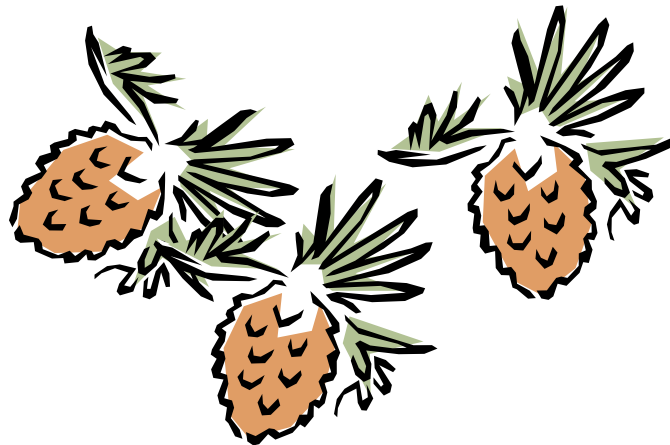


The Pines Assisted Living



HACCP Case Study

An example of the application of HACCP Principles
in an assisted-living facility



Prepared by

Jeannie Sneed, PhD, RD, CFSP

Hotel, Restaurant, and Institution Management
Iowa State University
1055 LeBaron Hall
Ames, IA 50011-1120



Table of Contents



Program Description

Description of The Pines.....	1
Description of the Foodservice Operation	1
Production.....	1
Purchasing.....	2
Facility	2
Equipment.....	3

HACCP Plan Development and Implementation

HACCP Team.....	3
Assess Current Prerequisite Programs.....	3
Determine Strategies for Strengthening Prerequisite Programs	4
Determine Modifications Needed in SOP/New SOP Needed	5
Assess Employee Training Related to Prerequisite Programs.....	5
Evaluate Current Status.....	5
Identify Hazards in the Food Flow	5
Establish Critical Control Points.....	5
Establish Critical Limits	6
Establish HACCP Implementation Plan	6



List of Exhibits

Exhibit 1. Organization Chart	7
Exhibit 2. Menus—2 weeks	8
Exhibit 3. Food Items Purchased	11
Exhibit 4. Vendor Sanitation Assurance Letter	12
Exhibit 5. Facility Layout	13
Exhibit 6. Equipment List	14
Exhibit 7. HACCP Team Responsibilities	15
Exhibit 8. Prerequisite Program Checklist.....	16
Exhibit 9. Checklist for Standard Operating Procedures	18
Exhibit 10. Self-Assessment—Food Safety Checklist.....	20
Exhibit 11. Considerations in Conducting a Hazard Analysis for the Flow of Food	24
Exhibit 12. Groupings of Menu Items by Food Flow Process.....	25
Exhibit 13. Food Flow Charts	
Exhibit 13a. Frozen, Heat and Serve Entrees	27
Exhibit 13b. Ground Beef Recipes	28
Exhibit 13c. Casseroles	29
Exhibit 13d. Cold Sandwiches	30
Exhibit 13e. Cold Salads.....	31
Exhibit 14. Recipes	32
Exhibit 15. Sample HACCP Implementation Plan.....	34



Program Description The Pines Assisted Living



Description of The Pines

The Pines Assisted Living is located in a midwestern state. The facility is one of 10 assisted living facilities in a small, privately owned corporation. The facility, built in 1998, has 60 apartments. The current census is 65 residents.

There are a total of 35 employees in the facility. The foodservice department has 8 employees (equivalent to about 4 FTE), including the foodservice director. A copy of the organizational chart is shown in Exhibit 1. The foodservice director and one other employee are certified in food safety.

Description of the Foodservice Operation

The foodservice department does on-site food production and serves three meals each day to residents. Breakfast is served at 7:30 am, lunch is served at noon, and dinner is served at 5:00 pm. They serve between 45-50 breakfast meals, 75 lunch meals, and 55-60 dinner meals daily. There is one seating for each meal, and meals are served by waiters at the table.

Production

The foodservice director is responsible for menu planning and purchasing for the facility.

Menu. A 5-week seasonal menu is used. This menu is developed by the foodservice distributor that they use as prime vendor. A copy of two weeks of the January 2004 menu, which is representative of typical items served, is attached as Exhibit 2.

Production. Because of the importance of food to residents, many items are prepared from scratch in the kitchen. Some convenience items are used to save time. The following are examples of items prepared from recipes in the kitchen:

- Meat Loaf
- Stuffed Peppers
- Pepper Steak
- Baked Ziti with Cheese
- Swiss Steak
- Chicken and Dumplings
- Macaroni and Cheese
- Shepherd's Pie
- Broccoli Raisin Salad
- Au Gratin Potatoes

Mixes are used for baked items such as muffins. Biscuits are made from scratch, and homemade dinner rolls are prepared at least twice a week. Pumpkin and fruit pies are

purchased frozen and baked in the facility. Many of the entrees are prepared in the operation. Exhibit 3 presents a list of food items purchased, including the form in which they are purchased. These items are organized into dry, refrigerated, and frozen storage areas.

Purchasing

Purchasing is done from a prime vendor and local grocery stores.

Prime vendor. The prime vendor, Mighty Good Food, is used for the majority of food, chemical/cleaning, and paper items. Examples of foods purchased from the prime vendor are precooked frozen entrees, meats, canned fruits and vegetables, fresh fruits and vegetables, frozen potato products, and frozen dessert and bread products. In addition, chemicals for cleaning and sanitizing are purchased from the prime vendor. The prime vendor makes deliveries two times each week, on Tuesday and Friday. The prime vendor has provided a letter describing the sanitation practices that they use in their operation (see Exhibit 4).

All chemicals are purchased from the prime vendor. Quaternary ammonium is used for all hand sanitizing. The facility has a maintenance contract with the prime vendor for the dish machine. The prime vendor sends a technician to the facility every two months to check the machine for proper operation and sanitation. The technician provides documentation of each visit to the foodservice director for her records.

Local grocery stores. Some meats are purchased from a local grocery store known for excellent meats. Small quantities of foods and specialized items sometimes are purchased from one of two local grocery stores. During the summer and fall seasons, some local produce is purchased from local farmers and farmer's markets. Items such as corn, green beans, onions, squashes, and apples are abundant, high quality, and reasonable in price. Residents love the "home grown" fruits and vegetables.

Facility

The facility was built in 1998. The kitchen area is compact, but meets the needs of the operation. The dining room is spacious and has large windows, which provides an inviting dining experience. A copy of the layout of the kitchen and dining room is shown in Exhibit 5.

The kitchen layout provides for an efficient, one-way flow of food through the operation. Product is delivered to the facility and brought in through a side door. Refrigerated and frozen food flows into the kitchen through the back door directly to the refrigerator and freezer. Products for dry storage are moved into the dry storeroom through a separate door that opens to the storeroom from the hall. Food then flows to the production areas, and then to the dining room for service. The dishwashing area is separated from the production area, so that soiled dishes can be taken to that area with little exposure to other areas of the kitchen. Flow of raw and cooked food and clean and dirty dishes minimizes possibilities for cross contamination.

