUSIONS
	Boring Continues		

BORING LOG

BORING NO. 3

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 3

ELEV.: 75.5

DATE: 4-9-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 611' S, 126' E

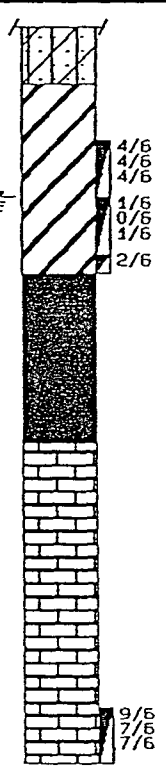
BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 30.0

DEPTH OF COLLAPSE: NONE

ELEV DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
50 45 30 45 35 40 35 45		<p>INORGANIC CLAYS OF HIGH PLASTICITY</p> <p>ZONE OF LITTLE OR NO BEARING</p> <p>LIMESTONE</p>	<p>WHITE 5Y 8/1 HIGHLY PLASTIC CLAY</p> <p>***** ROD DROPPED TO 36.5'</p> <p>WHITE 10YR 8/1 LIMESTONE</p> <p>WHITE 10YR 8/1 LIMESTONE WITH SOME SILT</p>

BORING LOG

BORING NO. 4

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 4

ELEV.: 93.2

DATE: 4-6-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 52° S; 520° E

BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 45.4

DEPTH OF COLLAPSE: NONE

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
DEPTH			
95			
0	1/6 2/6 1/6 2/6 1/6 1/6	POORLY GRADED SANDS OR GRAVELLY SANDS LITTLE OR NO FINES	VERY PALE BROWN 10YR 7/4 FINE SAND
90	1/6 1/6 1/6		
5	2/6 1/6 1/6		@ 4.5' VERY PALE BROWN 10YR 7/3 FINE SAND
	1/6 2/6 1/6		@ 6' VERY PALE BROWN 10YR 8/4 FINE SAND
85	2/6 2/6 2/6		@ 7.5' VERY PALE BROWN 10YR 7/3 FINE SAND
10	3/6 2/6 5/6		
80			
15	5/6 5/6 5/6		PALE BROWN 10YR 6/3 FINE SAND
75			
20	7/6 9/6 10/6		LIGHT YELLOW-BROWN 10YR 6/4 FINE SAND
70			
25	9/6 10/6 10/6		PALE BROWN 10YR 6/3 FINE SAND
65			
	Boring Continues		

BORING LOG

BORING NO. 4

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 4

ELEV.: 93.2

DATE: 4-6-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 52' S, 520' E

BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 45.4

DEPTH OF COLLAPSE: NONE

ELEV DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
65 30	6/6 6/6 7/6		LIGHT YELLOW-BROWN 10YR 6/4 FINE SAND
60 35	13/6 22/6 20/6		
55 40	21/6 23/6 26/6		
50 45	21/6 28/6 28/6	SILTY-CLAYEY SANDS SAND-SILT-CLAY MIXES	VERY PALE BROWN 10YR 7/4 AND WHITE 10YR 8/1 MIX OF SILTY, CLAYEY FINE SAND
45 50	15/6 19/6 15/6		WHITE 10YR 8/1, YELLOW 10YR 7/6 AND VERY PALE BROWN 10YR 7/3 MIX OF SILT, CLAY AND FINE SAND
40 55	10/6 25/6 20/6		VERY PALE BROWN 10YR 8/4 AND LIGHT BROWN-GRAY 10YR 6/4 MIX OF SILT, CLAY AND FINE SAND
35	Boring Continues		VERY PALE BROWN 10YR 8/4, LIGHT BROWN-GRAY 10YR 6/4, PALE BROWN

BORING LOG

BORING NO. 4

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 4

ELEV.: 93.2

DATE: 4-6-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 52' S, 520' E

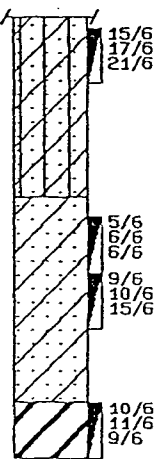
BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 45.4

DEPTH OF COLLAPSE: NONE

ELEV DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
35 60 30 65 25 70		<p>CLAYEY SANDS SAND-CLAY MIXES</p> <p>INORGANIC CLAYS OF HIGH PLASTICITY</p>	<p>10YR 6/3 AND WHITE 10YR 8/1 MIX OF SILT, CLAY AND FINE SAND</p> <p>WHITE 10YR 8/2 AND GRAY-BROWN 10YR 5/2 HIGHLY PLASTIC MIX OF SILT, CLAY AND FINE SAND</p> <p>PINK-GRAY 7.5YR 6/2 HIGHLY PLASTIC CLAY</p>

BORING LOG

BORING NO. 5

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 5

ELEV.: 60.3

DATE: 4-19-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 93' S. 1153' E

BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS

DEPTH TO - Water: 14.9

DEPTH OF COLLAPSE: NONE

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
DEPTH			
65			
60	1/6 2/6 1/6 2/6	POORLY GRADED SANDS OR GRAVELLY SANDS LITTLE OR NO FINES	BROWN 10YR 5/3 FINE SAND @ 1' VERY PALE BROWN 10YR 7/4 AND YELLOW- BROWN 10YR 5/4 FINE SAND
55	3/6 3/6 5/6 5/6 6/6 6/6 7/6	SILTY SANDS SAND-SILT MIXES	@ 3' YELLOW 10YR 7/6 AND WHITE 10YR 8/1 SLIGHTLY PLASTIC MIX OF SILT, CLAY AND FINE SAND
50	8/6 9/6 9/6 8/6 8/6 10/6	SILTY-CLAYEY SANDS SAND-SILT-CLAY MIXES	@ 4.5' WHITE 10YR 8/2 AND LIGHT YELLOW-BROWN 10YR 6/Y SLIGHTLY PLAS- TIC MIX OF SILT, CLAY AND FINE SAND
45	8/6 8/6 13/6 11/6 10/6	CLAYEY SANDS SAND-CLAY MIXES	@ 7.5' LIGHT YELLOW- BROWN 10YR 6/4 SLIGHTLY PLASTIC MIX OF SILT, CLAY AND FINE SAND
40	5/6 7/6 6/6	INORGANIC CLAYS OF HIGH PLASTICITY	@ 9' WHITE 10YR 8/2 PLASTIC MIX OF SILT, CLAY AND FINE SAND WHITE 10YR 8/1.5 HIGHLY PLASTIC MIX OF SILT, CLAY AND FINE SAND
35	2/6 0/6 1/6 1/6 2/6 5/6	SILT AND LIMESTONE MIXED LIMESTONE	@ 23.5' WHITE 10YR 8/1 SILT AND LIMESTONE @ 25' WHITE 10YR 8/1 LIMESTONE

Boring
Continues

BORING LOG

BORING NO. 5

PROJECT: SUMTER COUNTY SOLID WASTE FACILITY, SOUTH 40

BORING NO.: 5

ELEV.: 60.3

DATE: 4-19-1993

BORING LOCATION: FROM NW COR OF S 40 ACRES, APPROX. 93' S, 1153' E

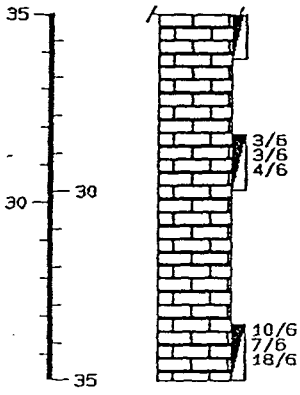
BORING METHOD: ASTM D 1586

DRILLER: J. WEBB / D. ALFORD

CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS


DEPTH TO - Water: 14.9


DEPTH OF COLLAPSE: NONE


ELEV	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	DETAILS
DEPTH			
35	 <p>3/6 3/6 4/6</p> <p>10/6 7/6 18/6</p>		
30			
35			


Legend:


Symbol: Description:

 POORLY GRADED SANDS
OR GRAVELLY SANDS
LITTLE OR NO FINES


 SILT AND LIMESTONE
MIXED


 CLAYEY SANDS
SAND-CLAY MIXES


 INORGANIC CLAYS OF
HIGH PLASTICITY


 STANDARD PENETRATION
TEST... 140 lb. HAM-
MER DROPPED 30".


Symbol: Description:

 SILTY-CLAYEY SANDS
SAND-SILT-CLAY MIXES

 LIMESTONE

 SILTY SANDS
SAND-SILT MIXES

 ZONE OF LITTLE OR NO
BEARING

 GROUNDWATER TABLE MEASURED
AT COMPLETION OF BORING

Notes:

1. BORINGS ADVANCED WITH A 4" CONTINUOUS FLIGHT AUGER.
2. ELEVATIONS REPORTED ON LOGS PROVIDED BY CLIENT.
3. THESE LOGS ARE SUBJECT TO THE LIMITATIONS, CONCLUSIONS, AND RECOMMENDATIONS IN THIS REPORT. DUE TO POSSIBLE VARIANCES IN THE SUBSURFACE BETWEEN THE LOCATIONS OF THE BORINGS, AND THE VARYING DEGREE OF DISTURBANCE, THE DESCRIPTIONS GIVEN ARE GOOD ONLY FOR THE MATERIALS REMOVED DURING THE CONSTRUCTION OF EACH BORING.
4. RELATIVE DENSITY (sand-silt)

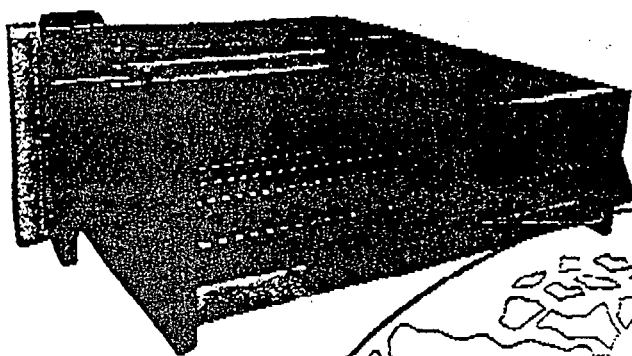
VERY LOOSE - Less than 4 blows/ft.	LOOSE - 4 to 10 blows/ft.
MEDIUM - 10 to 30 blows/ft.	DENSE - 30 to 50 blows/ft.
VERY DENSE - More than 50 blows/ft.	
5. CONSISTENCY (clay)

VERY SOFT - Less than 2 blows/ft.	SOFT - 2 to 4 blows/ft.
MEDIUM - 4 to 8 blows/ft.	STIFF - 8 to 15 blows/ft.
VERY STIFF - 15 to 30 blows/ft.	
HARD - More than 30 blows/ft.	
6. COLORS ARE DETERMINED BY USING THE MUNSELL SOIL COLOR CHART AND THE VALUES ARE GIVEN IN CODE SUCH AS 10YR 3/4.

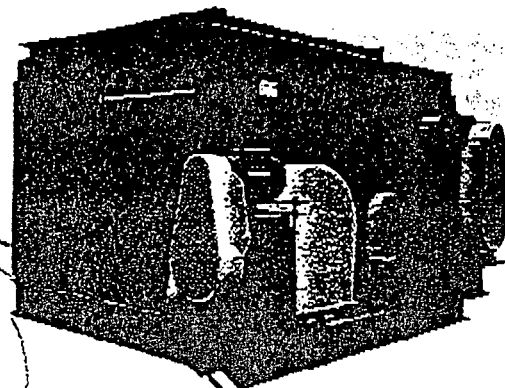
APPENDIX B

APPENDIX C

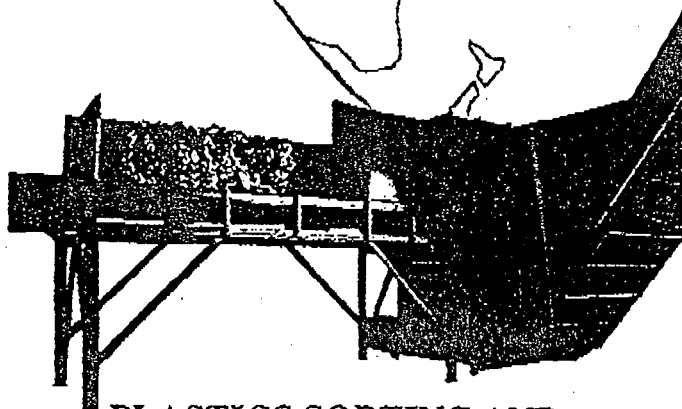
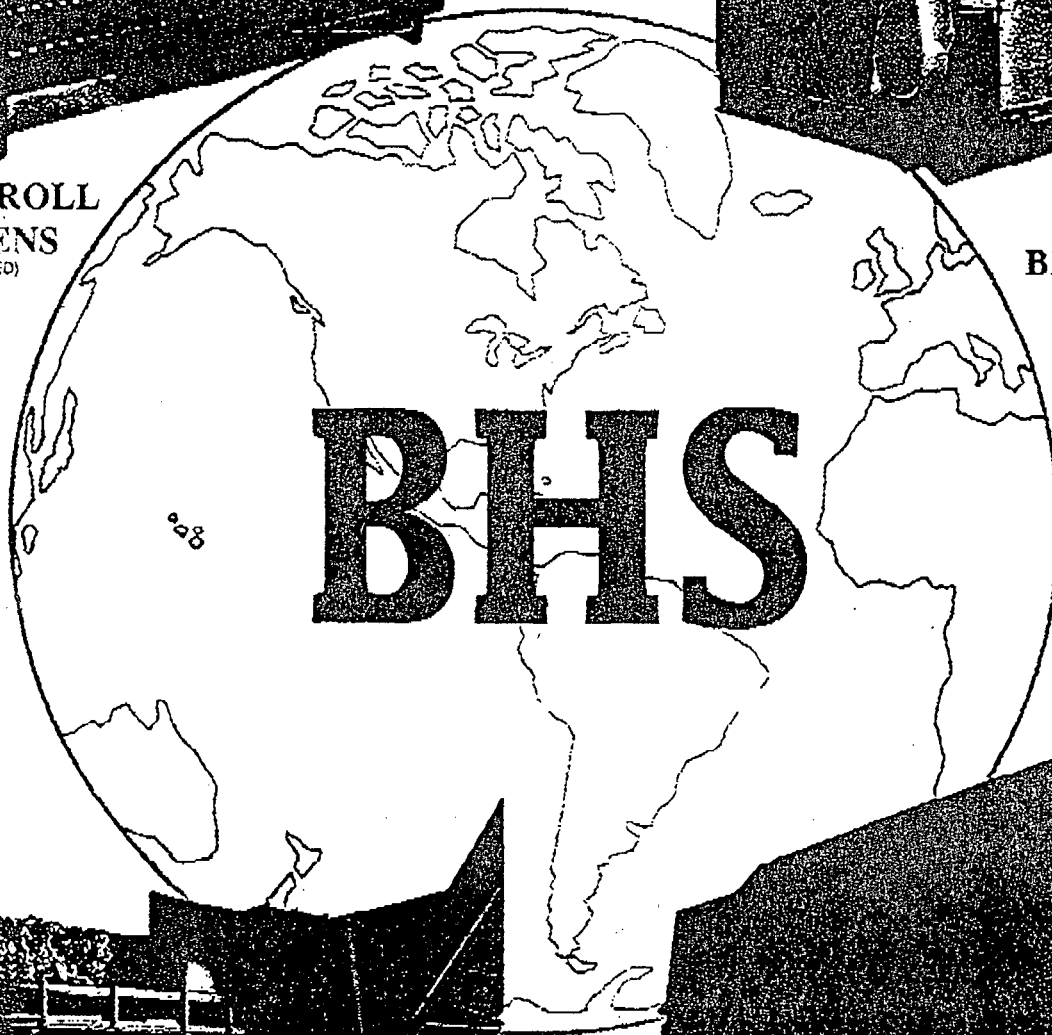
B.H.S. WASTE HANDLING COMPONENTS



