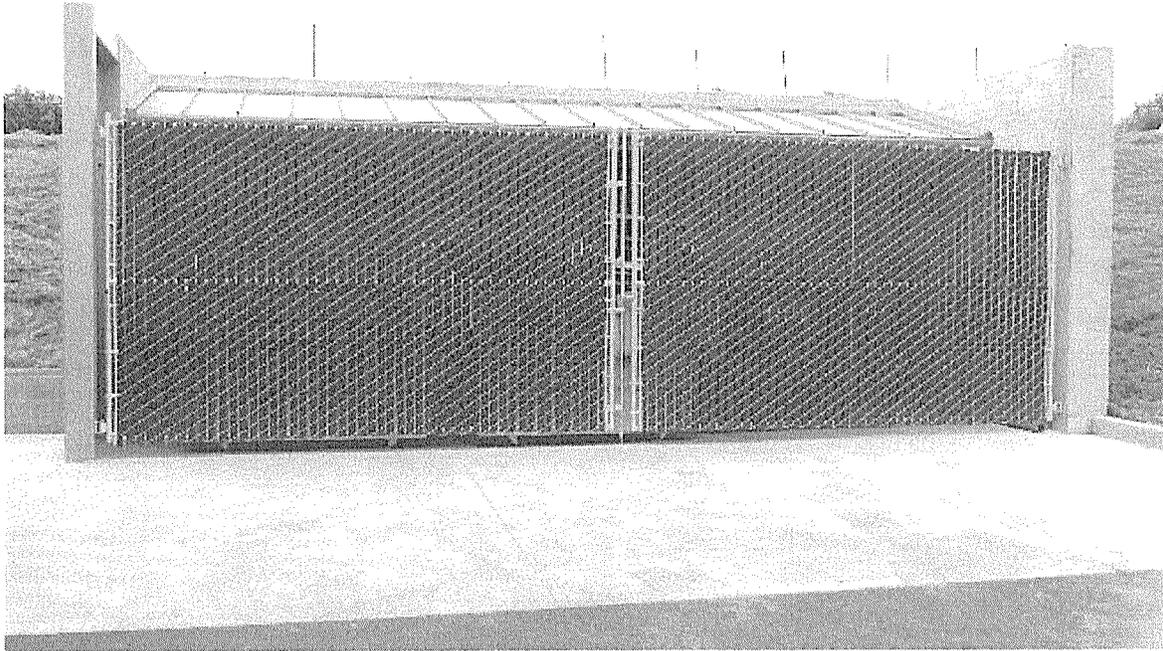


## EXHIBIT A

# SOLID WASTE AND RECYCLING ENCLOSURE STANDARDS



**City of Napa**

**Last Updated October 3, 2008**

If you have any questions regarding the *Standards* or have recommendations for improvement, please contact:

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Napa Recycling and Waste Services

707-255-5200 x 1185

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# ENCLOSURE STANDARDS

These standards provide information and resources for designing waste and recycling areas and enclosures that will be used by building occupants in new developments or significant remodels. Your designs and plans shall accommodate single-stream recycling and green waste recycling in addition to trash.

## A. DETERMINING ENCLOSURE SIZE

- The automated collection trucks used by the City's contractor achieve maximum efficiency when the number of times the drivers get out of the truck is minimized. Properly designed enclosures allow the truck driver to "stab" the bin without physically moving the bin. Maximizing efficiencies helps keep solid waste fees down.
- Additionally, **the collection system is far more efficient if the trucks only need to service a site once per week.** Therefore, the goal is to size the enclosures to be large enough to contain one-week's volume of solid waste, single-stream recyclables, and green waste whenever possible.

The section below outlines how to determine proper enclosure size when you do not know the volume of waste and recyclables that will be generated.

1. Determine what types of materials will be collected from the facility. The three primary service types which require separation into different containers are single-stream recyclables, green waste, and waste. Will the facility generate all three? Most multi-family and commercial properties have commercial landscapers who leave grass clippings on lawns or remove the green waste, and in that case there is no need to make enough room for a green waste container.

When Napa starts its food waste collection program for food facilities and facilities with commercial kitchens such as restaurants and nursing homes, food waste will be collected in 64-gallon carts with lids and will be kept inside of the enclosures. Food processing facilities requiring grease bins will also need to keep grease bins inside enclosures and under a roof. See additional information under Table A.

2. Determine the building use and size and use Table A on page 3 to estimate the proper enclosure sizes and generation assuming one collection per week (no yard waste bin).

**TABLE A**  
**Enclosure Size by Building Use, Square Footage, and Estimated Weekly Generation**

<u>Business / Land Use</u>	<u>Square Footage</u>	<u>Minimum Enclosure Size</u> <u>See Exhibits A-G</u>	<u>Estimated Weekly Generation *</u>
Office, Retail, Industrial and General Commercial**	Less than 10,000 sq. ft.	Small	4 cu. yds.
	10,000-20,000 sq. ft.	Medium	8 cu. yds.
	over 20,000 sq. ft.	Large or multiple enclosures	12 cu. yds or more
Multi-Unit Residential	20 units or less	Medium	8 cu. yds.
	each additional 20 units	Medium	8 cu. yds.
Food Facilities***	less than 8,000 sq. ft.	Small Food	4 cu. yds.
	8,000-16,000 sq. ft.	Medium Food	8 cu. yds.
	over 16,000 sq. ft.	Large Food or multiple enclosures	12 cu. yds. or more

**Table B**  
**Determining Servicing Per Week Based on Enclosure Size and Total Waste Generated Per Week**

<u>Enclosure Size</u>	<u>Serviced 1 day/week</u>	<u>Serviced 3 days/week</u>	<u>Serviced 5 days/week (exemption required)</u>
Small*	4 cu. yds.	12 cu. yds.	20 cu. yds.
Medium	8 cu. yds.	24 cu. yds.	40 cu. yds.
Large	12 cu. yds.	36 cu. yds.	60 cu. yds.