The facility is in excellent condition. Routine maintenance is done by the maintenance department to ensure that the facility is kept in good repair. Recently, the dining room

was painted and the floors were replaced (carpet was installed). The facility uses city water. Because of the hardness of the water, a water softener system is used throughout the facility. An annual health inspection of the foodservice department is conducted by a Registered Sanitarian employed by the state Department of Inspections and Appeals. The facility has a contract with a local pest control company that sends a licensed pest control officer to inspect the facility every two months. A report is provided each time to the Executive Director of the facility.

Equipment

A comprehensive equipment list is presented in Exhibit 6. The equipment was purchased new when the facility was built in 1998. A preventive maintenance program is in place to assure that equipment is in good working condition and to maximize the life of the equipment. The PM program is done by the facility maintenance staff.

HACCP Plan Development and Implementation

HACCP Team

A HACCP Team was formed on October 15, 2003. The members of the team and responsibilities of the team are summarized in Exhibit 7.

Assess Current Prerequisite Programs

The prerequisite program checklist was reviewed to determine if the appropriate prerequisite programs are in place in the facility. Results of the assessment are shown in Exhibit 8.

Determine Strategies for Strengthening Prerequisite Programs

Based on the assessment, the following strategies were developed to strengthen prerequisite programs in the assisted living foodservice operation:

Task	Person Responsible	Deadline
<ul style="list-style-type: none"> Establish calibration schedules and documentation form for ovens. 	FSD	10/31/03
<ul style="list-style-type: none"> Develop written procedures for cleaning and sanitizing the equipment and facility. 	HACCP Team	10/31/03
<ul style="list-style-type: none"> Develop documentation procedures for cleaning and sanitizing the equipment and facility. 	HACCP Team	11/15/03
<ul style="list-style-type: none"> Review and update the current cleaning and sanitation schedule. 	FSD	11/15/03
<ul style="list-style-type: none"> Develop written policies and procedures for personal hygiene for all employees and visitors to the kitchen. 	HACCP Team	12/31/03
<ul style="list-style-type: none"> Conduct training on personal hygiene for all employees. 	FSD/Director of Resident Life	1/15/04
<ul style="list-style-type: none"> Adopt the orientation procedures developed by Iowa State University, which includes a written policy and procedures, orientation checklist to be completed during orientation, and a food safety orientation handout for employees. 	FSD	1/15/04
<ul style="list-style-type: none"> Develop an on-going training program for food safety and HACCP. 	FSD	3/1/04
<ul style="list-style-type: none"> Develop procedures for documenting all orientation and training. 	FSD	3/1/04
<ul style="list-style-type: none"> Develop a written policy and procedures for separation of chemicals and foods. 	HACCP Team	3/15/04
<ul style="list-style-type: none"> Develop a policy, procedures, and forms to monitor food in the temperature danger zone. 	HACCP Team	4/1/04
<ul style="list-style-type: none"> Develop and implement a policy and procedures for dating all food products before they are stored. 	HACCP Team	5/1/04

Determine Modifications Needed in SOP/New SOP Needed

The checklist for standard operating procedures (SOP) was reviewed to determine if the appropriate written SOP are in place in the facility. Results of the assessment are shown in Exhibit 9.

Assess Employee Training Related to Prerequisite Programs

Many written SOP are needed for The Pines Assisted Living Facility. These SOP need to be developed by 5/1/04. Upon completion of the new SOP manual, employee training sessions are needed on the SOP and how they are going to be implemented in the foodservice operation. Employee orientation and training needs, responsibility, and deadlines were delineated above.

Evaluate Current Status

The HACCP team conducted a self-assessment of the prerequisite programs and written standard operating procedures that were in use in the assisted living facility. In addition, the food service director conducted a self-inspection in the kitchen to determine practices being implemented. Corrective actions were developed for the self inspection (see Exhibit 10). These three self assessments provided the basic needs assessment for beginning HACCP.

Identify Hazards in the Food Flow

The HACCP team reviewed the basic flow of food, using the key areas identified by the National Food Service Management Institute (Exhibit 11). Areas of potential concern identified by the committee includes: labeling and dating products at receiving to ensure inventory rotation; rotating inventory of food products; using pre-chilled ingredients/products; checking of internal end-point cooking temperatures for potentially-hazardous foods; holding times; transporting food to maintain temperatures for service; and methods for cooling foods quickly.

The HACCP team reviewed the menu and grouped menu items by similarities in food flow. The groups that resulted from this process are shown in Exhibit 12. Food flows were developed for each of the food groupings. Food flows are shown for the following groupings: Frozen, Heat and Serve Entrees (Exhibit 13a); Ground Beef Recipes (Exhibit 13b); Casseroles (Exhibit 13c); Cold Sandwiches (Exhibit 13d); and Cold Salads (Exhibit 13e).

Establish Critical Control Points

The critical control points are included in each flow chart. Recipes for menu items were reviewed and the critical control points were added as needed. Exhibit 14 shows the original recipe for Stuffed Peppers and the modified recipe with critical control points marked.

Establish Critical Limits

The critical limits are included in each flow chart. Recipes for menu items were reviewed and the critical limits were added as needed. Exhibit 14 shows the original recipe for Stuffed Peppers and the modified recipe with critical limits indicated.

Establish a HACCP Implementation Plan

The HACCP team developed a HACCP implementation plan that identified key tasks to be completed in the first two years and the timeline for task completion. A copy of the plan is included as Exhibit 15.