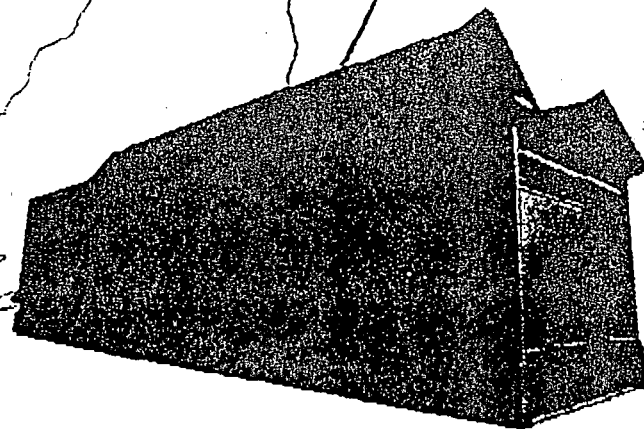
**DEBRIS ROLL
SCREENS**
(PATENTED)



**BAG
BREAKERS**
(PATENTED)



**PLASTICS SORTING AND
DEBALING SYSTEMS**



**OCC / PAPER
SORTING**
(PATENTED)



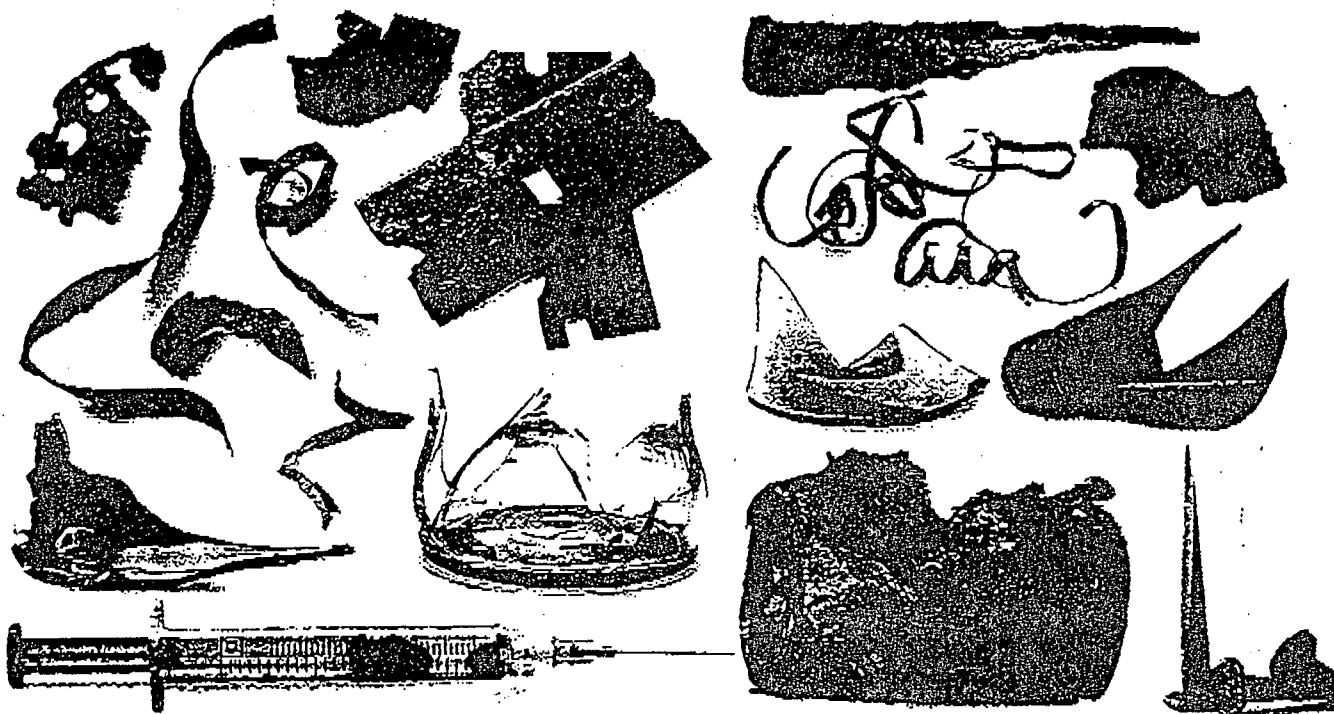
BULK HANDLING SYSTEMS, INC.

1040 Arrowsmith
(503) 485-0999

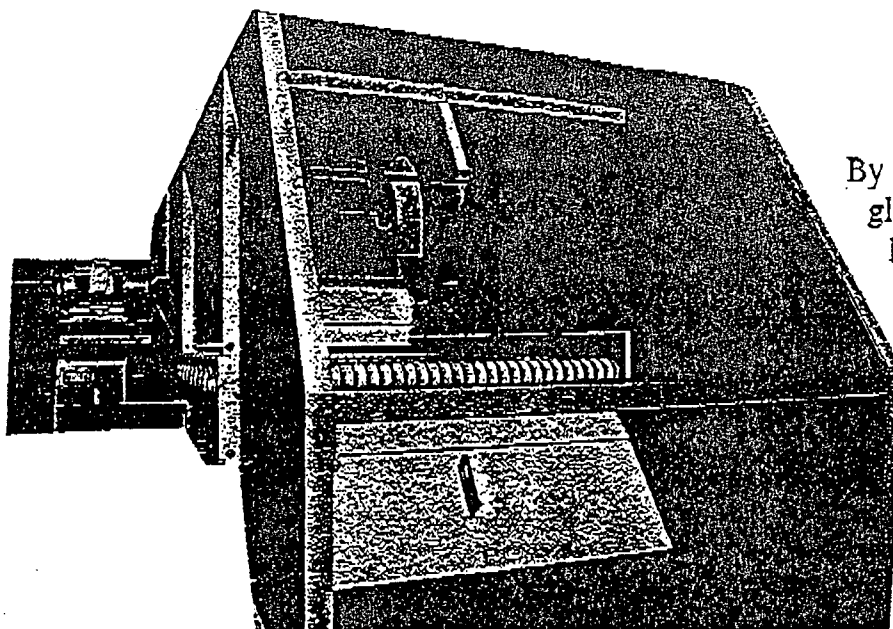
Eugene, OR 97402 U.S.A.

FAX (503) 485-6341

PRE-SORT SCREENING



This is why a **BHS DEBRIS ROLL SCREEN** is necessary prior to sorting.



By removing the 2" minus such as broken glass and needles, the pickers on the sort line become more efficient while creating a safer environment.

Your cross belt magnet will pick up the steel cans and larger steel and not the batteries, nails, razor blades, etc.

Baling can be accomplished with less clean-up.

BULK HANDLING SYSTEMS INC.

1040 Arrowsmith • Eugene, Oregon 97402

503/485-0999

Bulk Handling Systems Inc.

New Answers to Screening Problems With Specialized Roll Screens

Bulk Handling Systems Inc. of Eugene, Oregon, has been manufacturing roll screens for the past 18 years. This experience has led to the development of specialized roll screens which handle a wide range of materials. One basic machine could not meet the changing needs of the material handling industry. The most significant development in roll screen technology has been the BHS Debris Roll Screen (DRS).

Debris Roll Screen For C & D/MSW

One of the most common problems with the conventional roll screen design has been its susceptibility to jamming. The typical solution has been to install an anti-jam electrical control package. This has been a stop gap solution that has been received with mixed results. The real need has been for a roll screen that is not susceptible to jamming. The BHS Debris Roll Screen is the answer (patent pending).

The DRS is currently being used in a construction/demolition debris processing line. The material contains concrete chunks (up to 500 lbs), boards, rock, tree trunks, fence posts, wire, rope, pipe, dirt,

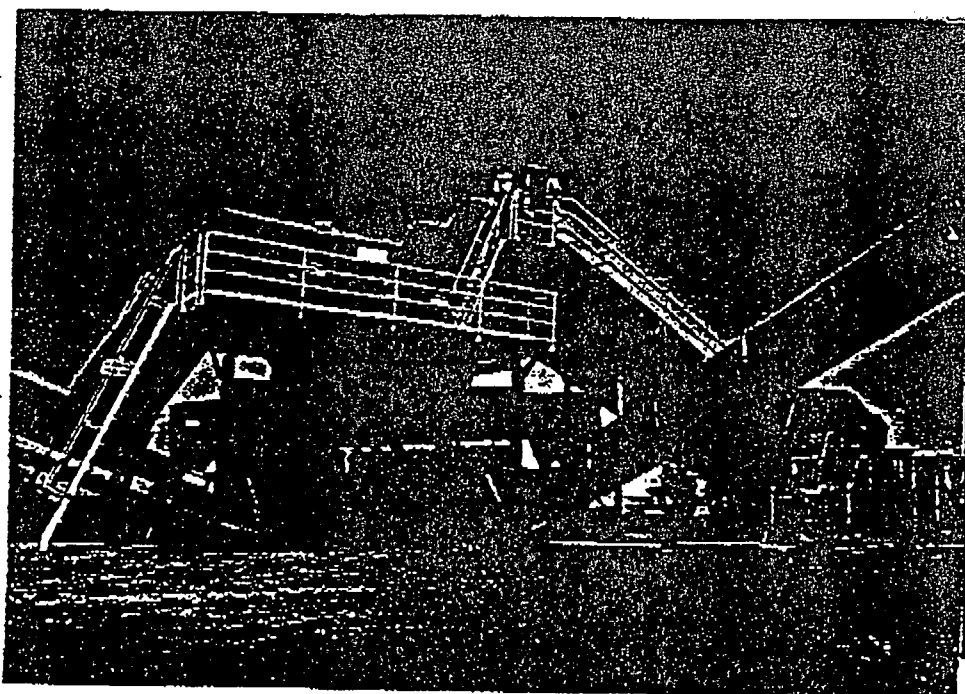
even the kitchen sink. This material would destroy most screens in a matter of minutes.

The screen is used to drop out 3" minus material. The overs pass onto a sorting line where clean wood, metals, plastic and other materials are picked off. It is necessary to remove the 3" minus debris to increase the efficiency of the manual sorting line. The 3" minus material is then converted into an aggregate product for base material.

The DRS is also installed in an MSW transfer station with manual

sorting lines. The screens are designed to drop out the 2" minus material which includes small batteries, broken glass, needles, and other small debris. Removing this material improves the efficiency and safety of the manual sorters.

The DRS is best suited for difficult material. Due to the non-jamming design of the screen, the material is subjected to a sifting action. This sifting action is similar to that of a vibrating screen. The DRS, however, does not vibrate or shake to produce this action. This would be an ideal unit for ash handling in



Yard Waste Screening System

mass burn facilities, landfill mining and other difficult to screen materials.

The screen has high capacity in a small package when compared to other types of screens. Support and foundation requirements are also minimized due to the compact nature of the screen. The BHS Debris Roll Screen delivers high performance for its size and price.

Debris Roll Screen For Biomass/Yard Waste

Because the basic roll screen design has the ability to handle a large volume of material in a compact machine, it is well suited for handling biomass materials including yard waste.

BHS has supplied many screens for handling residual wood products in the lumber, plywood, and pulp and paper industries. We also have several units screening the feed stock to biomass fired power plants. Durability and reliability

have long been a requirement of BHS screens.

There is a BHS screening system currently in operation screening yard waste. The system handles up to 50 TPH. The 4" minus material goes directly to composting. The oversized material is then processed into boiler fuel. The system is complete with a variable speed infeed conveyor, screen, outfeed conveyors and controls. It is skid mounted and is powered by a diesel driven electric generator.

Tire Shreds

BHS has also designed a roll screen for screening shredded tires. Again, the high capacity in a compact machine made the BHS screen the best choice for this application.

Due to our testing efforts, we have been successful in meeting the needs of the tire shredding industry by offering a better alternative to the conventional trommel screen.

We have been able to supply a more compact machine and produce a better product for our customers.