\* A small enclosure will hold two 2-yard bins, one for recyclables and one for waste which assumes a 50 percent recycling rate. See Attachments A-C for details.

**Table C**  
**Interior Enclosure Dimensions**

	<u>Standard Width x Depth</u>	<u>Food Preparation Facility</u>
Small	16' x 6'	20'0" x 7'
Medium	16' x 7'	20'0" x 7'
Large	16' x 9'	21'0" x 9'

Sample diagrams for each of the enclosure sizes are in Exhibits A-G.

## Table A Notes:

\* **Note:** Generation assumes waste and recycling with no green waste. (Assumes green waste is taken away by landscapers or mulched on-site.)

\*\* **Note:** Light industrial/commercial properties are required to have at least one enclosure sized for food waste. Any exemptions to that requirement shall be determined by the Community Development Department. Where tenants are specified and do generate food, the nearest enclosures to that business shall be designed to meet standards for food waste enclosures in Exhibits D-F.

\*\*\* **Note:** Food facilities should consider storage requirements if grease containers will be used and if the facility generates enough food waste. Grease bins must be stored under cover so that they are not exposed to rain water or runoff. To comply with this requirement, food facilities shall add 4 or 5 feet to the width to the enclosure. (See Table C). Grease containers come in two larger sizes or in 55-gallon drums: large which is 300 gallons, and small which is 200 gallons. Bin sizes are 40 – 48 inches high and 6 feet wide, but vary in depth either 3'6" or 4'6". Drums are approximately 23 inches in diameter. Enclosures with grease containers are required to keep the enclosure clean. If water is used for cleaning, the installation of a drain connected to a sewage system is required as is a roof to protect from excess stormwater from entering the sewage system. For more details on roof requirements, see section G on page 7.

When the City of Napa starts its food waste collection program, 64 gallon carts with lids will be used and stored inside the enclosures. To make room for the food waste carts, the hauler will remove the waste bin and replace it with appropriate sized food and waste carts.

Upon consultation with Napa Recycling and Waste Services, you may determine that your business would benefit from multiple recycling containers (for example an additional container for cardboard only) in which case you may want to go up one enclosure size to allow for increased recycling. Recycling is free in Napa so the more recyclables you can sort and store the more money you will save.

### Determining Enclosure Size When Waste and Recycling Volume is Known:

The City of Napa understands that space is at a premium and that enclosures large enough to hold material generated from one week of operation (1 pickup per week) may be difficult to accommodate. Table B provides a guide to the volume of waste and recyclables that can be contained in small, medium, and large enclosures when collection must be 3 or 5 times per week as a result of space restrictions. Please note that sizing enclosures to require collection more than 3 times per week requires the applicant to obtain an exemption by the Community Development Department. Because waste generated is 50/50 waste to recyclables, the enclosure sizes are designed to hold two equal size containers, one for waste and one for commingled recyclables. Small enclosure will hold (2) 2-yd containers, the medium size enclosure will hold (2) 4-yard containers, and the large enclosure will hold (2) 6-yd containers. Also note that if the property is laid out so as to prevent an enclosure of the minimum size, the bins can be placed in separate enclosures (see Exhibit G).

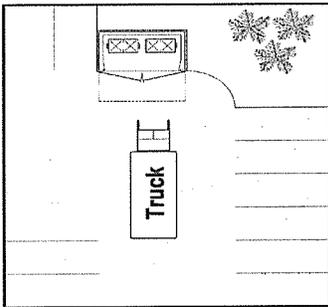
**B. ENCLOSURE LOCATION & ACCESSABILITY**

- All bins/enclosures are required to have direct access for collection trucks. Direct access means the collection truck can drive directly at the bin, and insert the forks into the sides of the bin without having to get out of the truck again (already have to open the gate) to move the bin (See Diagram A). A minimum straight approach of 50 feet is necessary to line up directly with the bin.
- Opening/closing gates or fences and locking/unlocking the bin lids are part of the driver responsibility and are included as part of the service provided.