**Exhibit 1
Organization Chart**

**The Pines Assisted Living
Facility**

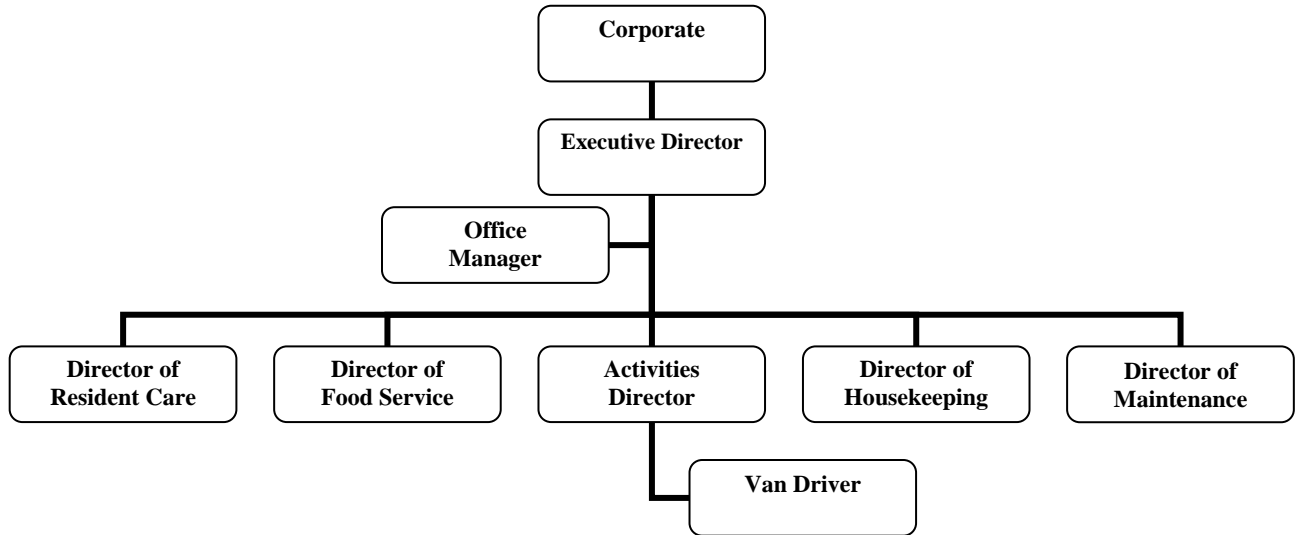


Exhibit 2
MENUS FOR THE PINES

***** MENUS SUBJECT TO CHANGE

Sunday

Breakfast

Juice
Cereal
Fresh Rolls
Eggs
Toast/Jelly
Banana, Grapefruit, Orange, Prunes

Dinner

Pork Loin
Mashed Potatoes/Gravy
Baked Acorn Squash
Golden Glow Salad
Pumpkin Pie
Hot Rolls

Supper

Beef Noodle Soup
Grilled Cheese Sandwich
Cinnamon Baked Apples

Monday

Breakfast

Juice
Cereal
Pancakes/Bacon
Toast/Jelly
Banana, Grapefruit, Orange, Prunes

Dinner

BBQ Chicken
Potato Salad
Baked Beans
Corn Relish
Chocolate/Vanilla Parfaits
Bread

Supper

Quiche
Muffins
Winter Fruit Cup
Tomato Juice
Fruit Strudel

Tuesday

Breakfast

Juice
Cereal
Scrambled Eggs/Hash browns
Toast/Jelly
Banana, Grapefruit, Orange, Prunes

Dinner

Meatloaf
Boiled Potatoes
Carrots
Tomato Spoon Salad
Peach Cobbler
Bread

Supper

Tuna Noodle Casserole
Pea Salad
Apricot Dessert

Wednesday

Breakfast

Juice
Cereal
Boiled Eggs
Toast/Jelly
Banana, Grapefruit, Orange, Prunes

Dinner

Stuffed Peppers
Mashed Potatoes/Gravy
Harvard Beets
Broccoli/Cauliflower Salad
Banana Cake/Frosting
Muffin

Supper

French Dip
Potato Wedges
Coleslaw
Ice Cream Treat

Thursday

Breakfast

Juice
Cereal
French Toast/Sausage
Toast/Jelly
Banana, Grapefruit, Orange, Prunes

Dinner

Baked Ham/Glazed Pineapple
Au Gratin Potatoes
Brussel Sprouts
Citrus Sections
Fruit Pie
Rolls

Supper

Wisconsin Cheese Soup
Beef Salad Sandwich
No Bake Cookies

Friday

Breakfast

Juice
Cereal
Cinnamon Rolls/Eggs
Toast/Jelly
Banana, Grapefruit, Orange, Prunes

Dinner

Baked Fish/Dill Sauce
Scalloped Potatoes
Riviera Blend Vegetables
Lime Jell-O/Pears
Strawberry Angel Food Dessert

Supper

Hot Turkey Sandwich
Mashed Potatoes/Gravy
Peas & Onions
Spice Bar

Saturday

Breakfast

Juice
Cereal
English Muffins
Toast/Jelly
Banana, Grapefruit, Orange, Prunes

Dinner

Lasagna
Green Beans
Tossed Green Salad
Butterscotch Pudding
Garlic Bread

Supper

Hamburger/Bun
American Fries
Cherries
Ranger Cookie

MENUS FOR THE PINES

***** MENUS SUBJECT TO CHANGE

Sunday

Breakfast

Juice
Cereal
Scrambled Eggs
Fresh Rolls
Banana, Orange, Grapefruit, Prunes

Dinner

Baked Pork Chop
Mashed Potatoes/Gravy
Wax Beans
Fruit Fluff
Cherry Pie
Rolls

Supper

Bean Soup
Cornbread
Roast Beef Sandwich
Lemon Fruit Cup

Monday

Breakfast

Juice
Cereal
Cinnamon Coffee Cake
Toast/Jelly
Sausage
Banana, Orange, Grapefruit, Prunes

Dinner

Pepper Steak
Wild Rice
Glazed Baby Carrots
Tossed Green Salad
Blueberry Crunch
Rolls

Supper

Riblet Sandwich
Coleslaw
Applesauce/Cinnamon
Caramel Roll

Tuesday

Breakfast

Juice
Cereal
French Toast/Bacon
Toast/Jelly
Banana, Orange, Grapefruit, Prunes

Dinner

Hot Beef Sandwich
Mashed Potatoes/Gravy
Mixed Vegetables
Broccoli Raisin Salad
German Chocolate Cake
Rolls

Supper

Chicken & Dumplings
Peas & Carrots
Hot Fruit Compote
Rolls

Wednesday

Breakfast

Juice
Cereal
Boiled Eggs
Toast/Jelly
Banana, Orange, Grapefruit, Prunes

Dinner

Corned Beef & Cabbage
Parsley Potatoes
Whole Kernel Corn
Assorted Salad
Ice Cream Treat
Biscuits

Supper

Fish Wedge
Macaroni & Cheese
Marinated Vegetable Salad
Lemon Bar

Thursday

Breakfast

Juice
Cereal
Scrambled Eggs
Banana, Orange, Grapefruit, Prunes

Dinner

Grilled Chicken Breast
Baked Ziti and Cheese
Italian Vegetables
Strawberry Banana Cup
Lime Crunch
Bread

Supper

Shepherd's Pie
Cottage Cheese/Tomatoes
Rolls
Iced Cake

Friday

Breakfast

Juice
Cereal
Pancakes/Ham Slice
Toast/Jelly
Banana, Orange, Grapefruit, Prunes

Dinner

BBQ Ribs
Au Gratin Potatoes
Squash
Mixed Fruit Cup
Chocolate Éclair
Bread Basket

Supper

Corndog
Potato Wedges
Pudding Parfait

Saturday

Breakfast

Juice
Cereal
Eggs
Toast/Jelly
Banana, Orange, Grapefruit, Prunes

Dinner

Swiss Steak/Tomato Sauce
Mashed Potatoes
Creamed Corn
Carrot Raisin Salad
Pumpkin Dessert
Bread