Compost/Fines

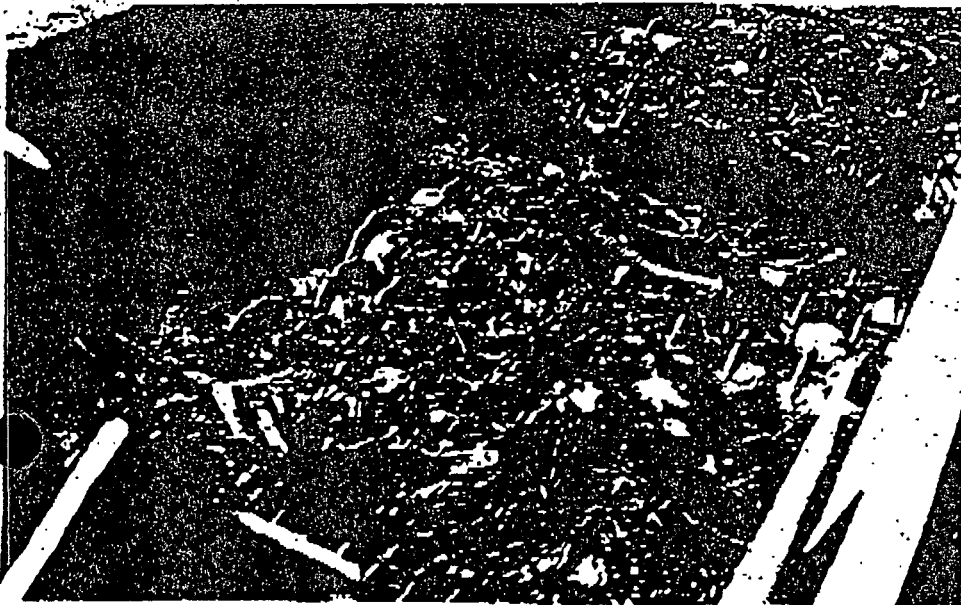
BHS has also produced fines roll screens for the lumber industry and biomass fired boiler plants. Our experience in fines screening with roll screens has given us the opportunity to offer this screen to the composting industry. The high capacity that can be built into a single screen is an obvious advantage in large composting operations.

Conclusion

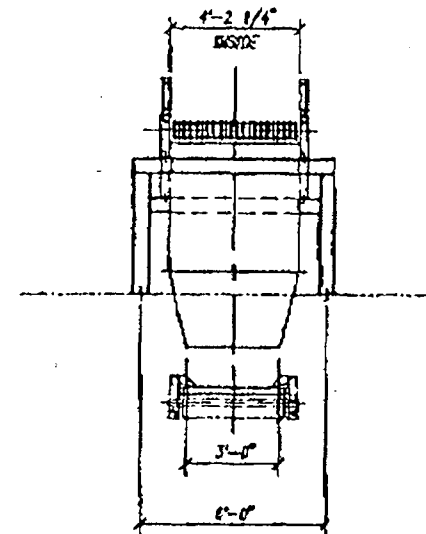
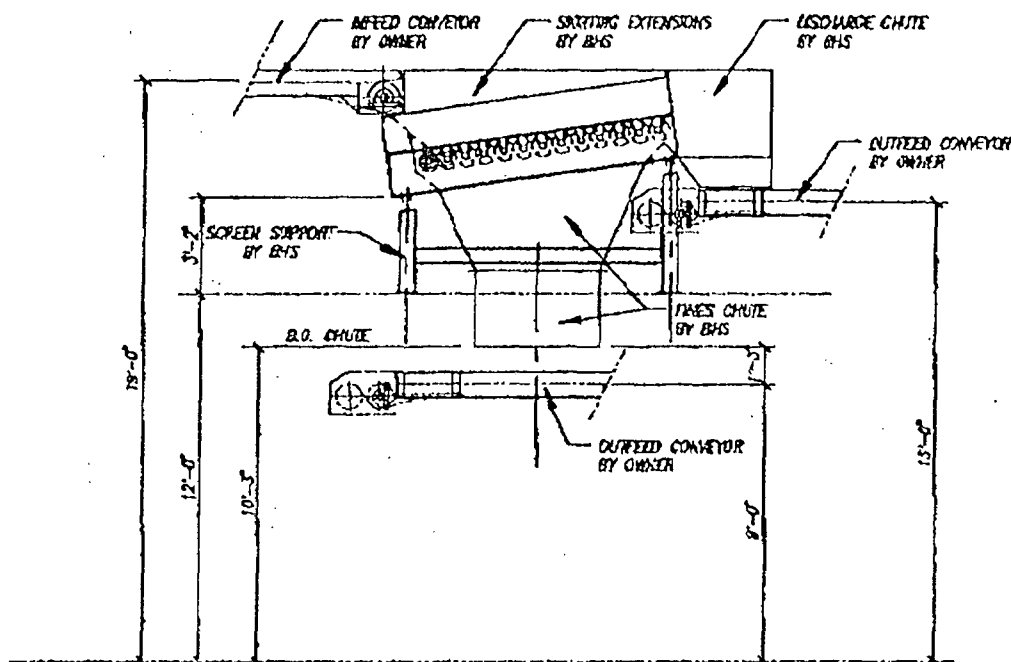
The BHS roll screen has been a work horse for many industries. Its inherent high capacity, smooth operation and low power consumption ensure that it will hold a place in screening applications.

The new designs developed by BHS have raised the state-of-the-art in roll screen manufacturing to new levels. Never before have roll screens been capable of successfully handling so many different types of materials. The non-jamming Debris Roll Screen has made this technology available to a wide range of industries and new applications.

The BHS line of screens may hold the answer to increasing your bottom line profits. Call BHS today for more information.



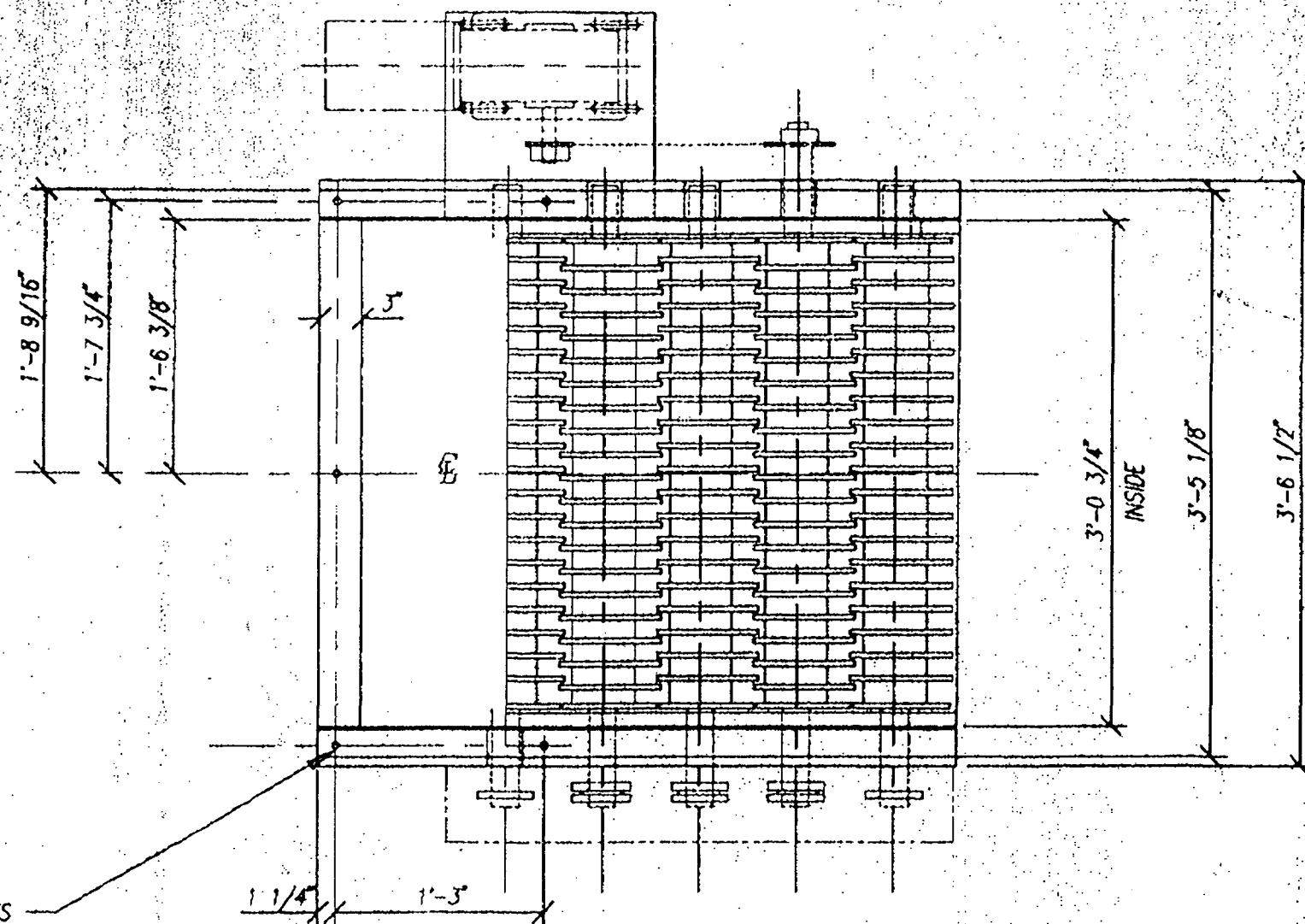
Tire Shred Screen



2	REVISED SUPPORT & CHUTES	AR	3/ 4/76		
1	REFERENCE ONLY	BKC	7-24-85		
REV	DESCRIPTION	DRN	DATE	APD	DATE
BULK HANDLING SYSTEMS, INC.			JOB NO.	P-4559	
1000 APPROVED - BULKING, OPTION 17-03 PHONE (800) 440-8800					
FOR: R.P.T.			DWG.	4559-2.0	
LOCATION: SUMTER CO. FLORIDA					
TITLE: M.S.W. SCREEN LAYOUT			SCALE: 1/4"=1'-0"		REV 2

CAD FILE: 4559\559-20CB

9/16" HOLES
(5) PLC'S



APPENDIX D

HAZARDOUS WASTE

INFORMATION

FOR

SUMTER COUNTY LANDFILL ~~VER~~ COUNTY LANDFILL

OPERATIONS PERSONNEL

C-103

SUMTER COUNTY LANDFILL SOLID WASTE FACILITY

EMPLOYEE HAZARDOUS WASTE HANDOUT

Gasoline and a source of ignition do not mix well. Neither do some types of waste, waste by-products, workers, and the environment.

WASTE ACCEPTANCE

The types of waste that can be accepted for processing or disposal are restricted by State rules and permit regulations.

Federal Guidelines and State Rules limit and/or control disposal of the following types of waste:

following types of waste:

liquids

solid waste containing free moisture*

hazardous waste

raw sewage sludge

animal manure

dead animals

septic tank pumpings

tires

*free moisture is defined as the liquid that will freely drain by gravity from a solid material.

The following wastes require special handling and when possible prior approval from supervisory personnel should be obtained when loads of these wastes are anticipated:

- liquids
- animal manure
- dead animals
- septic tank pumpings
- tires (when in volume loads)

Hazardous Waste

The solid waste facility cannot accept hazardous waste. ~~accept hazardous waste.~~

A waste is hazardous if it exhibits a characteristic listed below:

- ignitability (flash point less than 140° C)
- oxidizer
- corrosivity (ph less than 2 or greater than 12.5)
- reactive
- explosive
- toxic
- infectious
- radioactive

Wastes which have one or more of the above characteristics cannot be disposed of in a solid waste facility.

Some specific hazardous wastes which you may encounter that also cannot be accepted are as follows:

paint wastes (filters and sludges - may be ignitable or E.P. toxic)

glass grindings (typically from eyeglass manufacturing - may be E.P. toxic)

foundary sands (may be E.P. toxic)

cured or uncured resins and epoxies (may be flammable or toxic)

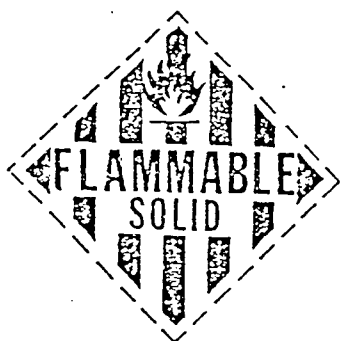
sludges (may be from gas and oil bottom cleaning or from electroplating operations, may be E.P. toxic)

Hazardous materials are often labeled. Operators should look for a label on containers indicating that the contained material was, or is, hazardous.

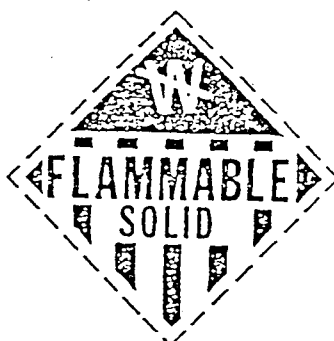
The following are diagrams of the placards which the Department of Transportation requires on all hazardous materials shipments. Any item in a container identified by these signs must be inspected and identified for hazardous content prior to acceptance:

TABLE OF PLACARDS AND APPLICABLE RESPONSE GUIDE PAGES

USE ONLY IF MATERIALS CANNOT BE SPECIFICALLY IDENTIFIED
THROUGH SHIPPING PAPERS OR MARKINGS.



Guide 38



Guide 41



Guide 47



Guide 52



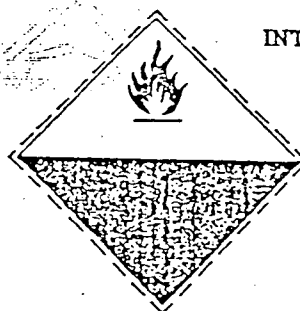
Guide 55



Guide 63

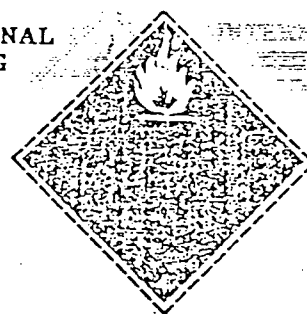


Guide 59



Guide 37

INTERNATIONAL
SHIPPING
ONLY



Guide 41

TABLE OF PLACARDS AND APPLICABLE RESPONSE GUIDE PAGES

TABLE OF

USE ONLY IF MATERIALS CANNOT BE SPECIFICALLY IDENTIFIED
THROUGH SHIPPING PAPERS OR MARKINGS.