**DIAGRAM A**

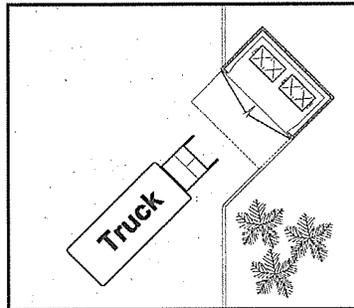
**DIRECT ACCESS**

(Preferred)



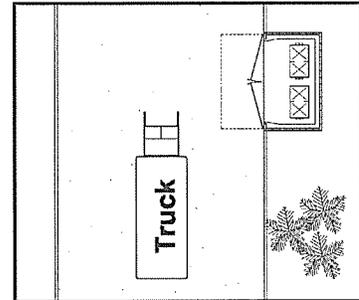
**ANGLED DIRECT ACCESS**

(Acceptable w/approval 30 degrees)



**NON-DIRECT ACCESS**

(Not Acceptable)

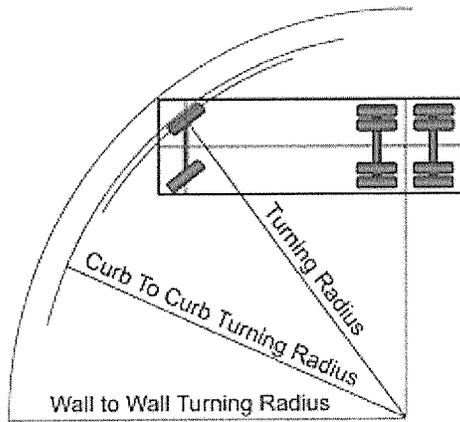


Enclosures with poor or no accessibility or enclosures with atypical orientations are not permitted because the likelihood of driver injury and/or property damage increases. In addition, if a driver is required to move or push the bin for servicing, an additional collection fee may be charged.

- It is difficult and dangerous for a collection truck to back up. Providing a turn around or separate exit that allows the truck to move forward rather than backwards is required. Maximum backup distance is 50 feet for any maneuver and shall be in a straight line;
- Bins shall not be placed in front of fire hydrants and no bin shall be placed within 5 feet of a combustible building wall, opening, or combustible roof eave line; and
- Trash enclosures shall not be installed behind parking spaces.

**TURNING RADIUS REQUIRED FOR ACCESS TO ENCLOSURE.** The turning radius shall be adequate for a 3-axle truck. The overall length, including the forks is 36 feet. Minimum outside turning radius is 46.5 feet. Please detail this on your submitted plans.

## DIAGRAM B - REQUIRED TRUCK TURNING RADIUS



Dimension(ft)	Description
A 32.84	TURNING RADIUS
B 67.75	CURB TO CURB TURNING DIAMETER
C 74.26	WALL TO WALL TURNING DIAMETER

### **C. HEIGHT CLEARANCE OF THE ENCLOSURE APPROACH**

In front of the enclosure, refuse trucks require at least 14 feet of vertical clearance over the entire approach to and from the enclosure to accommodate truck height, and 32 feet high just in front of the enclosure itself or wherever the bin will be serviced to accommodate the truck lifting the bins up to dump the contents.

If the City requires a roof on the enclosure to prevent excess water from entering the waste water system, the roof height inside the enclosure shall be no less than 8 feet.

### **D. DRIVEWAYS**

An asphalt or concrete driveway with 50 feet of straight, direct access that leads to and from the enclosures to the bin, is required and should be built in accordance with the City Standard Plans and Specifications and be able to withstand trucks weighing up to 56,000 lbs. Gross Vehicle Weight (GVW).

### **E. STRESS CONCRETE APRON**

- Apron surface shall be the same elevation as the enclosure pad threshold and the surrounding surfaces, with a slope of 1/8 inch (1% grade) per foot away from the enclosure pad; and,
- Apron shall extend 8 feet from the enclosure pad the width of the enclosure opening. To prevent damage to the asphalt paving caused by receptacle impact, the enclosure base shall be six inches (6 inches of concrete over two (2") inches of aggregate base rock or the builder shall provide evidence that construction specs are engineered to withstand up to 20,000 lbs. of direct force from a single truck axle.

## **F. ENCLOSURE CONCRETE PAD**

- Enclosure pad shall be engineered to withstand up to 20,000 lbs. of direct force from a single truck axle; and
- Enclosure pad surface shall be the same elevation as the apron threshold
- On the open side, a grade break line shall be constructed at the inside edge of the wall with the slab sloping inwards on the inside of the structure and away from the structure on the outside (Napa Sanitation District (NSD) requirement).
- The ground shall be sloped away from the structure on all other sides (NSD requirement).

## **G. ENCLOSURE DESIGN**

- Material  
Generally, the material should match the exterior surface of the building. See the Design Guidelines from the Community Development Department if you have any questions. The City encourages compliance with the Leadership in Energy and Environmental Design (LEED) New Construction and Major Renovations Standards for Storage and Collection of Recyclables or comparable Build it Green Standards.

Reinforced masonry or concrete block is the typical standard.

- Height of Walls  
Minimum 6 feet
- Roof  
When roofs are required, such as at food preparation facilities, the lowest part of the roof cannot be lower than 8 feet high. The roof shall extend past any open sides a distance equal to  $\frac{1}{2}$  the height of the opening (i.e. if the roof is 10 feet above the ground it is required to extend 5 feet past the wall - NSD requirement). Additionally, the roof shall not overhang the front gate or the garbage trucks cannot access the bins.
- Inside Dimension  
Please refer to the Diagrams in Attachment A to determine enclosure size.
  1. The minimum interior dimension for a trash/recycling enclosure needed to house at least two (2) cubic yard bins is 16'x 4'6". Interior dimensions will increase depending on the size and number of bins; and
  2. The enclosure shall be large enough to provide a 6" clearance from the back interior wall and a minimum of 12" (preferably 16" or more) to each side of the bins and 36" from front of bin to gate, and 0" with bins touching on the inside.) We recommend adding a wood or rubber bumper on the back wall to prevent damage to the enclosure during servicing.
- Gates/Pedestrian Doors
  1. Two gates are required for two bin enclosures. When lot configuration does not allow for two bins in one enclosure, it may necessitate individual

enclosures which can have a single gate which shall open to 110 degrees.