Supper

Creamed Chicken
Buttermilk Biscuits
Green Beans
Sherbet

**Exhibit 3
Food Items Purchased
Dry Storage**

Canned Vegetables	Canned Fruit	Condiments	Dry Storage	Fruit, Fresh	Spices
Baked Beans	Applesauce	BBQ Sauce	Beans	Apples	Basil
Beets	Apricots	Catsup	Bread	Bananas	Black Pepper
Corn, creamed	Mandarin Oranges	Honey	Cereal		Dehydrated Onions
Corn, whole kernal	Mixed Fruit	Mayonnaise	Chocolate Cake Mix		Garlic Powder
Green Beans	Peaches	Mustard	Cornmeal		Oregano
Tomatoes, diced	Pears	Syrup	Flour		Thyme
Tomato Paste	Pineapple Chunks		Gravy Mix		
Tomato Juice	Prunes		Macaroni		
Wax Beans	Pumpkin		Milk, non-fat dry		
			Pickles		
			Potato Buds		
			Pudding Mixes		
			Raisins		
			Sugar		
			Vegetable Oil		

Refrigerator Storage

Fresh Vegetables	Fresh Fruits	Dairy/Eggs	Meats	Pre-Cooked Meats
Acorn Squash	Apples	Cheese	Bacon	Beef Ribs
Broccoli	Grapefruit	Cottage Cheese	Pork Chops	Corned Beef
Cabbage	Oranges	Eggs	Round Steak	Roast Beef, sliced
Carrots	Strawberries	Margarine		
Cauliflower		Milk		
Celery				
Onions				
Peppers				
Potatoes				
Salad Mix				

Freezer Storage

Frozen Precooked Meats	Frozen Desserts	Frozen Raw Meat	Frozen Fruits	Frozen Vegetables
Chicken Cubes	Sherbet	Beef, ground	Orange Juice	American Fries
Corndogs			Grapefruit Juice	Brussels Sprouts
Fish, Halibut			Grape Juice	Hash Browns
Fish Wedges, Cod				Mixed Vegetables
Riblets				Peas & Carrots
Sausage Patties				Peas & Onions
				Potato Wedges
				Riviera Blend Vegetables

Exhibit 4
Vendor Sanitation Assurance Letter

February 12, 2004

Dear Valued Customer,

With food safety being the most important issue facing food service operations of all types today, we would like to take this opportunity to assure you that the Mighty Good Food Distributing warehouse is your first step in your total HACCP program.

The Mighty Good Food Company's warehouse has a strong HACCP program in place. We are inspected annually by the American Sanitation Institute in 94 different categories of food safety. Separate audits are conducted as well for HACCP plan documents and procedures.

The recent January 2004 ASI inspection report graded us with 964 points out of a possible 1000 points. This ranks us in the excellent rating.

Within our warehouse the following are just some of the important HACCP program areas in place with standard operating procedures:

- Hazard analysis
- Critical Control Points established and limits set
- Planned procedures in place to correct processes when deviation may occur
- Detailed and accurate record keeping
- Verification procedures
- Equipment installation and maintenance
- Master cleaning and sanitation schedule
- Orientation for all employees
- Ongoing training on food safety and HACCP procedures
- Separation of food and chemical products
- Time / temperature monitoring
- Refrigerated dock receiving and loading
- Pest control

We are proud of our HACCP program and pleased to be able to be your first step in an overall HACCP program for your operation. If you have any questions please feel free to contact either of us at Mighty Good Foods.

Doug Mitchell, Director of Warehousing

Mark Ethan, HACCP Coordinator, Assistant Director of Warehousing

Exhibit 5
Facility Layout

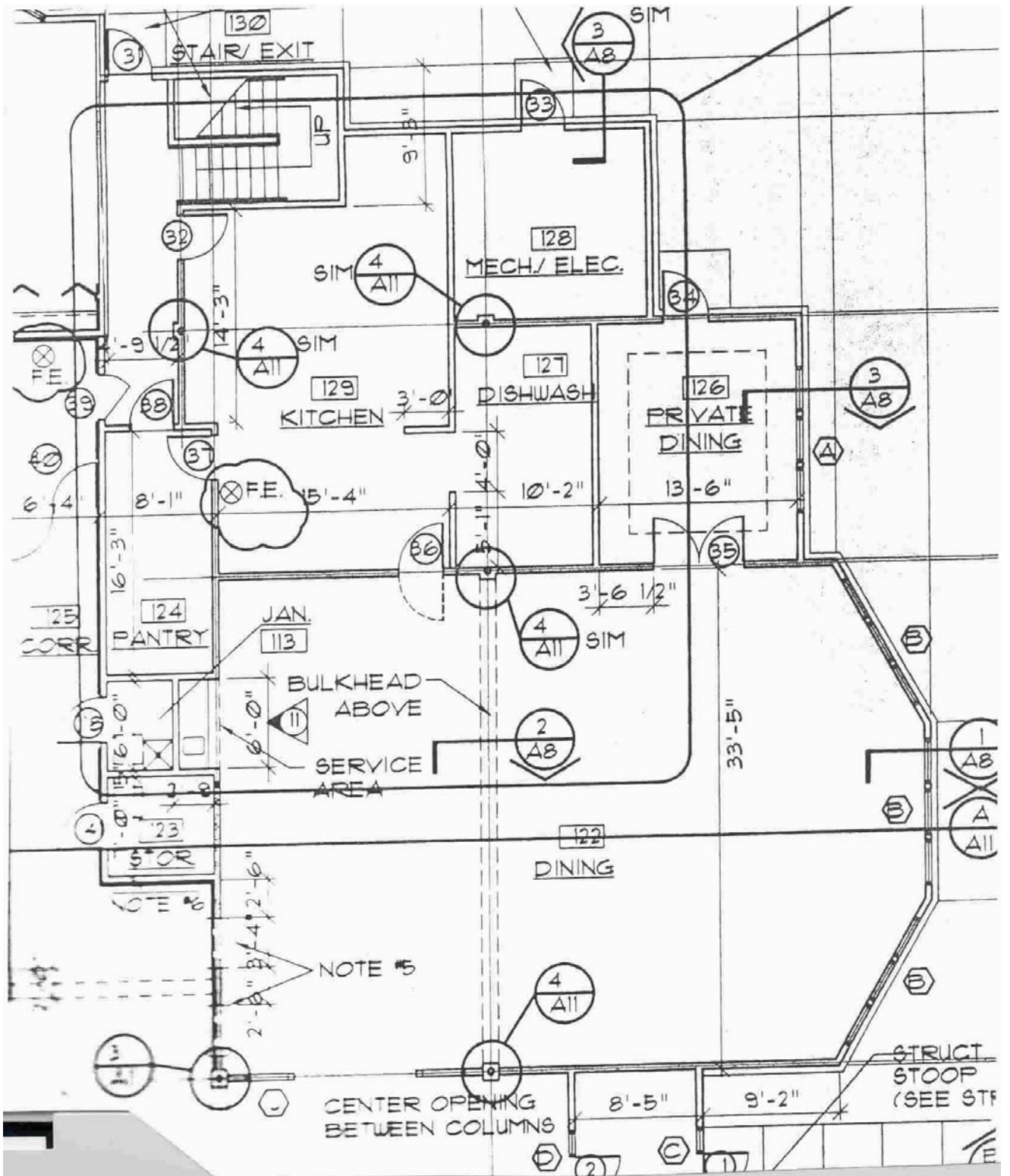


Exhibit 6 Equipment List

Storage

Victory 2-door reach-in refrigerator
Victory 2-door reach-in freezer
Chest freezer (home style)
Reach-in refrigerator (home style)