Guide 11



Guide 46



Guide 46



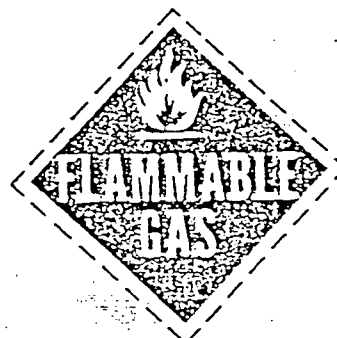
Guide



Guide 46



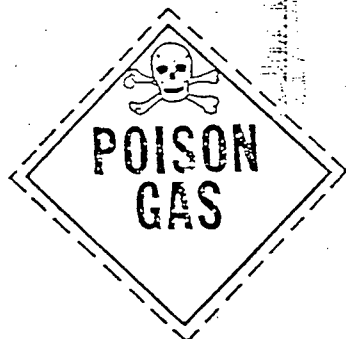
Guide 16



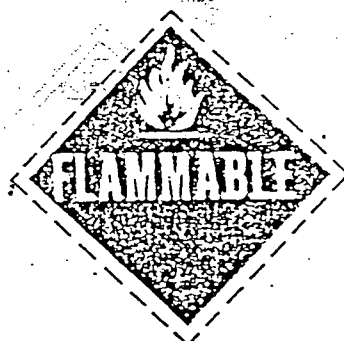
Guide 19



Gu



Guide 15



Guide 26



Guide 26



HAZARDOUS WASTE

Definition: Waste that cannot be handled by routine management techniques due to the potential harm to man or the environment.

Catagories: Flammables and explosives - can be set on fire, will flash to combustion, will support fire or flame.

Oxidizers - an element when combined with oxygen from open air or water will react. Once reaction begins, it is difficult to stop.

Corrosives and irritants - the destruction of materials or body parts by chemical action.

Poisons and toxics - having a destructive effect on humans or animals usually caused by chemicals or fumes and gases from ~~chemicals~~ and chemicals.

Infectious - capable of injury by disease, to cause infection of a disease, to spread a disease.

Radioactives - emitting invisible nuclear rays usually from a radioactive chemical element.

Nonhazardous Industrial Wastes - is defined as wastes from an industrial process, waste or off-spec chemicals, residuals from water and wastewater treatment, incineration residues, and other residuals from pollution control devices.

These materials must have a determination by the State of Florida, Department of Environmental Regulation as to hazardous or nonhazardous status prior to acceptance. Experience has taught solid waste professionals to insure the disposer is actually bringing in the material he says he is. Some method of positive identification of these wastes must be developed within

the regulator, disposer, and solid waste facility circle prior to acceptance of this type of waste.

Examples of materials which may be nonhazardous in certain instances are:

paint sludge

lime sludge

organic resins

ash

wood and paper mill wastes

foundry sand

food waste

Hazardous Waste Identification

The attendant must perform a thorough inspection of all incoming waste to prevent a potentially hazardous situation from developing at the solid waste facility building.

A few minutes of additional time may be needed to adequately perform a complete inspection of the load. Sometimes a supervisor will have to be called for assistance. The few minutes involved is well worth the extra time when the possible consequences of a hazardous event are considered.

The following items are the most common types of hazardous or potentially hazardous wastes the attendant and tipping floor operators will encounter.

PRODUCT TYPEPOTENTIAL HAZARD

Air fresheners and deodorizers

toxic, irritant

Bleach

corrosive, irritant

Car wax, polish

toxic, irritant

Disinfectants

corrosive, flammable, toxic, irritant

Drain cleaner

reactive, corrosive, irritant

Flea powder

toxic irritant

Floor cleaner/wax

toxic, flammable, irritant

Furniture polish

toxic, reactive, irritant

Oven cleaner

reactive, irritant

Paint thinner

toxic, flammable, irritant

Paints

flammable, irritant

Spot removers

corrosive, irritant

Toilet bowl cleaner

toxic, flammable, corrosive, irritant

Window cleaner

toxic, irritant

Wood stains/varnish

flammable, irritant

The above items will usually be thrown out in household trash and most containers you see will be empty and loose in the trash. Should these items be found on the tipping floor in shipping boxes, loose in the trash but in a small quantity of numbers, or many loose items in similar containers (boxes, bags, etc.) it is a matter of concern. Items grouped as described above should not be accepted.

The following items should be handled with extreme caution and should under no circumstances be accepted:

<u>PRODUCT</u>	<u>INGREDIENTS</u> (may/may not be on label)	<u>POTENTIAL HAZARD</u>
Ammunition	blackpowder, primer	explosive
Antifreeze	Ethylene glycol, methanol	toxic
Auto batteries	sulphuric acid, lead	toxic, reactive & corrosive
Concentrated windshield washer solution	methyl alcohol	toxic
Carburetor cleaner, engine degreaser	petroleum distillates	flammable
Insulation, pipe wrappings	asbestos	carcinogen
Herbicides (see label for: 2, 4, D; 2, 4, 5-T; 2, 4, 5-TP; Silvex, MCPA; MCPB)	chlorinated phenoxys	toxic, irritant
Lighter fluid, lamp oil	petroleum, hydrocarbons (benzene)	flammable
Motor oil, gasoline	petroleum, hydrocarbons (benzene)	flammable
Pesticides (see label for: Aldocarb, Oxamyl, Carbofuran, Methyomyl, Sectran, Propoxur, Carbaryl, Sevin)	lead	flammable
Pesticides (see label for: Edrin, Aldrin, Dieldrin, Toxaphene, Lindane, Benzene, Hexachloride, DDT, Heptachlor, Chlordane, Mirex, Methoxychlor)	carbamates group	toxic
Pesticides (see label for: Phorate, Mevinphos, Demeton, Disulfotam, Parathion, Diazinon, Trichlorfon, Ronnel, Azinphosmethyl)	chlorinated hydrocarbons group	toxic
Propane cylinders, butane lighters, cylinders	Organophosphates group	toxic
Swimming pool acid	petroleum distillates	flammable
Swimming pool chlorine	hydrochloric acid	reactive, corrosive
Infectious waste	sodium hypochlorite	reactive, corrosive
Radioactive waste	pathogens	infectious
	radioactive isotopes	carcinogenic

Hazardous Waste Separation

Hazardous wastes which may be disposed of with domestic or light industrial solid waste can be separated into five (5) major categories for identification purposes:

- | | |
|----------------------------|--|
| 1. explosives: | organic solvents, ammunition, oil,
gasoline, propane |
| 2. corrosive and reactive: | acids and bases |
| 3. toxic: | asbestos, toxic metals, organic
solvents, pesticides and poisons,
herbicides |
| 4. infectious: | pathogenic |
| 5. radioactive | radio isotopes |

When hazardous materials are discovered in the waste stream at solid waste facilities, operators should separate the following general groups of substances from one another and insure temporary storage facilities adequately achieve separation:

Asbestos - do not crush bag or container

Toxic metals - i.e. mercury (switches and thermometers)

arsenic

lead

cadmium

most batteries

Organic solvents (i.e.)

cleaning fluids

polishes

rust remover

dyes

contact and other cements

glues

fingernail polish and remover

paints, including wood preservatives

thinners

degreasers

antifreeze, coolants

propane tanks

butane tanks

methyl alcohol

auto body filler

fluorescent lamp ballast (PCB)

Acids (i.e.)

- drain cleaners
- tub and tile cleaners
- toilet bowl cleaners
- muratic acid (swimming pool and masonry work)
- used auto batteries
- hydrofluoric acid
- sulfuric acid
- phosphoric acid
- chlorine - bleaches - never mix with ammonia

Bases (i.e.)

- lye (sodium hydroxide)
- oven cleaners
- drain cleaners
- ammonia - never mix with chlorine or bleaches
- ammonium nitrate

Pesticides and Poisons (i.e.)

- soil fumigants
- nematicides
- farm, garden, and agricultural insecticides
- fungicides

Herbicides (i.e.)

- weed killers
- vegetative control products
- water weed killers

Infectious wastes (i.e.)

- hospital wastes (red bag waste)
- nursing home wastes
- clinical wastes

Radioactive wastes (i.e.)

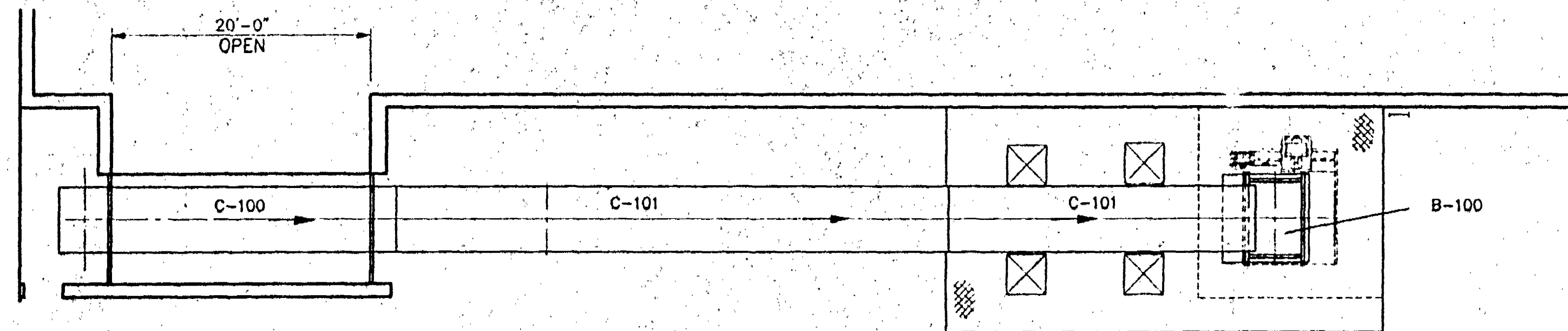
- camping lantern mantles (thorium)
- used smoke detectors (ionization type)
- some military equipment
- hospital and clinical x-ray wastes

Operators must insure that materials of a hazardous nature are not allowed to be left at the solid waste facility by customers. Make them load it up and take it with them. A good policy is to get the vehicle license number and a description of the vehicle and report to a supervisor with details of hazardous materials attempted to be disposed.

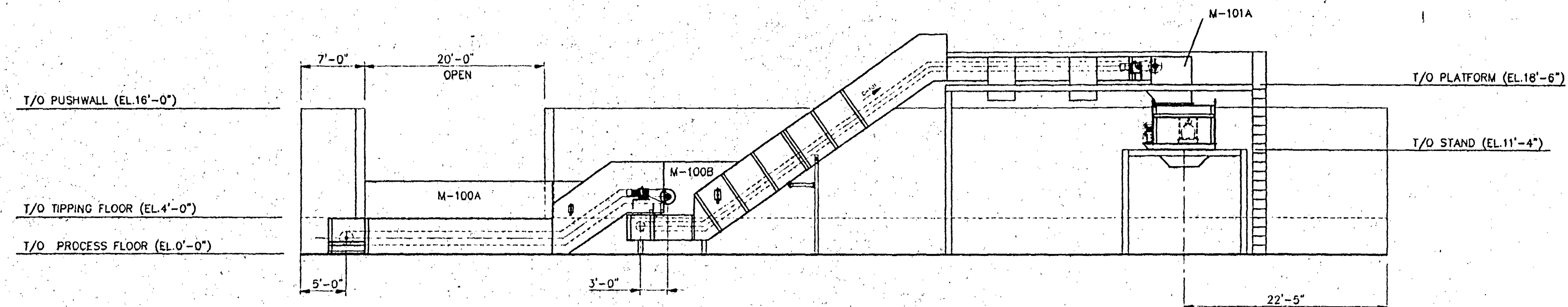
APPENDIX E

C-100
 LENGTH = 24'-0" HOR / 8'-0" INCL. / 5'-0" HOR.
 ANGLE = 35°
 MOTOR POSITION = RH SIDE
 SKIRT HEIGHT = 1'-5" HOR. / 3'-0" INCL. / 3'-0" HOR.

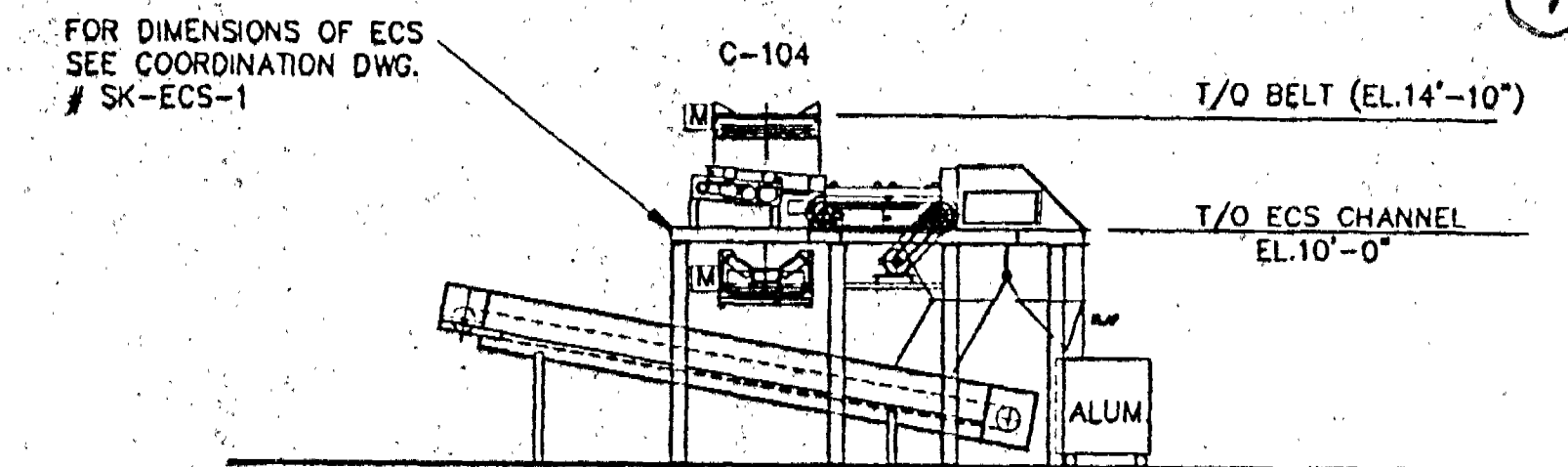
C-101
 LENGTH = 7'-0" HOR / 30'-4" INCL. / 25'-0" HOR.
 ANGLE = 35°
 MOTOR POSITION = RH SIDE
 SKIRT HEIGHT = 9" HOR. / 3'-0" INCL. / 6" HOR.