2. Gates shall be free standing with no center pole or if there is a center pole, add 12 inches to the length of the gate side of the enclosure.
  3. Gates shall be solid metal with outside handles on each door and a slide latch to secure the doors;
  4. Gated opening for ingress/egress of bins shall be a minimum of 16 feet wide with no posts in the middle, place gate posts outside this span to avoid reducing the span;
  5. Use bolts, not screws, to secure gate to the poles or walls;
  6. Provide means to secure gate doors both opened and closed, e.g. cane bolt w/sleeve and slide latch between doors and sleeve in pavement. The bolts should be a minimum ½ inch in diameter and the sleeves for both should be a minimum of 1 inch or double the size of the bolt to allow flexibility. Be sure to have bolt drop a minimum of 4 inches into the ground.
  7. Gates shall remain closed unless in use and can open to at least 110 degrees and be secured open.
  8. Enclosure will be kept clean with all recyclables and garbage to be placed in the proper receptacle.
  9. A separate additional pedestrian entrance with a door to reduce scavenging is required from the back or the side for both non-residential facilities and residential multi-family developments.
  10. 2007 California Building Code 1133B.2.4.2 The pedestrian entrance door should open with no more than 5 lbs. of force, the opening hardware should be lever type centered 30" – 44" above the finished surface and the bottom 10" of the gate shall have a smooth, uninterrupted surface to allow the gate to be opened by a wheelchair footrest without creating a trap or hazardous condition. 1133B.2.5, 1133B.2.5.2 and 1133B.2.6
- No Parking Signs
    1. The area directly in front of the enclosure gates shall have "NO PARKING" painted on the ground and signs permanently affixed to the gates stating the same.
  - Storage Inside the Enclosure
    1. The property owner shall ensure that only recycling, waste containers and grease bins are stored in the enclosure. The enclosure is strictly for the storage of solid waste containers and cannot be used for general storage or any other purpose.

## **H. STORM WATER POLLUTION PREVENTION**

- Chapter 8.36, Stormwater Runoff Pollution Control, of the City of Napa's Municipal Code states that it is unlawful for any person to make or cause to be made any illicit discharge.

- This ordinance also requires new development and redevelopment projects to incorporate best management practices (BMPs) to minimize the generation, transport and discharge of pollutants to stormwater outlets.
- Post-Construction Stormwater Pollution Prevention Design Standards for new development and redevelopment were adopted by the City of Napa in June 2006. These Standards require:
  - Trash Storage Areas - Limited Exclusion: Detached residential homes
    1. Trash storage areas shall be paved with an impervious surface, designed not to allow run-on from adjoining areas, and screened or walled to prevent off-site transport of trash.
    2. Trash enclosures and dumpster areas for food facilities shall be covered and protected from roof and surface drainage.
    3. Dumpster and garbage can lids shall be kept on securely. Do not allow trash to spill out or overflow the dumpster or garbage can.
    4. Wastewater from the cleaning of garbage dumpster areas and areas where trash is stored or contained may not be discharged to or allowed to reach the street or storm drain system. Wastewater may not be left as "standing" water. This wastewater shall be discharged to the sanitary sewer in accordance with Napa Sanitation District requirements.
    5. Leakage from dumpsters or trash containers shall not be discharged to or allowed to reach the storm drain system.

References:

Chapter 8.36 of the City Ordinance ,and Post Construction Pollution Prevention Design Standards are available at [http://www.cityofnapa.org/index.php?option=com\\_content&task=view&id=307&Itemid=419](http://www.cityofnapa.org/index.php?option=com_content&task=view&id=307&Itemid=419) and at <http://www.napastormwater.org/Site/14/0/134/LocalRegulations.aspx> and <http://www.napastormwater.org/Site/11/67/73/LocalRequirements.aspx>

Contact the City Engineer at (707) 257-9520 for any specific storm water concerns.

**I. WASTE WATER POLLUTION PREVENTION**

- NSD only allows wastewater drains in trash enclosure areas that are servicing restaurants or other types of food service facilities (i.e. grocery stores).
- The drain is required to be connected to the facilities grease interceptor.

**J. FIRE PREVENTION**

Fire Code sections 304.2 – 304.3.3 deal with solid waste enclosures.

- **304.2 Storage.** Storage of combustible rubbish shall not produce conditions that will create a nuisance or a hazard to the public health, safety or welfare.
- **304.3 Containers.** Combustible rubbish, and waste material kept within a structure shall be stored in accordance with Sections 304.3.1 through 304.3.
  - 304.3.1 Spontaneous ignition. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposable container. Contents of such containers shall be moved and disposed of daily.
  - **304.3.2 Capacity exceeding 5.33 cubic feet.** Containers with a capacity exceeding 5.33 cubic feet (40 gallons) (0.15m cubed) shall be provided with lids. Containers and lids shall be constructed of noncombustible materials or approved combustible materials.
  - **304.3.3 Capacity exceeding 1.5 cubic yards.** Dumpsters and containers with an individual capacity of 1.5 cubic yards [40.5 cubic feet (1.1.5 m cubed) or more shall not be stored in buildings or placed within 5 feet (1524 mm) of combustible walls, openings or combustible roof eave lines.