Food Production/Service

Vulcan Gas Range with 4 burners, griddle top, and 2 compartment oven
Microwave oven
Toasters, 2
Chef Mate Meat Slicer
Hobart Mixer, 20 quart
Supremetal 4-compartment waterless food warmer
Bunn Coffee Maker

Sanitation

Hobart high temperature dish machine
3-compartment sink

Exhibit 7

HACCP Team Responsibilities

Members: The HACCP team will be comprised of the following members:

- Director of Food Service
- Head Cook
- Dining Room Server
- Director of Resident Care
- County Health Department Sanitarian

Responsibilities: The HACCP team will be responsible for:

1. Assessing the current prerequisite programs.
2. Determining strategies for strengthening prerequisite programs.
3. Assessing the current standard operating procedures (SOP).
4. Determining modifications that need to be made in current SOP and new SOP that are needed.
5. Assess the extent to which employees have necessary training to implement the prerequisite programs.
6. Evaluate the current status of the assisted living foodservice operation to determine areas that need to be addressed in a HACCP plan.
7. Identify potential hazards in the food flow process.
8. Group menu items by food flow process.
9. Establish critical control points.
10. Establish critical limits.
11. Establish monitoring procedures.
12. Establish corrective actions.
13. Establish record keeping systems.
14. Establish verification procedures.
15. Establish a HACCP implementation schedule.
16. Plan HACCP training for employees.

Meetings: Meetings will be held monthly on Tuesday afternoons from 1:30 to 3:30 pm.

Exhibit 8

Prerequisite Program Checklist

Instructions: Complete this checklist to identify which prerequisite programs you have implemented in your facility and which ones need to be implemented. There may a prerequisite program listed that may not be applicable (N/A) to your facility.

Prerequisite Program	Yes	No	N/A
Supplier Control			
Letter on file from all vendors stating that they have a HACCP program or follow good manufacturing practices	√		
Equipment Installation and Maintenance			
Equipment is installed properly	√		
Equipment maintenance schedules are in place and documented	√		
Calibration schedules are in place and documented		√	
Cleaning and Sanitation			
Written procedures for cleaning and sanitizing equipment and facility are in place and documented		√	
Cleaning and sanitizing procedures are followed	√		
A master cleaning and sanitation schedule is in place	√		
Personal Hygiene			
Written policy and procedures for personal hygiene for employees and all visitors (vendors, volunteers, etc.) are in place and documented		√	
Personal hygiene policy and procedures are followed by every person who enters the production or service area		√	
Training			
An orientation program on food safety for new employees is in place and documented		√	
An on-going training program on food safety and HACCP is in place and documented		√	

Prerequisite Program	Yes	No	N/A
Chemical Control			
All chemicals are separated from food products (either in a separate storage area or in an area in storeroom well away from food)	√		
Written procedures to ensure separation of chemicals from foods are in place		√	
MSDS forms are available for each chemical stored	√		
Receiving, Storing, and Transporting			
All products are stored under sanitary conditions	√		
All products are stored in areas with appropriate temperature and humidity	√		
Traceability and Recall			
All food products are dated when put into storage		√	
Pest Control			
A pest control program is in place	√		
Pest control is done by a licensed pest control operator	√		
Documentation of pest control procedures is in place	√		
Food Temperature Control			
Food temperatures are maintained and monitored		√	
Time potentially hazardous food (PHF) spends in the temperature danger zone is monitored	√		

There should be standard operating procedures (SOPs) related to each of the prerequisite programs. The SOPs will describe: what tasks are to be done, when the tasks will be done, who will complete the tasks, standards that must be met, and how the completion of the task will be documented.

Documentation forms are needed to record actions and to identify corrective action taken if standards are not met.

Exhibit 9
CHECKLIST
For Standard Operating Procedures

Instructions: Complete this checklist to identify which **written** standard operating procedures (SOPs) need to be implemented in your facility. There may be some SOPs listed that may not be applicable (N/A) to your facility. For example, if your facility does not transport food, then a SOP is not needed. There is space in each category to add procedures that might be specific to your operation.

Standard Operating Procedure	Yes	No	N/A
Personnel			
Employee health and personal hygiene	√		
Glove and utensil use		√	
Contact with blood and bodily fluids	√		
Handwashing		√	
Tasting method		√	
Eating and drinking in the workplace		√	
Other:			
General Equipment Use and Maintenance of Facilities			
Cleaning and sanitizing		√	
Laundry and linen use		√	
Machine warewashing		√	
Manual warewashing		√	
Facility and equipment maintenance		√	
Pest control		√	
Other:			
Purchasing			
Use of approved vendors		√	
Specification development and use		√	
Other:			
Receiving			
Receiving fresh, refrigerated, frozen foods		√	
Receiving chemicals		√	
Other:			
Storing			
Storing refrigerated and frozen foods		√	
Storing dry goods		√	
Storing chemicals		√	
Rotating stock using FIFO		√	
Other:			

Standard Operating Procedure	Yes	No	N/A
Food Preparation			
Calibration of thermometers		√	
Use of thermometers		√	
Thawing foods		√	
Preparing cold foods		√	
Preparing and cooking hot foods		√	
Holding foods		√	
Cooling foods		√	
Reheating foods		√	
Use and handling of leftovers		√	
Transportation of Food			
Transporting food to satellite locations			√
Temperature maintenance at the production kitchen			√
Temperature maintenance at the receiving/service kitchen			√
Transportation of food and equipment from receiving kitchen to production kitchen			√
Service			
Service of food		√	
Cleanliness and sanitation of the dining room		√	
Service temperature		√	
Other:			
Consumer Communications			
Responding to a foodborne illness complaint		√	
Responding to a physical hazard complaint		√	
Other:			
HACCP Training and Monitoring			
Food Safety and HACCP training programs		√	
Self inspection for continuous quality improvement		√	
Food safety and HACCP program verification		√	
Record keeping and documentation		√	
Employee Orientation and Training			
New Employee Orientation Food Safety Checklist		√	
Other			
Other			
Food safety in emergency situations		√	
Visitors in foodservice		√	
Other:			

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Exhibit 11
Considerations in Conducting a Hazard Analysis for the Flow of Food

STEP	CONSIDERATION
Menu Planning	Customers Preparation requirements (time, storage capacity, personnel, etc.) Inventory/rotation Facilities/equipment to accomplish task Delivery/pricing product
Recipe Development	Identification of all ingredients Development of preparation steps Personnel/time factors Facilities/equipment Process cooling/advance preparation
Purchasing	Biological/chemical concerns Approved source Certificate of conformance (product meets buyer's standards) Delivery schedule
Receiving	Time-temperature relationship Sensory evaluations Labeling product for inventory/FIFO
Storing	Time-temperature Personal hygiene practices Cross contamination Inventory/FIFO
Preparing	Designated areas and/or equipment Thawing process Pre-chilled ingredients Batch preparation
Cooking	Type of cooking equipment Internal product temperature check Final cooking temperature Post-cooking contamination
Serving	Time-temperature Post-cooking contamination Personal hygiene
Holding	Time-temperature Raw vs. cooked product storage Post-cooking contamination Facilities/equipment
Cooling	Time-temperature Product density Container size/type Cooling method
Reheating	Time-temperature Facilities/equipment