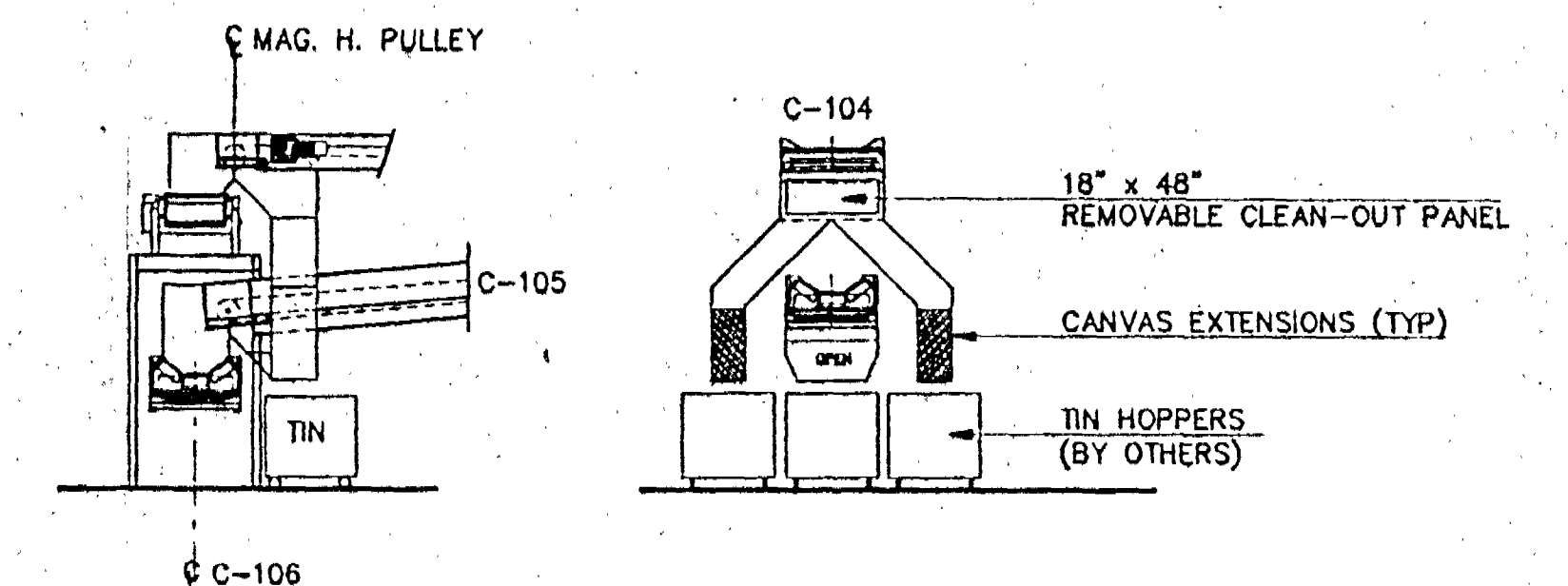
PARTIAL PLAN VIEW



SECTION THRU IN-FEED



SECTION THRU ECS



SECTION @ MAG. H. PULLEYS

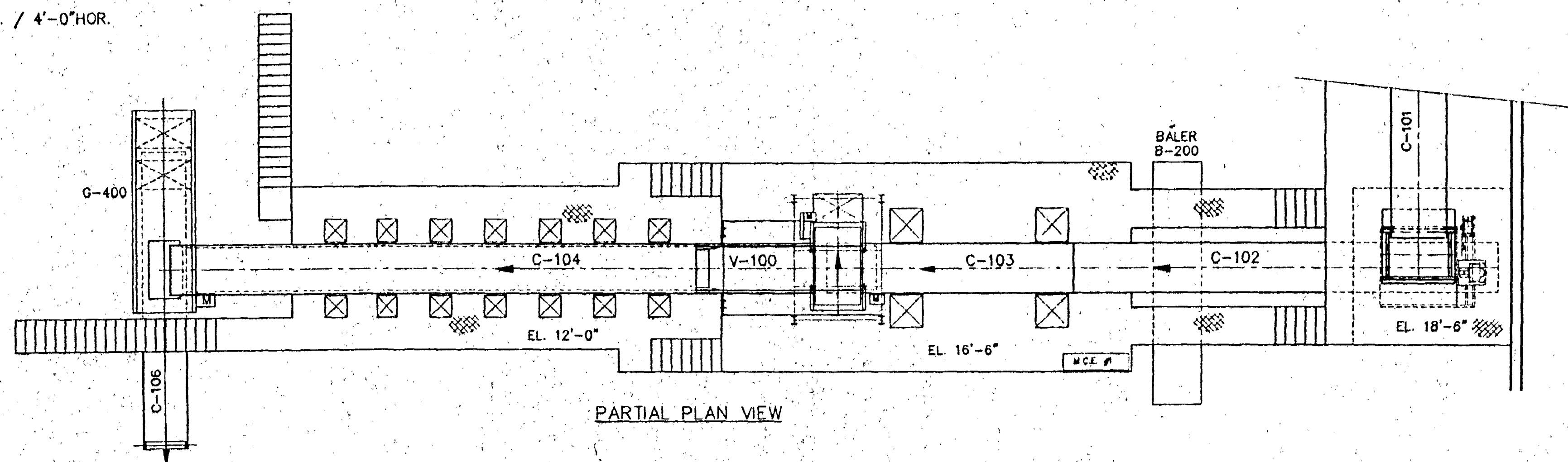
C-102
 LENGTH = 12'-0" HOR / 24'-7" INCL. / 4'-0" HOR.
 ANGLE = 35°
 MOTOR POSITION = RH SIDE
 SKIRT HEIGHT = 18" CONTINUOUS

C-103
 LENGTH = 26'-0" C/C PULLEYS
 MOTOR POSITION = LH SIDE
 SKIRT HEIGHT = 6" CONTINUOUS
 PICKING STYLE

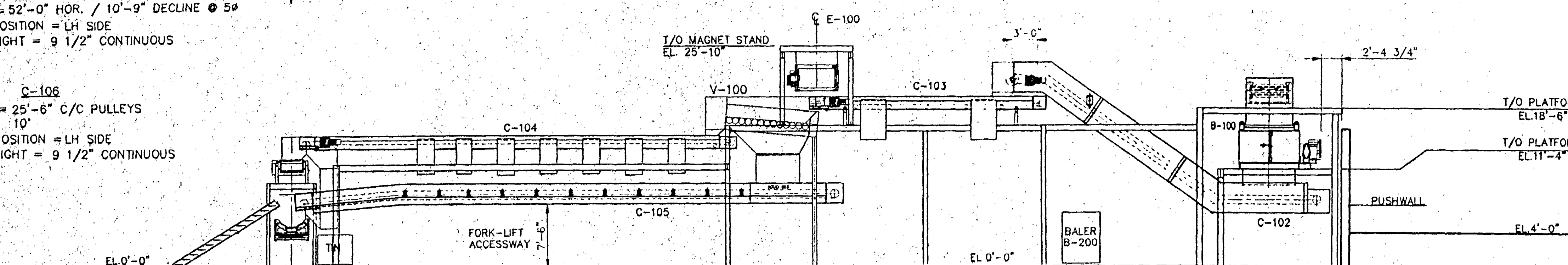
C-104
 LENGTH = 50'-0" C/C PULLEYS
 MOTOR POSITION = LH SIDE
 SKIRT HEIGHT = 6" CONTINUOUS
 PICKING STYLE

C-105
 LENGTH = 52'-0" HOR. / 10'-9" DECLINE @ 5°
 MOTOR POSITION = LH SIDE
 SKIRT HEIGHT = 9 1/2" CONTINUOUS

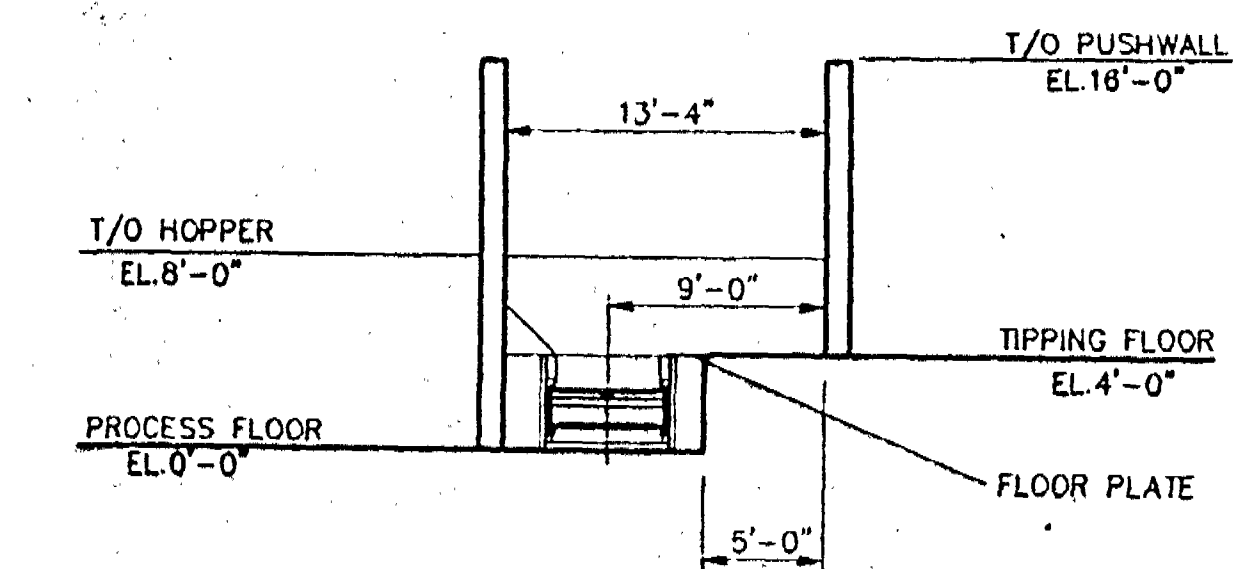
C-106
 LENGTH = 25'-6" C/C PULLEYS
 ANGLE = 10°
 MOTOR POSITION = LH SIDE
 SKIRT HEIGHT = 9 1/2" CONTINUOUS



PARTIAL PLAN VIEW



SECTION THRU MAIN SORTING AREA

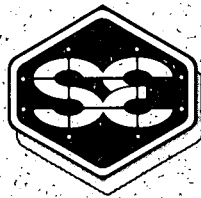


SECTION THRU CONVEYOR C-100 IN-FEED

FOR REVIEW ONLY - 1-26-96 (REVISED)
 RE-ISSUED FOR REVIEW - 1-31-96

		RRT DESIGN & CONSTRUCTION CORPORATION	
		SUMTER COUNTY PROCESSING, RECYCLING AND COMPOSTING FACILITY	
MATERIAL RECOVERY PROCESS EQUIPMENT SECTIONS		PROJECT NO. 535-001 SCALE: 1/8" = 1'-0"	
REV	DESCRIPTION	DATE	BY
1	FOR REVIEW ONLY - 1-26-96 (REVISED)	1-26-96	KR
2	RE-ISSUED FOR REVIEW - 1-31-96	1-31-96	KR
THIS DOCUMENT IS PROPERTY OF RRT DESIGN & CONSTRUCTION CORP. AND CONTAINS CONFIDENTIAL INFORMATION. ANY REPRODUCTION OR UNAUTHORIZED USE WITHOUT WRITTEN CONSENT OF RRT DESIGN & CONSTRUCTION CORP. WILL BE SUBJECT TO PROSECUTION.		DRAWN	DATE
RRT Design & Construction Corp. A Subsidiary of Waste Management, Inc. 100 Baylis Road Melville, N.Y. 11747		CHECKED	1-16-96
		DESIGNED	1-16-96
		APPROVED	
		DWG. NO.	535-001-102
		SHEET SIZE	24 x 36
		REV	

FEB 22 1996



**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
REQUEST FOR ADDITIONAL INFORMATION**

**COMPOSTING FACILITY EXPANSION
PENDING PERMIT NO. SC60-263199, SUMTER COUNTY
SUMTER COUNTY, FLORIDA**

PREPARED FOR:



**SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS
DEPARTMENT OF PUBLIC WORKS
222 EAST MCCOLLUM AVENUE
BUSHNELL, FLORIDA 33513**

May, 1995

921100.003

Springstead Engineering, inc.

Consulting Engineers — Planners — Surveyors

727 South 14th Street

Leesburg, Florida 34748

Lake (904) 787-1414

Sumter (904) 793-3639

Fax (904) 787-7221

File



**Springstead
Engineering, Inc.**

Consulting Engineers — Planners — Surveyors

727 South 14th Street
Leesburg, Florida 34748

May 11, 1995

Lake (904) 787-1414
Sumter (904) 793-3639
Fax (904) 787-7221

Ms. Susan J. Pelz, E.I.
Florida Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

RECEIVED
MAY 12 1995

RE: **COMPOSTING FACILITY EXPANSION
PENDING PERMIT NO. SC60-263199, SUMTER COUNTY
921100.003**

Department of Environmental Protection
SOUTHWEST DISTRICT
BY _____

Dear Ms. Pelz:

We are in receipt of your Request for Additional Information (RAI) letter of February 10, 1995 please find the following responses:

1. Several of the responses provided indicate that some information "will be submitted" at a later time, and that the drawings and reports provided are "preliminary", "not for construction", and "subject to revision". Please be advised that the Department requires construction plans and specifications for review. "Preliminary" or "permitting" plans or designs are not acceptable. The Department recognizes that contractors or manufacturers may provide shop drawings for specific systems, e.g., the conveyor system, after the contract is awarded. However, the Department cannot approve "preliminary" or "conceptual" plans or designs. Please provide complete construction designs, plans, technical specifications and supporting information for the proposed construction.
1. **The drawings submitted with the last request for additional information are the plans which are intended to be used for construction. The indications that the information was preliminary is an attempt to clarify all of the Departments requests for changes and include these clarifications on the final plans to be sent for bid.**
2. The information submitted states, "The moisture control by spraying will be performed by two methods. The first method is to apply moisture... during the turning of the material wit the Scarab. The second method will be to wet the compost material with a low pressure hose attached to a water supply truck. The hose will not spray water on the compost windrows in manner which will create aerosols." (page 2 #4) The Scarab manufacturer's information does not indicate that a spray system is included with a scarab. Please explain how moisture will be added "during the turning of material with the Scarab." Please provide manufacturer's specifications for the water truck which will be used. Please verify that the truck has sufficient clearance for maneuvering inside the building. The Department understands that one consideration in the development of the indoor composting operation was moisture control. Please explain how the amount of moisture will be controlled if the amount of water/leachate added to the piles is not known. Since a truck loadout system does not currently exists at the site, please explain how leachate will be loaded into the water truck.