For exemptions, see Guidelines Exhibit F.

## **Exhibits**

**Exhibit A** - Standards for Small-Size Recycling and Waste Enclosures

**Exhibit B** - Standards for Medium-Size Recycling and Waste Enclosures

**Exhibit C** - Standards for Large-Size Recycling and Waste Enclosures

**Exhibit D** - Standards for Small-Size Recycling and Waste Enclosures for Food Preparation Facility

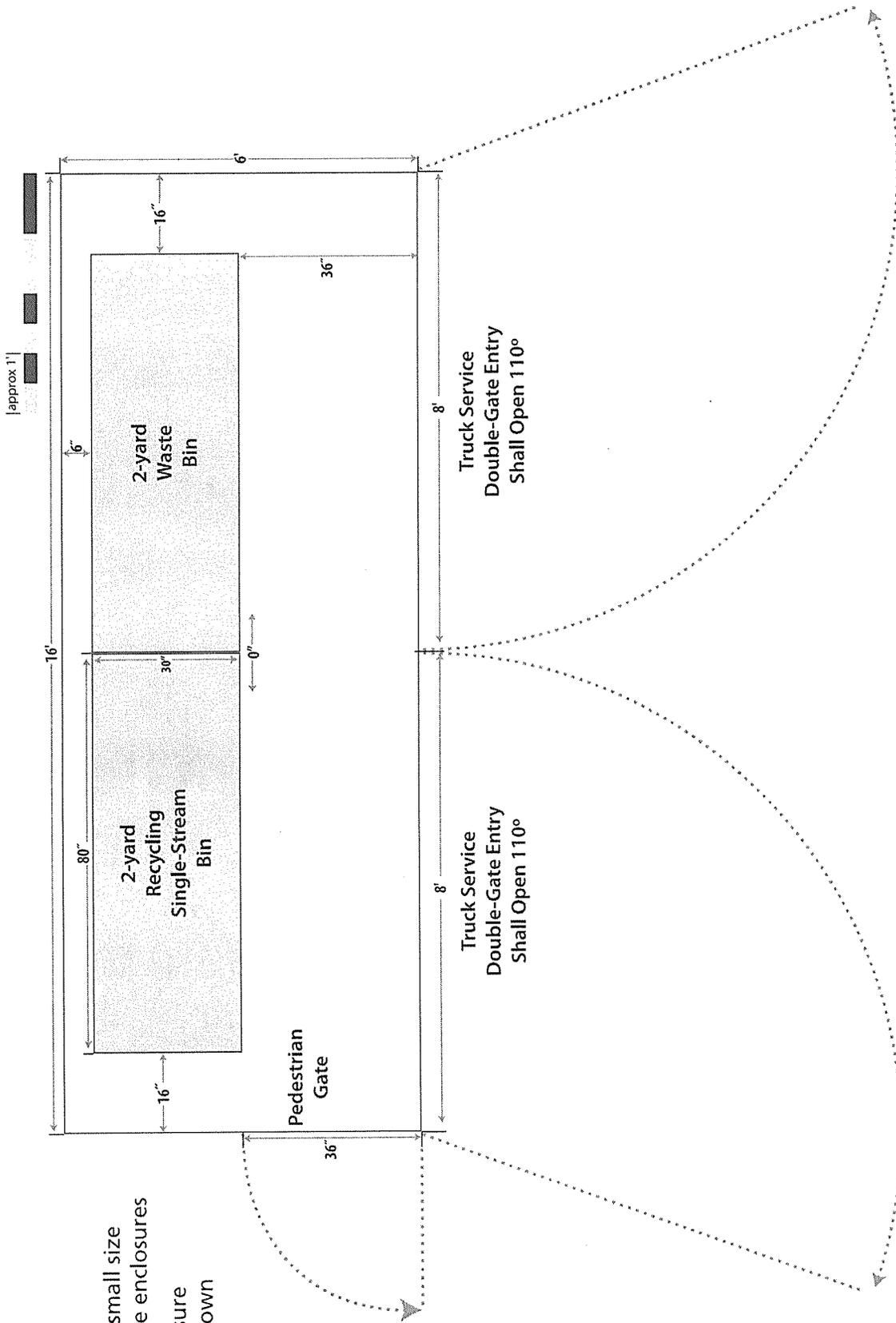
**Exhibit E** - Standards for Medium-Size Recycling and Waste Enclosures for Food Preparation Facility