Exhibit 12
Groupings of Menu Items by Food Flow Process

Baked Goods (fresh)

Apricot Dessert
Banana Cake / Frosting
Biscuits
Buttermilk Biscuits
Caramel Roll
Chocolate Éclair
Cinnamon Coffee Cake
Cinnamon Rolls
Cornbread
German Chocolate Cake
Iced Cake
Lemon Bar
Muffins
Pancakes
Pumpkin Dessert
Ranger Cookie
Rolls
Spice Bar
Strawberry Angel Food Dessert

Beef, Raw

Pepper Steak
Swiss Steak
Beef Noodle Soup
Corned Beef & Cabbage
French Dip
Hot Beef Sandwich

Breads and Cereals, Ready-To-Eat

Bread
Bread Basket
Buns
Cereal
English Muffins
Garlic Bread
Toast

Casseroles

Tuna Noodle Casserole
Baked Beans

Cold Sandwiches

Beef Salad Sandwich
Roast Beef Sandwich

Desserts, Frozen

Cherry Pie
Fruit Pie
Pumpkin Pie

Eggs

Boiled Eggs
French Toast
Quiche
Scrambled Eggs

Fish, Frozen

Baked Fish
Fish Wedge

Fruit, Canned

Applesauce/Cinnamon
Glazed Pineapple
Hot Fruit Compote
Mixed Fruit Cup
Pears
Winter Fruit Cup

Fruit, Fresh

Bananas
Cherries
Cinnamon Baked Apples
Citrus Selections
Grapefruit
Oranges
Strawberry Banana Cup

Gelatins / Pudding

Butterscotch Pudding
Chocolate / Vanilla Parfait
Lime Crunch
Lime Jell-O
Pudding Parfait

Ground Beef, Raw

Hamburger / Bun
Meatloaf
Shepherd's Pie
Stuffed Peppers

Heat and Serve, Frozen

Corndog
Riblet Sandwich
Sausage

Pasta

Baked Ziti & Cheese
Macaroni & Cheese

Pork, precooked cured

Baked Ham
Ham Slices

Pork, Raw

Bacon
Baked Pork Chop
BBQ Ribs
Pork Loin

Poultry, Raw

BBQ Chicken
Grilled Chicken Breast
Hot Turkey Sandwich

Poultry, Frozen

Chicken & Dumplings
Creamed Chicken

Ready-To-Eat, Frozen

Ice Cream Treat
Sherbet

Salads, cold with no cooking

Carrot Raisin Salad
Coleslaw
Cottage Cheese / Tomatoes
Fruit Fluff
Golden Glow Salad
Lemon Fruit Cup
Marinated Vegetable Salad
Pea Salad
Tomato Spoon Salad

Salads, cold with cooked ingredients

Potato Salad

Soups

Bean Soup
Beef Noodle Soup
Wisconsin Cheese Soup

Vegetables, Canned

Green Beans
Harvard Beets
Wax Beans
Tomato Juice

Vegetables, Fresh

Acorn Squash
Au Gratin Potatoes
Boiled Potatoes
Cabbage
Carrots
Glazed Baby Carrots
Parsley Potatoes
Potato Wedges
Scalloped Potatoes
Squash

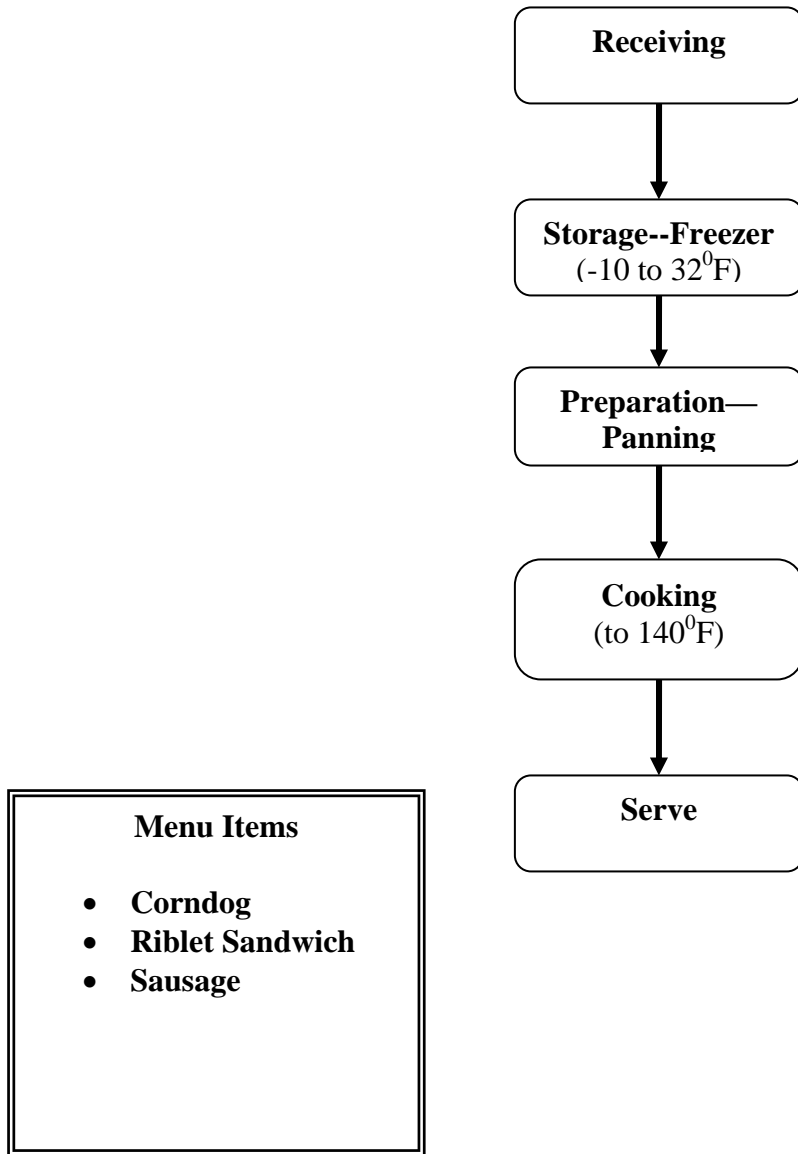
Vegetables, Fresh, Pre-Cut

Assorted Salad
Broccoli / Cauliflower Salad
Broccoli Raisin Salad
Tossed Green Salad