2. A tank is mounted on the SCARAB which is filled with water and piped onto the compost while turning of the windrow is being performed. Moisture content testing at various locations in the windrows will be performed to determine how much moisture needs to be added to bring the composting material to optimum moisture content. The volume of water needed to bring the compost to optimum will be added via the SCARAB tank or using the water truck if large volumes are necessary. It is anticipated that an existing water truck owned by the County will be used to provide the water for composting. The truck will be able to maneuver inside the proposed building.
3. The information submitted states, "The Yellomine pipe from the existing recirculation system will be connected to a single fill location instead of a header. The connection details are presented in Detail C on Figure 6." (page 2, #6.) However, Figure 6" (Sheet 6 of 13) does not show a "Detail C". Sheet 6 of 13 shows the single leachate hose bibb. However, it is not clear how this is connected to the existing leachate recirculation system. Sheet 8 of 13 does not show a pump in the line from the existing recirculation system to the recirculation system details.
3. There is no Detail C shown on Sheet 6/13. The statement in the 2/10/95 response is incorrect. The information concerning the hose bibb is, however, shown on Sheet 6/13 as you have noted. As described in reply to question 6C of the 2/10/95 response the pump used for pumping leachate will be the existing pump used to spray the exterior composting pads.
4. The information submitted states, "The screens will consist of wire mesh with a minimum opening of approximately one inch. Details will be submitted as shop drawings by the contractor to be approved by the Owner." (page 2, #7.) Please clarify if the openings will be a minimum or maximum of one inch.
4. As the Department has noted, the wire mesh will have a maximum opening of 1 inch.
5. The information submitted states, "The details [of the fluff conveyor] are presented in Figure 11. At this time, we are investigating the possibility of transporting the fluff... Via a closed-pipe hydropneumatic transport process. Details of this system will be forwarded to the Department as soon as the viability of the process is confirmed." (page 3, #9.) "If the conveyor system is used, litter control will consist of installing a mesh net around the conveyor system... on the walkway..." (page 4, #14.b.) The details on sheet 11 of 13 do not appear to be sufficient for construction, e.g., the height is not provided, the foundation is noted "as required" bracing calculations to ensure the stability of the system are not provided, etc. Details on the "mesh net" and the "walkway" are not provided. The department understands that the feasibility of an enclosed hydro-pneumatic conveyor system is being investigated. However the Department cannot expedite the permitting process without sufficient information. Please provide information concerning the hydro-pneumatic conveyor system, the proposed belt conveyor and associated litter and

leachate controls, or provide a schedule for the submittal of this information. Please see comment #1 above.

5. **As discussed in a telephone conversation on April 26, 1995, the County is planning at this time to construct a new Materials Recovery Facility in a portion of the proposed composting building. No outside conveyance of fluff will take place at the facility. Please see the comments presented after the response section of this letter.**
6. The information submitted states, "Methods and records for combining windrows will be kept in the same manner as is currently being performed. At this time based on the inflow of the facility, the exposed composting pads will not be used... unless extremely heavy inflow is experienced..." (page 5, #14.d.) If the outdoor composting pads are used, how will moisture be controlled? Since it takes 4 days to form a row and 60 days to complete the composting process, and the building accommodates 16 rows (when only 15 [60/4] rows are required), it seems that rows will not be required to be combined. Please explain how rows which were formed at different times (e.g. 20 days apart) can be combined and accurate records (quantity of material, age of row) continue to be maintained. Is the addition of new material to an existing row which is at some stage in the composting process, counter-productive to the composting process of that row?
6. **If outdoor composting is necessary at the facility, the moisture of the windrows will be controlled as it currently is, and the weather will most likely necessitate additional time for composting due to excessive moisture. In reference to combining rows, it is not anticipated that combining rows will be necessary after the facility becomes fully operational. The combining of rows will be performed during the initial loading of the pad with the cell material.**
7. The information submitted states, "The compost will be temporarily stored in piles as shown in Figure 6. The maximum time of storage will be... More than half of the compost stored at the facility will be used or sold for use within each year." (page 6, #14.g.) Please explain the specific procedures for recording and designating the production date for each compost pile which is stored in the finished compost building. Will compost piles be combined after testing? If piles are combined, how will the quantity produced and removed, and production/removal date records, be maintained to verify that more than half of the compost is removed each year and that compost remaining for the facility for three years has been removed?
7. **It is not anticipated that finished compost will be stored on-site for over 6 months. The compost will be placed into a pile upon finishing, testing and removal from the facility, and will be isolated from compost being processed. The compost will be stored, tested and removed from the facility as required by Chapter 62-709.**
8. The information submitted states, "The recommendations presented in the soils report are not intended to be comprehensive construction recommendations." (page 7, #17.b.) Since the application is for the construction of a solid waste management facility, please

explain when the "comprehensive construction recommendations" are expected to be submitted. See comment #1 above.

8. The specification for site work, which will be provided for the bidding of the project, will include the comprehensive construction recommendations. The specifications will include detailed general information (site work, grading, compaction, testing, formwork, finishing, etc.) necessary for construction.
9. The information submitted states, "The width of the bays were designed using the turning radius of the 20-foot Scarab as the control." (page 8, #3) Sheet 7 of 13 indicates that columns exist 25 feet from the north and south ends of the building. Sheet 6 of 13 indicates that a 35-foot turning lane is available. The Scarab information indicates that a 35-foot turning radius is required. Please clarify how the Scarab will maneuver around the columns (as shown on Sheet 7 of 13) at the ends of the building. The Department is aware that a purchase order for the Scarab was issued December 13, 1995. Please update the Department on the status of the Scarab.
9. As discussed in our informal meeting of March 14, 1995, the compost windrows will be placed between the 60' long lateral bays as shown on Sheet 11/13. The SCARAB will process half of the building, one bay at the time, i.e., the SCARAB will begin at one side of the building, in the middle of the long direction of the building, process one row of one bay, turn around in the 35' wide space at the end of the bay, and process the other row in the bay and return to the middle of the building to turn to the next bay.

The SCARAB was delivered to the site on March 1, 1995 and is currently being used.

10. The information submitted states, "The lift station detail is the 4-foot diameter wetwell shown on Figure 12. The diameter is shown incorrectly on Figure 12. It should show a diameter of 48". (page 9, #4.a.) Please provide a revised Sheet 12 of 13 which shows this correction.
10. Sheet 12/13 has been corrected and is attached.
11. The information submitted states, "The HDPE pipe will be installed at a depth of 30 to 36 inches below the proposed finished grades, which do not change." (page 9, #6.a.) Please provide a revised Sheet 8 of 13 which specifies the finished grade for the HDPE pipe.
11. Sheet 8/13 has been corrected and is attached.
12. The information submitted states, "The pump used for pumping the leachate from the existing leachate storage pond to the composting building is the same pump used to spray exterior compost pads. Please see the leachate management system report for the existing facility for details of the pumping systems." (page 10, #6.c.) Since several "leachate management system" reports exist, please provide the specific title and date of the report referred to. Do the calculations for the existing leachate spray system include

losses for the additional piping and appurtenances for the proposed construction? Please verify that the existing pump and piping are adequate for the proposed service.

12. **The report referred to was the "Leachate Recirculation Report" dated 10/2/92 and the Leachate Recirculation As-Built plans dated June 6, 1993.**
13. The information submitted states, "A copy of the water system plans currently being reviewed by FDEP are attached." (page 10, #8.b.) The Department's request of January 13, 1995, was for "construction details for all piping systems", and Note #5.c. on Sheet 10 of 13 refers to water supply systems. The plans submitted are for stormwater management system modifications. Please clarify to what section (e.g., potable water, environmental resource management, etc.) of FDEP the stormwater system modification plans were submitted for review. Since a SWFWMD permit exists at the site, it seems that stormwater system modifications would require SWFWMD approval.
13. **A full set of plans showing the requested piping system are attached. In addition, a copy of the SWFWMD MSSW Permit is attached for your review.**
14. The information submitted states, "No reclaimed water will be used on this project..." (page 10 #6.c.) Please provide a revised Sheet 10 of 13 which deletes this, and any other references, which are not specifically applicable to this project.
14. **Sheet 10/13 has been corrected and is attached.**
15. The information submitted states, "The ditch bottom inlet locations are shown in the composting building schematic presented in Figure 6." (page 11, #11.a.) However, the ditch bottom inlets are neither noted nor referenced to a specific detail on Sheet 13 of 13. Please provide a revised Sheet 6 of 13 which notes the ditch bottom inlets and references the detail on Sheet 13 of 13.
15. **Sheet 6/13 has been corrected and is attached.**
16. The information submitted states, "The distance to the Z-girt should read 16 feet." (page 12, #11.b.) Please provide a revised Sheet 13 of 13 which indicates the correct height.
16. **Sheet 13/13 has been corrected and is attached.**
17. Please clarify the following information submitted in **Appendix A-Water Balance**:
 - a. The information states, "Ponds collecting stormwater runoff... will be the leachate pond and the north sump." However, response #5 above indicates that the south sump will be used.

- a. The south sump is correct. This information has been corrected on an updated water balance presented in Appendix A. It is not anticipated that the north sump will be used to collect leachate.
- b. If the existing compost pads will continue to be used, is the capacity of the leachate holding pond and the south sump adequate for the quantity of leachate which will be generated? If use of the north sump will be discontinued, how will the pond be taken out of service? Will the liner be removed?
- b. The volume of the existing leachate pond is adequate for the leachate which will be generated from the proposed facility, and the water generated from all three existing ponds and pads, if they should be used. It is unknown at this time what will be done with the existing site pads and ponds which will not be utilized in the proposed facility.
- c. Precipitation (P) = 0.3 inches per day and evaporation (E) = 0.163 per day. Please explain the source of this data. It appears that 54% ($0.163/0.3 = 54\%$) of all precipitation is evaporated. The Department is very interested in what method may be used to evaporate 54% of precipitation. If the precipitation is based on 18 inches of rain in 60 days, is the evaporation rate based on the same 60-day period?
- c. The rainfall and evaporation data is correct as presented. Based on the data presented in the "Climatological Data Annual Summary for Florida" as compiled by the US Department of Commerce, National Oceanic and Atmospheric Administration, Volumes 96-13 and 97-13 (for 1992 and 1993 respectively), the annual average rainfall and evaporation for the closest station which measures both (Lisbon, Florida, approximately 19 miles northeast of the site) the average rainfall and evaporation, recorded in inches, were as follows:

<u>Year</u>	<u>Rainfall</u>	<u>Evaporation</u>
1992	55.9	60.4
1993	46.1	57.9

The model presented uses a wet weather period of about 9 inches per month for rainfall and uses an average evaporation rate over the entire year. It is SEI's opinion that this provides conservative input for the model.

- d. Please explain the 12,656 GPD/AC in the consumptive use formula. How is CU ave = 14,532 gpd/ac derived?
- d. The data presented in the response of 2/10/95 was consumptive use for an outdoor windrow composting facility model with spray irrigation. This model was inadvertently used for the water balance. A mass balance windrow composting model presented in "Compost Engineering, Principles and Practice", by Roger Tim

Ms. Susan Pelz
921100.003

May 11, 1995
Page 7

Haug, Ann Arbor Science Publishers, Inc, 1980, was used to evaluate the moisture conditions for the covered compost building water balance. The results are presented in Appendix A.

As described above, and discussed briefly in our conversation of April 26, 1995, the facility design has undergone some additional thought somewhat provoked by some of the concerns mentioned in the Departments previous requests for additional information. At this time, changes in the scope of the proposed construction at the site have been made. It is the County's intention that the terms of the signed consent agreement will be preserved. The removal of the material in the lined cell has been proceeding ahead of schedule and the County will continue to work diligently towards the emptying of the cell.

Springstead Engineering, Inc. requests that a meeting be scheduled with the Department to discuss the above mentioned changes and schedule for construction. As you requested, the parties which were present at the initial meeting concerning the agreement will be requested to be present. Please contact me so we can set a time, date and location for a meeting.

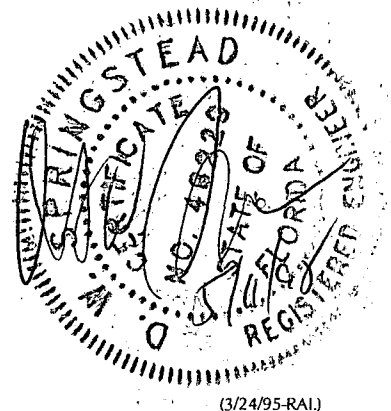
We hope that this information meets your needs at the present time. Should you have any questions regarding the above information, please contact our office.

Sincerely,
Springstead Engineering, Inc.

David W. Springstead, P.E.
Engineer
Florida Registration No. 48229

DWS/kac

cc: Garry Breeden - Sumter County
Terry Hurst - Sumter County
Mitch Kessler - TIA Consultants
Jake Varn - Carlton, Fields, Ward, Emmanuel, Smith & Cutler, P.A.



(3/24/95-RAI)

APPENDIX A

Water Balance for Covered Composting Building

Ponds collecting stormwater runoff to be managed as leachate will be the leachate pond and the south sump. All other impervious surfaces will be cleared of maturing compost and will not generate leachate to be treated.