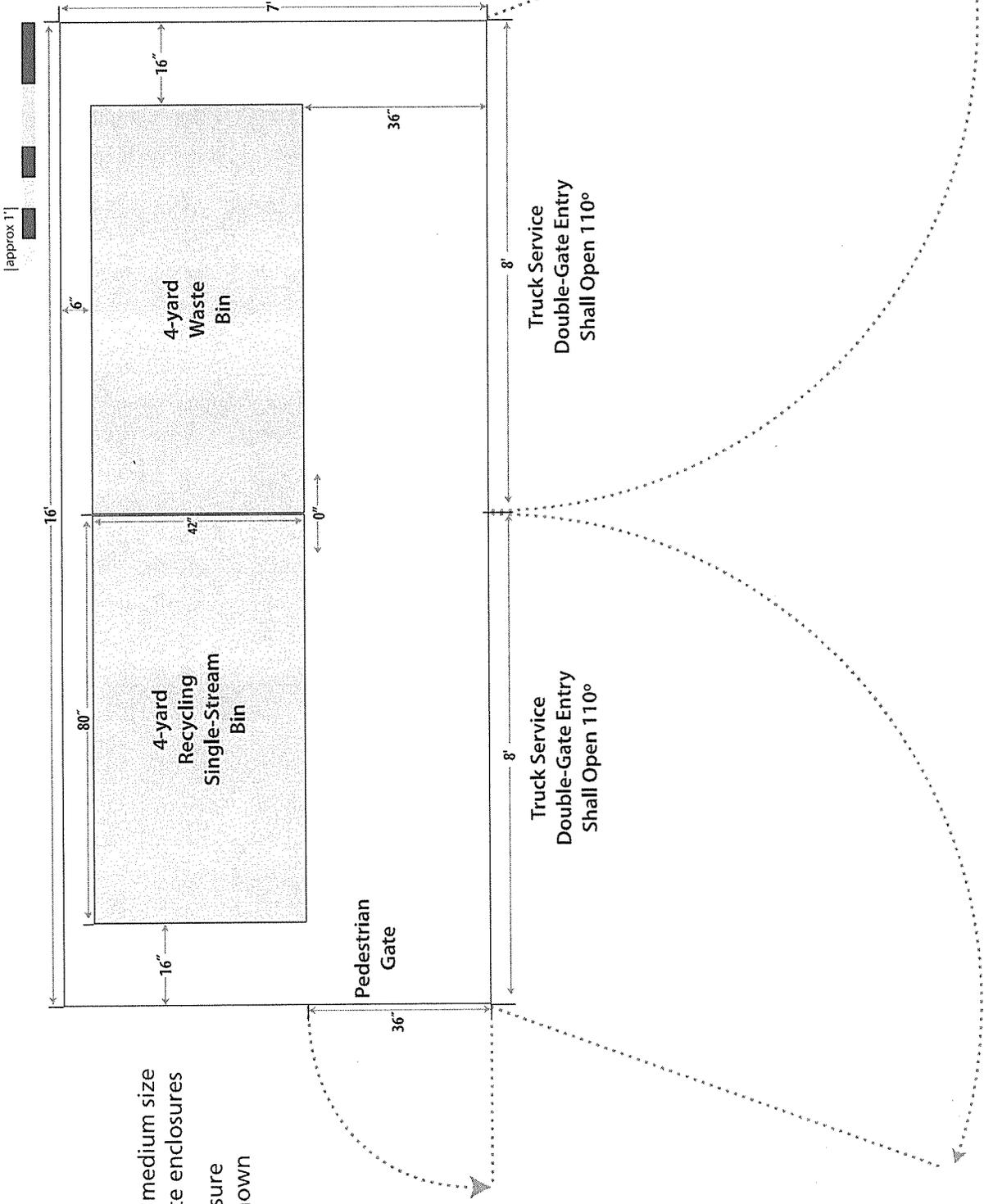
**Exhibit F** - Standards for Large-Size Recycling and Waste Enclosures for Food Preparation Facility

**Exhibit G** - Standard for Small-Size Single Bin Enclosure

# Exhibit A

Standards for small size recycling/waste enclosures  
Interior enclosure dimensions shown