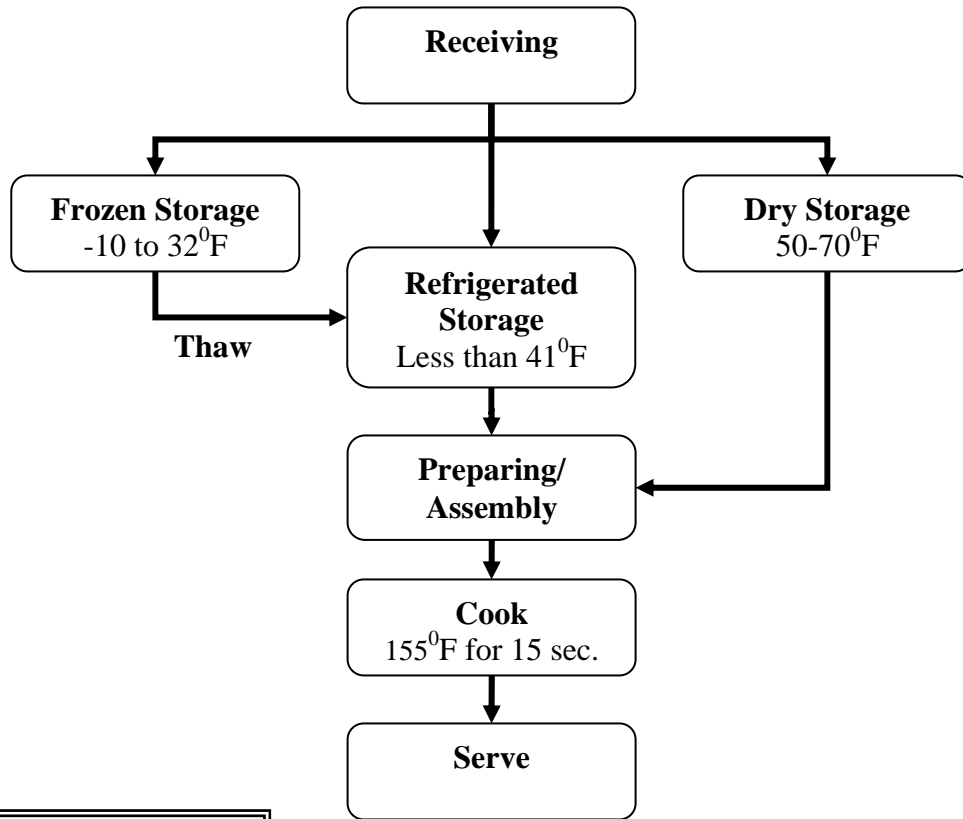
Vegetables, Frozen

American Fries
Brussels Sprouts
Corn Relish
Creamed Corn
Hash Browns
Italian Vegetables
Mixed Vegetables
Peas & Carrots
Peas & Onions
Riviera Blend Vegetables
Whole Kernel Corn

Exhibit 13a
HACCP Recipe Flow Chart for
Frozen, Heat and Serve Entrees

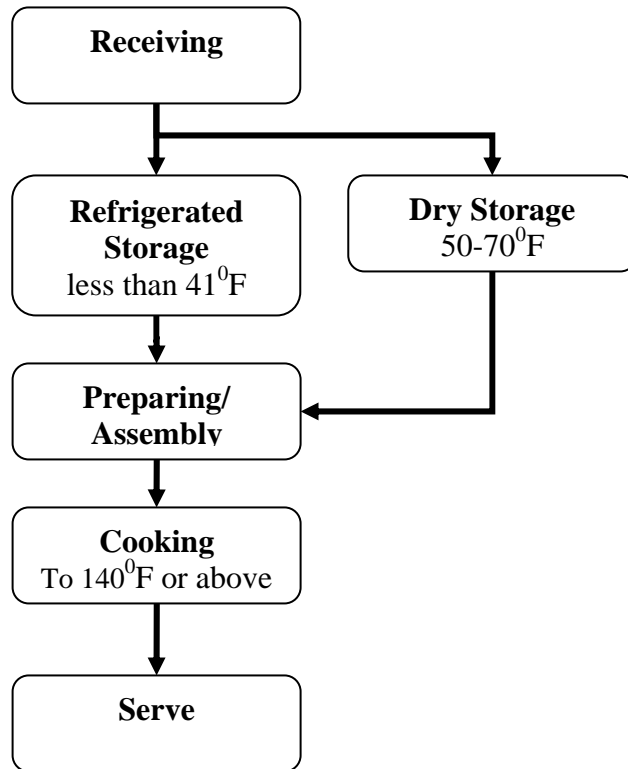


**Exhibit 13b
HACCP Recipe Flow Chart for
Ground Beef Recipes**



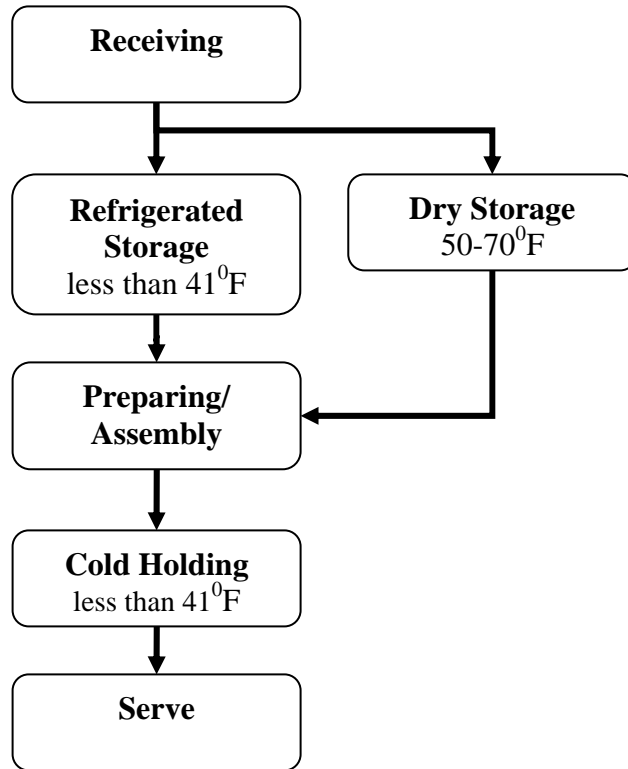
- Menu Items**
- **Hamburger on Bun**
 - **Meatloaf**
 - **Shepherd's Pie**
 - **Stuffed Peppers**