Leachate pond	12,500 ft ²
South sump	<u>19,450 ft²</u>
Total Area	31,950 ft ²

General Equation: $P - E - T - CU - R = \Delta S$

Where: P = Precipitation
E = Evaporation
T = Transpiration
CU = Consumptive use of Windrows
R = Runoff
 ΔS = Change in Storage

P = 18 inches of rain in 60 days or 0.3 in/day (wet season)

E = 0.163 in/day (average yearly evaporation/365 days)

T = Included in CU

CU = See below

R = 0 (no runoff on to covered composting pads)

ΔS = Change in storage

$$P = 0.3 * (1/12 \text{ in/ft}) * 31,950 \text{ ft}^2 * (7.48 \text{ gal/ft}^3) \\ = 5,975 \text{ gpd}$$

$$E = 0.163 * (1/12 \text{ in/ft}) * 31,950 \text{ ft}^2 * (7.48 \text{ gal/ft}^3) \\ = 3,246 \text{ gpd}$$

$$CU = \begin{aligned} &-37,200 \text{ gpd for initial moisture of 100 TPD compost (in)} \\ &-75,600 \text{ gpd for moisture control of 6,000 tons compost (in)} \\ &+21,000 \text{ gpd lost to atmosphere from maturing compost (out)} \\ &+20,100 \text{ gpd lost going out in finished product (out)} \\ &= +71,700 \text{ gpd (net loss of moisture)} \end{aligned}$$

$$R = 0$$

$$\Delta S = P - E - CU - R$$

$$\Delta S = 5,975 - 3,246 - 71,700 - 0$$

$$\Delta S = -68,971 \text{ gpd required to maintain and process compost}$$

MSSW PERMIT



An Equal Opportunity Employer

Southwest Florida Water Management District

2379 Broad Street • Brooksville, Florida 34609-2899 • 1-800-423-1476 (Florida Only) or
(904) 796-7211 • SUNCOM 628-4150 • T.D.D. Number Only (Florida Only): 1-800-231-6103

7601 Highway 301 North
Tampa, Florida 33637-6759
(813) 985-7481 SUNCOM 578-2070

170 Century Boulevard
Bartow, Florida 33800-7700
(813) 534-1448 SUNCOM 572-6200

115 Corporation Way
Venice, Florida 34292-3524
(813) 483-5970 SUNCOM 549-5970

2303 Highway 44 West
Inverness, Florida 34453-3809
(904) 637-1360

March 17, 1995

Joe L. Davis, Jr.
Chairman, Wauchula
Roy G. Harrell, Jr.
Vice Chairman, St. Petersburg
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Secretary, Tampa
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Peter G. Hubbell
Executive Director
Mark D. Farrell
Assistant Executive Director
Edward B. Helvenston
General Counsel

Garry Breeden
Sumter County Board of County Commissioners
209 N Florida Street, Room 206
Bushnell, FL 33513

Subject: **Final Agency Action Transmittal Letter -**
GENERAL - CONSTRUCTION
Permit No: 402092.04
Project Name: Solid Waste Management Facility Expansion
County: Sumter
Sec/Twp/Rge: 15, 22/20S/22E

Dear Mr. Breeden:

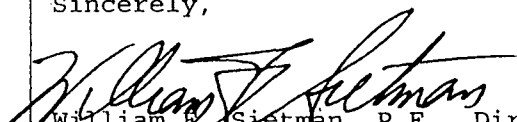
Your permit has been approved contingent on no objections being received within 14 days after receipt of this notice of Final Agency Action. Your acceptance of the permit constitutes notice and your agreement that the Southwest Florida Water Management District (District) may periodically review this permit, including making site inspections.

The enclosed approved construction plans are part of your permit, and construction must be in accordance with those plans.

Please be advised that any person who is substantially affected by the District's Final Agency Action concerning a permit may challenge this permit by requesting an Administrative Hearing in accordance with Section 120.57, Florida Statutes (F.S.), and Part V of Chapter 40D-1, Florida Administrative Code (F.A.C.). A request for hearing must be filed with (received by) the Agency Clerk of the District at the address above within 14 days after the date of receipt of this notice of Final Agency Action. When actual receipt of notice cannot be determined, receipt is deemed to be the fifth day after the date on which this notice is deposited in the United States mail. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request a hearing under Section 120.57, F.S.

Your participation in the regulation process will help protect and conserve our water resource. You may contact this office if you have any questions or concerns about your permit.

Sincerely,


William B. Sietman, P.E., Director
Brooksville Permitting Department
Resource Regulation

Excellence
Through
Quality
Service

WFS:CCB:mjs
Enclosures: Approved Permit w/Conditions attached; Construction Plans;
Statement of Completion; Notice of Authorization
cc: File of Record, Charlotte F. Booth
Springstead Engineering, Inc., David W. Springstead, P.E.

File
921100.003

RECEIVED
MARCH 22 1995
LEESBURG, FL.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
MANAGEMENT AND STORAGE OF SURFACE WATER
GENERAL - CONSTRUCTION
PERMIT NO. 402092.04

EXPIRATION DATE: March 17, 1998

PERMIT ISSUE DATE: March 17, 1995

This permit, issued under the provisions of Chapter 373, Florida Statutes and Florida Administrative Code Rules 40D-4 and 40D-40 authorizes the Permittee to perform the work outlined herein and shown by the application, approved drawing(s), plans, and other documents, attached hereto and kept on file at the Southwest Florida Water Management District (District).

PROJECT NAME: Solid Waste Management Facility Expansion

GRANTED TO: Sumter County Board of County Commissioners
209 N Florida Street, Room 206
Bushnell, FL 33513

ABSTRACT: This permit allows construction of a new surface water management system to serve a 17.00 acre government development known as the Sumter County Solid Waste Management Facility. The project is located off CR 470 and CR 529, approximately one mile east of I-75 in central Sumter County. Adjacent property includes the existing Sumter County Landfill (MSSW Nos. 402092.01, .02, and .03) to the north. Adjacent lands to the east, south and west are currently undeveloped pasture.

The project is located within a hydrologically closed drainage basin. Consistent with Chapter 40D-4, F.A.C., water quantity requirements, the principal design storms were based on a 100-year, 24-hour rainfall event of 11.0 inches, for volume retention. The proposed surface water management system will be comprised of six inter-connected ponds. The drainage calculations indicate that each pond has been sized to retain the 100-year post-minus, pre-development runoff volume. Each pond will be equipped with a discharge structure which has been sized to attenuate post-development peak discharges from the 25-year, 24-hour storm.

The proposed surface water management system will be comprised of six inter-connected dry detention ponds. The drainage calculations indicate the system has been sized to retain the increase in 100-year runoff volume. According to the Soil Conservation Service, the project is located in an area of well drained sands. Volume attenuation credit was initiated at the bottom of the pond. Compliance with Chapter 40D-4, F.A.C, water quality requirements is assured, as the on-line detention pond has been sized to retain and infiltrate one-half inch of runoff from its contributing watershed in approximately one hour. This is consistent with Part B, Permit Information Manual, Section 3.2.2.2(c) (2). The system will be equipped with a discharge structure and skimmer to ensure that oils, greases and floating pollutants are not discharged into receiving waters. Flood Insurance Rate Map, Community Panel 120296-015B, indicates the project does not lie within a 100-year floodplain. There are no wetlands within the project area. The engineer of record, David W. Springstead, Florida P.E. No. 48229, has submitted design calculation and construction drawings which indicate no adverse off-site water quality or water quantity impacts are anticipated to result from this development.

Permit No. 402092.04
Project Name: Solid Waste Management Facility Expansion
Page 2

The surface water management system will be owned, maintained, and operated by the Sumter County Board of County Commissioners. Documents indicating acceptance of this responsibility are part of the File of Record for the project. No objections to this permit application have been received at the District office to date.

OP. & MAINT. ENTITY: Sumter County Board of County Commissioners
PROPERTY LOCATION: Sumter County
SEC/TWP/RGE: 15, 22/20S/22E
TOTAL ACRES OWNED: 120.00
PROJECT SIZE: 17.00 Acres
LAND USE: Government
DATE APPLICATION FILED: December 16, 1994
AMENDED DATE: N/A

I. Water Quantity/Quality

POND #	AREA	
	ACRES @ T.O.B.	TREATMENT TYPE
WRA 2	0.86	Percolation
WRA 1	0.40	Percolation
WRA 3	0.25	Percolation
WRA 4	0.40	Percolation
WRA 5	0.30	Percolation
WRA 6	2.30	Percolation
TOTAL	4.51	

II. 100-Year Floodplain

Encroachment (ac-ft):	Compensation (ac-ft):
0.00	0.00

III. Environmental Considerations

There are no wetlands within the project area.

Permit No. 402092.04
Project Name: Solid Waste Management Facility Expansion
Page 3

SPECIFIC CONDITIONS

1. All surface water management systems shall practice water conservation to maintain environmental quality and resource protection; to increase the efficiency of transport, application and use; to decrease waste; to minimize unnatural runoff from the property and to minimize dewatering of off-site property. At such time in the future as the Governing Board establishes minimum water levels in aquifers or minimum rates of flow in streams, or otherwise adopts specific conservation criteria, the Permittee may be required to undergo an alteration of the system to comply with such criteria upon notice by the District and after a reasonable period for permitting compliance.
2. In order to ensure that the person who will construct the proposed work is identified as required by Section 373.413(2)(f), Florida Statutes, once the contract is awarded, the name, address, and telephone number of the contractor will be submitted to the District prior to construction referencing Permit Number 402092.04.
3. The District reserves the right to conduct on-site research to assess the pollutant removal efficiency of the surface water management system. The Permittee may be required to cooperate in this regard by allowing on-site access by District representatives, by allowing the installation and operation of testing and monitoring equipment, and by allowing other assistance measures as needed on site.
4. Permittee must notify the District of any sinkhole development in the stormwater retention areas within 48-hours of discovery and must submit a detailed sinkhole repair plan for approval by the District within 30-days of discovery.
5. Permittee is legally and financially responsible for repair of any sinkhole developing within the surface water management areas, until the responsibility for repair has been transferred and accepted by a responsible entity.
6. If limestone bedrock is encountered during construction of the retention basins, the District must be notified and the construction of the basins must be halted. At this time, a modification of this permit may be required.
7. Permittee must notify the District at least 48-hours prior to the maximum excavation of the retention/detention pond and must notify the District when the surface water management system is completed.
8. Permittee or responsible entity, must visually inspect all permitted retention/detention ponds monthly for the occurrence of sinkholes.

TRACKING CONDITIONS

1. The Permittee shall immediately provide written notification to the District upon beginning any construction authorized by this permit.

Permit No. 402092.04
Project Name: Solid Waste Management Facility Expansion
Page 4

2. The Permittee shall retain the Design Engineer, or other Professional Engineer registered in Florida, to conduct on-site observations of construction and assist with the as-built certification requirements of this project; the Permittee shall inform the District in writing and prior to beginning construction of the name, address and phone number of the Professional Engineer so employed by the Permittee for that purpose.
3. The Operation and Maintenance Entity shall submit inspection reports in the form required by the District, in accordance with the following schedule unless specified otherwise herein or in Application Information.
 - () For systems utilizing effluent filtration or exfiltration, the inspections shall be performed 18 months after operation is authorized and every 18 months thereafter.
 - (X) For systems utilizing retention and wet detention, the inspections shall be performed two years after operation is authorized and every two years thereafter.
 - () For systems utilizing effluent filtration or exfiltration and retention and wet detention, the inspections shall be performed 18 months after operation is authorized and every 18 months thereafter.
4. Refer to LIMITING CONDITION No. 4 herein.

LIMITING AND STANDARD CONDITIONS

1. The Permittee shall comply with the Limiting and Standard Conditions which are attached hereto, incorporated herein by reference as Exhibits "A" and "B" respectively and made a part hereof.



Authorized Signature

EXHIBIT "A"

1. The Permittee shall perform the construction authorized in a manner so as to minimize any adverse impact of the system on fish, wildlife, natural environmental values, and water quality. The Permittee shall institute necessary measures during the construction period, including full compaction of any fill material placed around newly installed structures, to reduce erosion, turbidity, nutrient loading and sedimentation in the receiving waters.
2. Water quality data for the water discharged from the Permittee's property or into the surface waters of the state shall be submitted to the District as required. Parameters to be monitored may include those listed in Chapter 17-3. Analyses shall be performed according to procedures outlined in the current edition of Standard Methods for the Examination of Water and Wastewater by American Public Health Association of Methods for Chemical analyses of Water and Wastes by the U.S. Environmental Protection Agency. If water quality data are required, the Permittee shall provide data as required on volumes of water discharged, including total volume discharged during the days of sampling and total monthly discharges from the property or into surface waters of the state.
3. The Permittee shall comply with all applicable local subdivision regulations and other local requirements. In addition the Permittee shall obtain all necessary Federal, State, local and special district authorizations prior to the start of any construction or alteration of works authorized by this permit.
4. The operation phase of this permit shall not become effective until the owner or his authorized agent certifies that all facilities have been constructed in accordance with the design permitted by the District. Within 30 days after completion of construction of the surface water management system, the Permittee shall submit the certification and notify the District that the facilities are complete. Upon completion of the surface water management system, the Permittee shall request transfer of the permit to the responsible entity approved by the District. The District may inspect the system and require remedial measures as a condition of transfer of the permit.
5. All roads shall be set at or above elevations required by the applicable local governmental flood criteria.
6. All building floors shall be set at or above elevations acceptable to the applicable local government.
7. Off-site discharges during construction and development shall be made only through the facilities authorized by this permit. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream stages. Stages may be subject to operating schedules satisfactory to the District.
8. No construction authorized herein shall commence until a responsible entity acceptable to the District has been established and has agreed to operate and maintain the system. The entity must be provided with sufficient ownership so that it has control over all water management facilities authorized herein. Upon receipt of written evidence of the satisfaction of this condition, the District will issue an authorization to commence construction.