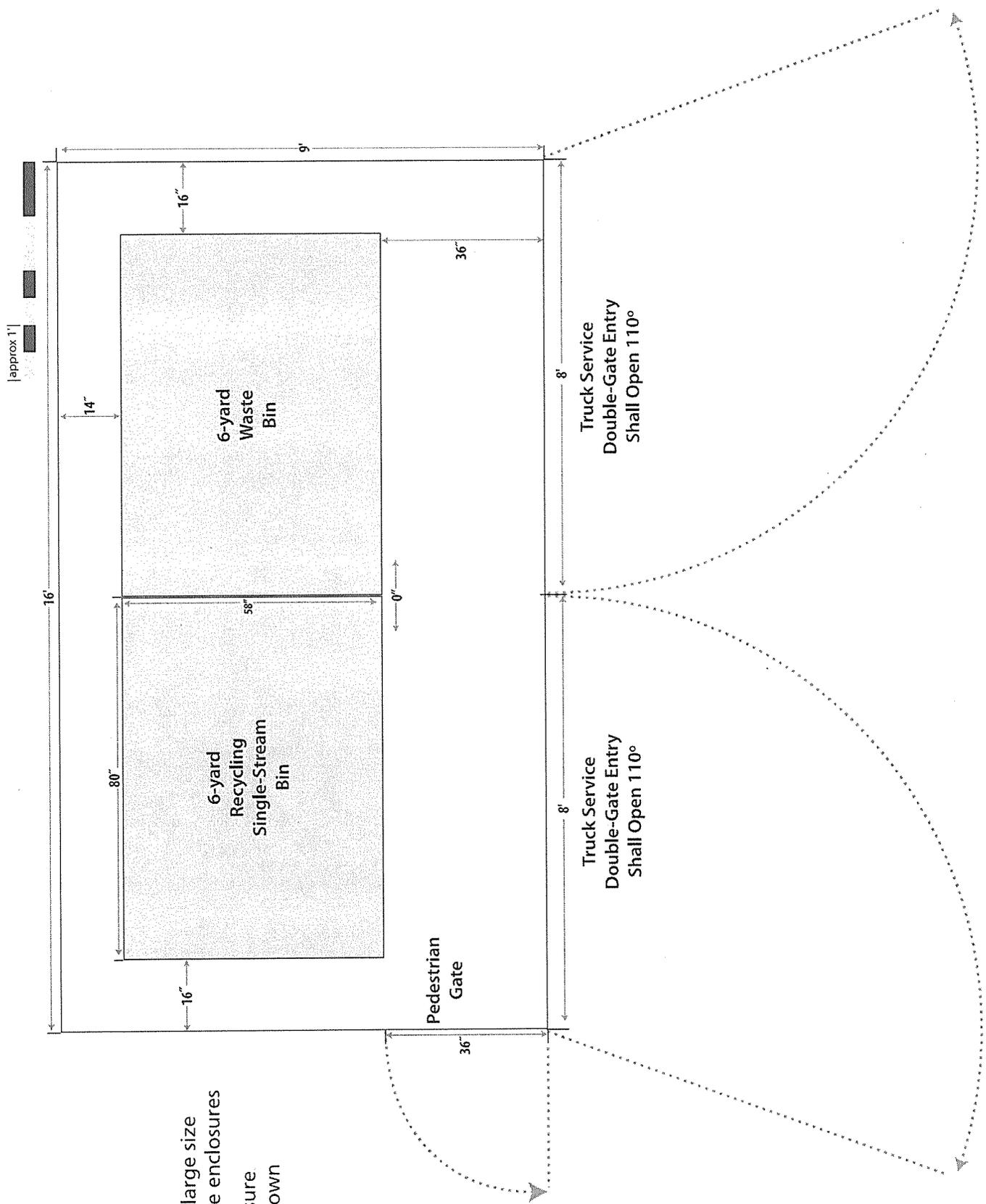


**Exhibit B**

Standards for medium size recycling/waste enclosures  
Interior enclosure dimensions shown

### Exhibit C

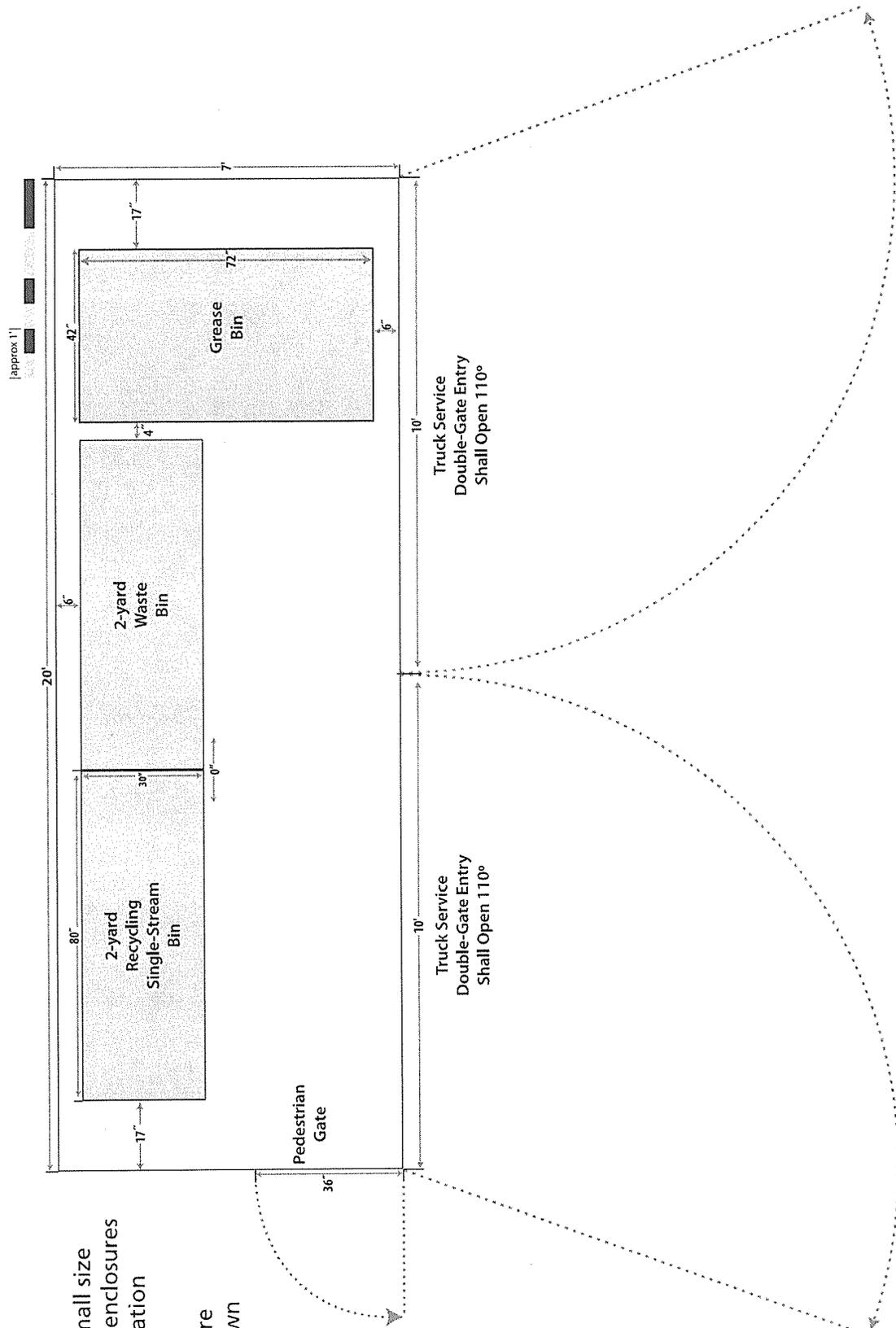
Standards for large size recycling/waste enclosures  
Interior enclosure dimensions shown