**Exhibit 13c
HACCP Recipe Flow Chart for
Casseroles**



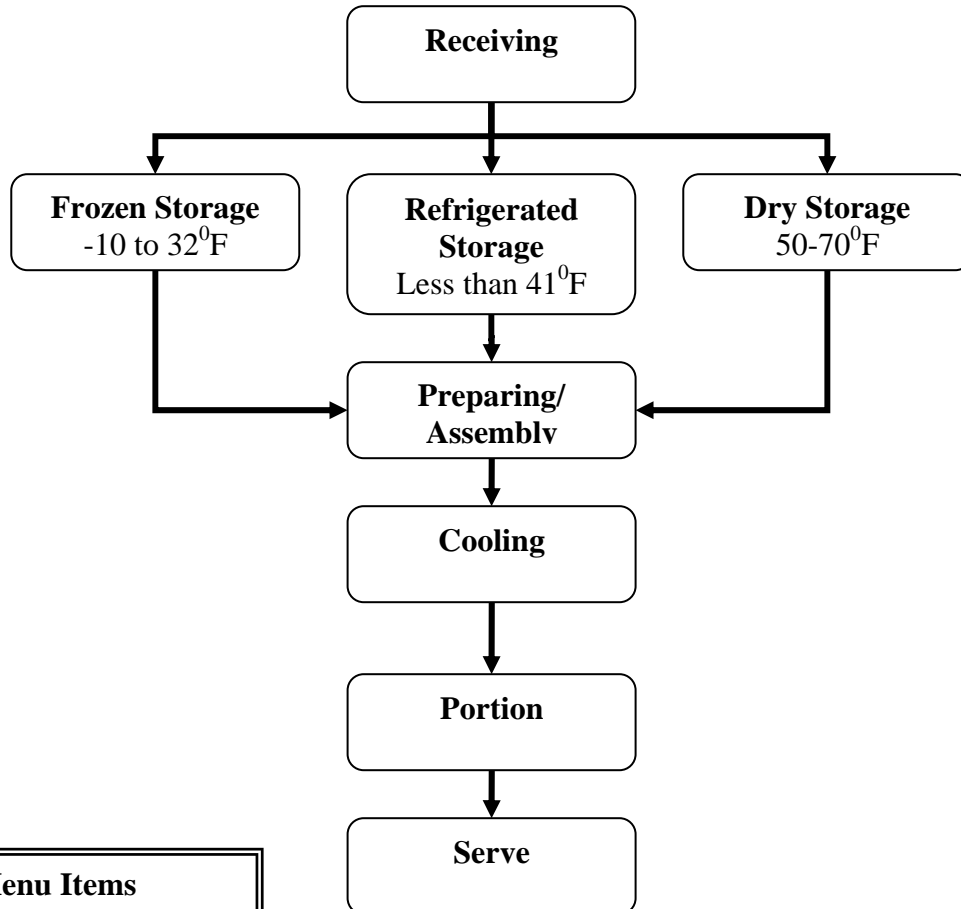
- | Menu Items |
|---|
| <ul style="list-style-type: none">• Baked Beans• Tuna Noodle Casserole |

**Exhibit 13d
HACCP Recipe Flow Chart for
Cold Sandwiches**



- | Menu Items |
|---|
| <ul style="list-style-type: none">• Beef Salad Sandwich• Roast Beef Sandwich |

**Exhibit 13e
HACCP Recipe Flow Chart for
Cold Salads**



- | Menu Items |
|-----------------------------|
| • Carrot Raisin Salad |
| • Coleslaw |
| • Cottage Cheese/Tomatoes |
| • Fruit Fluff |
| • Golden Glow Salad |
| • Lemon Fruit Cup |
| • Marinated Vegetable Salad |
| • Pea Salad |
| • Tomato Spoon Salad |

Stuffed Peppers

Ingredients	Quantity	Directions
Green Peppers	25	<ol style="list-style-type: none"> 1. Wash peppers and remove stem end. Cut in half and remove seeds. Reserve pepper trimmings for filling. 2. Steam peppers for 5 minutes.
Ground Beef	9 lbs.	<ol style="list-style-type: none"> 3. Dice onion and green pepper trimmings. 4. Place onion, green pepper, and ground beef in kettle. 5. CCP Brown ground beef to 155°F for 15 seconds. 6. Combine eggs, salt, and milk. Add to meat. Mix.
Onion	1 lb., 8 oz.	
Eggs, beaten	6	
Salt	1 T., 1 t.	
Milk	1 pt.	
Bread Crumbs	6 oz.	<ol style="list-style-type: none"> 7. Using a No. 10 dipper, fill each pepper with meat mixture. 8. Mix crumbs and fat and sprinkle over tops of peppers. 9. Pour juice around peppers. 10. Bake to 155°F.
Butter	4 oz.	
Tomato Juice	2 qt.	



SAMPLE HACCP IMPLEMENTATION PLAN for The Pines Assisted Living
Assisted Living HACCP Program, Iowa State University

Tasks	Responsibility	Deadline	YEAR 1											
			A	S	O	N	D	J	F	M	A	M	J	J
Planning and Preparation														
Understand the HACCP concept	Foodservice Employees	9/15/03	X	X										
Form HACCP team(s)	FSD	8/15/03	X											
Describe the food, its distribution, intended use, and consumers	HACCP Team	10/15/03	X		X									
Conduct a baseline audit of operation(s)	HACCP Team	12/15/03			X		X							
Conduct a gap analysis	HACCP Team	2/15/04						X		X				
Develop prerequisite programs not already in place	HACCP Team	5/31/04				X						X		
HACCP Plan Development														
Design the HACCP implementation plan	HACCP Team	7/31/04												X
Determine methods of implementation	HACCP Team	7/31/04												X
Develop operation process flow diagrams	HACCP Team	4/15/04			X						X			
Complete hazard analysis	HACCP Team	5/15/04					X					X		
Identify CCPs and critical limits	HACCP Team	6/10/04								X			X	
Complete recipe and production documentation	HACCP Team	8/15/04						X						
Develop ongoing training program for HACCP plan for current and new employees	FSD									X				

Disclaimer: This template is meant to serve as an educational tool for the initial implementation of a HACCP system. The plan needs to be customized to an individual operation and may progress at different rates depending on the type and complexity of the operation. Complete and validated HACCP plans may take years to develop properly depending on resources and staff qualifications. Consider consulting a qualified food safety professional to help construct your own HACCP implementation plan.



SAMPLE HACCP IMPLEMENTATION PLAN for The Pines Assisted Living
Assisted Living HACCP Program, Iowa State University

Tasks	Responsibility	Deadline	YEAR 2											
			A	S	O	N	D	J	F	M	A	M	J	J
HACCP Plan Implementation														
Conduct training sessions	FSD	5/31/04, as needed												
Set up monitoring systems	FSD, HACCP Team	9/30/04	X	X										
Train monitoring personnel	FSD	10/15/04		X	X									
Confirm implementation plans are complete	FSD	2/30/05							X	X				
Verify implementation plan through audit	FSD	3/31/05								X	X			
Re-validate HACCP plan	Sanitarian	5/31/05										X	X	
Maintaining the HACCP System														
Establish frequency for HACCP team to meet and review systems	HACCP Team		X											
Adjust HACCP plan as necessary	HACCP Team											X	X	
Review training program for HACCP information and procedures	HACCP Team											X	X	
Review operations for changes in menus, products, and suppliers	HACCP Team												X	

Disclaimer: This template is meant to serve as an educational tool for the initial implementation of a HACCP system. The plan needs to be customized to an individual operation and may progress at different rates depending on the type and complexity of the operation. Complete and validated HACCP plans may take years to develop properly depending on resources and staff qualifications. Consider consulting a qualified food safety professional to help construct your own HACCP implementation plan.