9. The permit does not convey to the Permittee any property right nor any rights or privileges other than those specified in the permit and Chapter 40D-4.
10. The Permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction operation, maintenance or use of any facility authorized by the permit.
11. This permit is issued based on the Permittee's submitted information which reasonably demonstrates the adverse off-site water resource related impacts will not be caused by the completed permit activity. It is also the responsibility of the Permittee to insure that adverse off-site water resource related impacts do not occur during construction.
12. Prior to dewatering, plans shall be submitted to the District for approval. Information shall include as a minimum; pump sizes, locations and hours of operation for each pump. If off-site discharge is proposed, or off-site adverse impacts are evident, an individual water use permit may be required. The Permittee is cautioned that several months may be required for consideration of the water use permit application. Temporary dewatering during construction, i.e., well pointing, ditching, etc. that will not affect adjacent wetlands or off-site lands is exempt from this requirement.

EXHIBIT "B"

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the Permittee and enforceable pursuant to the authority of Chapters 373 and 403, Florida Statutes. The Permittee is hereby placed on notice that the District will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the Permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the District.
3. The issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other District and Department of Environmental Protection (Department) permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the Permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of the permitted system, nor does it allow the Permittee to cause pollution in contravention of Florida Statutes and District and Department rules, unless specifically authorized by any order from the District or Department.
6. The Permittee shall at all times properly operate and maintain the systems of treatment and control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with conditions of this permit, as required by District rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by District rules.
7. The Permittee, by accepting this permit, specifically agrees to allow authorized District personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted; for the purposes of inspection and testing to determine compliance with this permit and District regulations, such as:
 - a. Having access to and copying any records that must be kept under the conditions of the permit;
 - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit;
 - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or District rules; and

d. Gathering of data and information.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the Permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the Permittee shall immediately notify and provide the District with the following information:

- a. A description of and cause of non-compliance; and
- b. the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The Permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the District for penalties or revocation of this permit.

9. In accepting this permit, the Permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the District, may be used by the District as evidence in any enforcement case arising under the Florida Statutes or District rules, except where such use is proscribed by Florida Statutes.
10. The Permittee agrees to comply with changes in District rules and Florida Statutes after a reasonable time for compliance, provided, however, the Permittee does not waive any other rights granted by Florida Statutes or District rules.
11. This permit is transferable only upon District approval in accordance with Florida Administrative Code rules 40D-4.351 as applicable. The Permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the District.
12. When specifically required as terms of permitting the Permittee shall comply with the following monitoring and record keeping requirements:
- a. Upon request, the Permittee shall furnish all records and plans required under District rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the District, during the course of any unresolved enforcement action.
 - b. The Permittee shall retain, at the facility or other location designated by this permit, records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by District rule.
 - c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

13. When requested by the District, the Permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the Permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the District, such facts or information shall be submitted or corrected promptly.
14. Drawings, plans, calculations, specifications or other information submitted by the Permittee, not attached hereto, but retained on file at the District office, are made a part of this permit.
15. A copy of this permit and a set of construction drawings depicting the permitted system are required to be kept at the work site of the permitted activity during the entire period of construction or operation. The approved construction drawings are issued as a part of this permit.
16. The discharges from this system shall meet state water quality standards as set forth in Chapter 17-3 and Rule 17-4.242 for class waters equivalent to the receiving waters.
17. Any water discharged from the site during construction of the project shall meet State water quality standards at the property boundary or point of discharge to wetlands or State waters. If the discharge does not meet these standards, the discharge will be immediately stopped and the District shall be notified of corrective action taken to correct the violation. Turbidity shall not exceed 29 N.T.U. above background level. Turbidity shall be monitored at least daily during discharge, or more often as determined by the project engineer if needed, to ensure compliance.
18. The Permittee and construction representatives shall assure that erosion and sediment control measures as necessary and as required by Rule 40D-4.091 shall be effectively implemented continuously from beginning of project construction until completion to prevent erosion and transport and discharge of sediment to wetlands or any property other than the project area. Project detention/retention ponds and discharge control structures which are to be constructed as part of the project shall be initially built and maintained continuously during project construction to avoid adverse impact to receiving waters or off site.
19. Except as authorized by this Permit, any further land development, wetlands disturbance or other construction within the total land area of this site will require additional permitting in accordance with Chapters 40D-4 and 40D-40, F.A.C.
20. All rights-of-way and easement locations necessary to construct, operate and maintain all facilities, including uplands conservation/buffer areas and wetlands, which constitute the permitted surface water management system shall be reserved for water management purposes. Prior to site occupancy the reserved areas shall be shown on any final subdivision plat and recorded in the county public records as special use areas for dedication to the responsible operation and maintenance entity.
21. Construction of the discharge control and water quality treatment facilities which are part of the permitted surface water management system shall be completed and operational prior to beneficial occupancy and use of the project development being served.
22. Establishment and survival of littoral areas provided for stormwater quality treatment in wet detention systems shall be assured by proper and continuing maintenance procedures designed to promote viable wetlands

plant growth of natural diversity and character. Certified as-built drawings depicting the established wet detention treatment areas shall be submitted to the District for inspection and approval upon completion of construction. Following as-built approval, perpetual maintenance shall be provided for the permitted system.

23. Any existing wells in the path of construction shall be properly plugged and abandoned by a licensed water well contractor in accordance with Chapter 40D-3 and Rule 17-21.10(4), F.A.C.
24. Any existing septic tanks on this site shall be abandoned at the beginning of the project construction in accordance with Rule 10D-6.53, F.A.C.
25. Any existing fuel storage tanks and fuel pumps on this site shall be removed at the beginning of project construction in accordance with Rule 17-61.05(3)(c), F.A.C.
26. All retention/detention pond side slopes, except over filter media, shall be sodded, and staked as necessary, to prevent erosion. Filter media surfaces shall also be stabilized to prevent erosion, but in a manner that does not restrict infiltration.
27. By issuance of this permit the District, its employees and representatives assume no responsibility and/or liability in regard to either the design, construction or performance of the permitted facilities.
28. Any system alteration, including for augmentation into or withdrawal of water from the permitted system, other than as specifically authorized by this permit will require additional District permitting consideration. The water level of retention and detention ponds shall not be augmented by pumping or diversion of water into the ponds to artificially control their level above the design normal or beginning storage level. Wells and diversion facilities for such augmentation may require water use permitting according to Chapter 40D-2, F.A.C.
29. Information and reports required to be submitted by this permit shall be submitted to:

Permits Data Section
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34609-6899
30. Construction of all water management facilities, including wetlands compensation, grading, mulching, planting of mitigation areas, etc. must be completed prior to beneficial occupancy of the project or operation of the surface water management system.
31. The excavation of retention/detention ponds is limited to the permitted design elevation(s).
32. The Permittee shall notify the District within 30 days of the sale or transfer of ownership of land on which a surface water management system will be or is located, and request transfer of the permit to the new owner. A surface water management permit to construct or alter a system can be transferred if the new Permittee agrees to the transfer and the permit has not expired. The District can transfer the operation phase permit provided the project has been properly completed, the new Permittee meets the rule requirements for operation and maintenance entities and the land use remains the same.



**Springstead
Engineering, Inc.**

Consulting Engineers — Planners — Surveyors

FILE

727 South 14th Street
Leesburg, Florida 34748

March 28, 1996

Lake (904) 787-1414
Sumter (904) 793-3639
Fax (904) 787-7221

Ms. Susan J. Pelz, E.I.
Solid Waste Section
Division of Waste Management
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

D.E.

MAR 29 1996

SOUTHWEST DISTRICT
TAMPA

**RE: MATERIALS RECOVERY FACILITY EXPANSION
PENDING PERMIT NO. SC60-263199, SUMTER COUNTY
SEI FILE NO. 921100.000**

Dear Ms. Pelz:

We are in receipt of your request for additional information regarding the above referenced project. Please find the following responses:

1. **Operations and Maintenance Manual, Safety Plan.** The information states, "the County anticipates receiving [the procedures for start-up operation, normal operation and emergency shut down operations and safety information] from the recovery equipment supplier by the end of April 1996. The County will forward this information to the Department upon receipt." Please be advised that the Department cannot consider the permit application complete prior to Department review of this information.
1. **Springstead Engineering, Inc. has requested that Mr. John Matelevich of RRT contact the Department to explain the time frame involved in providing the documents to the Department. We request that the Department include the review of these documents as a condition of the permit, if possible, prior to start-up of any equipment at the facility.**
2. **Material Storage.** Please clarify the information provided in Table 2. The information states, "all materials will be either baled and stacked, palletized, binned or stored in roll-offs or trailers." Please specify the storage method for each type of material. Since all materials will be stored "in the existing processing building", please estimate the maximum quantity of materials which will be stored in this location. Will roll-offs and trailers be stored in the existing processing building? Will the existing processing equipment be removed to allow additional available storage? Based on the estimated waste composition, material recovery rates, storage method, and material bulk density, please estimate the maximum storage quantity and time for each processed and unprocessed material and residues. Storage times of 1 year do not seem to be appropriate since the facility will be processing 100 tons/day of material, and the maximum storage for all materials and residues is 300 tons (based on cost estimate information).
2. **Roll-offs and trailers will not be stored in the existing processing building. All of the equipment in the existing storage building will be removed to provide the maximum storage area.**

As stated before, materials will be stored in the amount necessary to meet truck load quantities for best transportation prices. The existing materials recovery building has an area of 13,330 square feet. The entire building will be used to store recovered recyclables. Table 2 has been revised and is attached.
3. **Financial Assurance.** The cost estimates submitted are not approved. Please provide detailed copies of the third-party estimates for the removal, loading, transportation and disposal costs for the maximum

March 28, 1996
Ms. Susan Pelz
921100.000 (MRF)

Page 2

quantity of materials (processed, unprocessed, residuals, and unauthorized wastes) which may be on-site at the facility at any time.

3. Springstead Engineering, Inc. requested a quote from a local contractor relative to loading and hauling 300 tons of material from the tipping floor which would equate to 72 hours of material. Based on the contractors estimate which is attached and the disposal cost at the Ogden Plant in Lake County, the cost estimate for disposal has been adjusted to \$17,205. The detailed cost of the disposal is as follows:

Loading, hauling, and dumping 300 tons of material	\$12.35/ton
Disposal of 300 tons of material	<u>\$45.00/ton</u>
Cost to load haul & dispose	\$57.35/ton

300 tons @ 57.35/ton = \$17,205.00

Recovered materials which will be located in the existing materials recovery building will be sorted recyclables having a value. The value of these recyclables would reduce the cost of disposal of the material on the tipping floor. For the purpose of this estimate, the recovered value of the recyclables will be assumed to be zero.

4. Drawings, Sheet 10a, Leachate Collection System Details. Please verify the east and west invert elevations noted on both the west view and north view of the middle inlet structure (northernmost portion of the building).
4. The east and west invert elevations will be set at an elevation of 69.68.

Should you have any further comments or questions, please feel free to contact our office.

Very truly yours,

SPRINGSTEAD ENGINEERING, INC.

David W. Springstead, P.E.
Engineer
Florida Registration No. 48229

DWS/jal

cc: Mr. Garry Breeden - Sumter County Public Works
Mr. Mitch Kessler - TIA
Mr. John Matelevich - RRT
Mr. Jake Varn - Carlton, Field, Ward, Emanuel, Smith & Cutler, P.A.

PAQUETTE

PAVING CO., INC.

MARCH 28, 1996

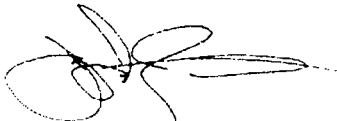
MR. DAVID SPRINGSTEAD
SPRINGSTEAD ENGINEERING
LEESBURG, FL 34748

RE: SUMTER COUNTY SOLID WASTE ESTIMATE

1. FURNISH LOADER AND TRUCKS TO LOAD AND HAUL
APPROXIMATELY 300 TONS OF SOLID WASTE TO A SITE
APPROXIMATELY 13 MILES FROM SUMTER COUNTY SOLID WASTE
FACILITY. DUMP FEES TO BE PAID BY OTHERS.

ESTIMATED COST OF \$ 12.35 PER TON

PAQUETTE PAVING CO., INC.



JAY S. PAQUETTE
VICE-PRESIDENT

TABLE 2

	TRANSFERRED TO DISPOSAL FACILITY	STORED FOR PICKUP OR TRANSFER TO RECYCLER	RETURNED TO PROCESS LINE FOR ADDITIONAL RECOVERY	MAXIMUM STORAGE QUANTITY	AVERAGE STORAGE TIME	MAXIMUM STORAGE TIME	STORAGE METHOD	REQUIRED AREA
ALUMINUM		X		20YD3	6-8 WKS	1 YEAR	ROLLOFF	18' X 10'
FERROUS		X		44 BALES	4-6 WKS	1 YEAR	BALED (5'x 2'x 2')	440 SF
PLASTIC		X		24 BALES	2-4MTHS	1 YEAR	BALED (5'x 3'x 3')	360 SF
PAPER		X		24 BALES	4-6 WKS	1 YEAR	BALED (5'x 3'x 3')	360 SF
FIBRE		X		24 BALES	4-6 WKS	1 YEAR	BALED (5'x 3'x 3')	360 SF
GLASS		X		20YD3	2-4 MTHS	1 YEAR	ROLLOFF	18' X 10'
RESIDUES	X		X	10YD3	72 HOURS	72 HOURS	LOOSE IN PILE	270 SF
NON-PROCESSABLES								
OVERSIZE AND BULKY	X			10YD3	72 HOURS	72 HOURS	LOOSE IN PILE	270 SF
TIRES		X		1000 UNITS	3-4 MTHS	1 YEAR	LOOSE IN TRAILER	12' X 45'
LEAD-ACID BATTERIES		X		100 UNITS	4-6 WKS	90 DAYS	PALLETIZED (5'x 5')	125 SF
USED OIL		X		250 GAL	1 MONTH	90 DAYS	DRUM	7' X 4'
UNAUTHORIZED								
HAZARDOUS WASTE	X			NONE	N/A	N/A	N/A	N/A

D.E.P.
MAR 29 1996
SOUTHWEST DISTRICT
TAMPA