# Exhibit D

Standards for small size recycling/waste enclosures for food preparation facilities

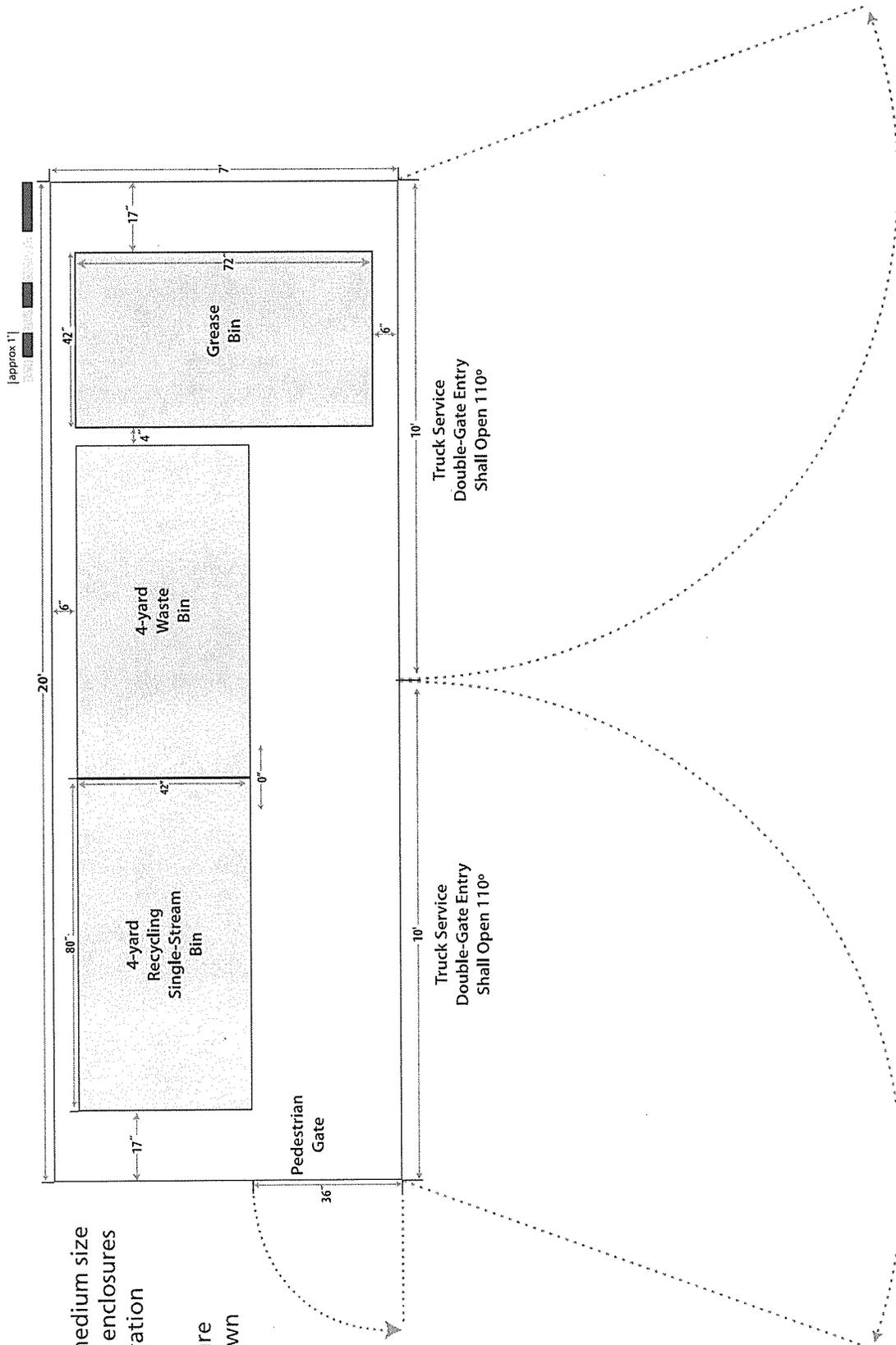
Interior enclosure dimensions shown



# Exhibit E

Standards for medium size recycling/waste enclosures for food preparation facilities

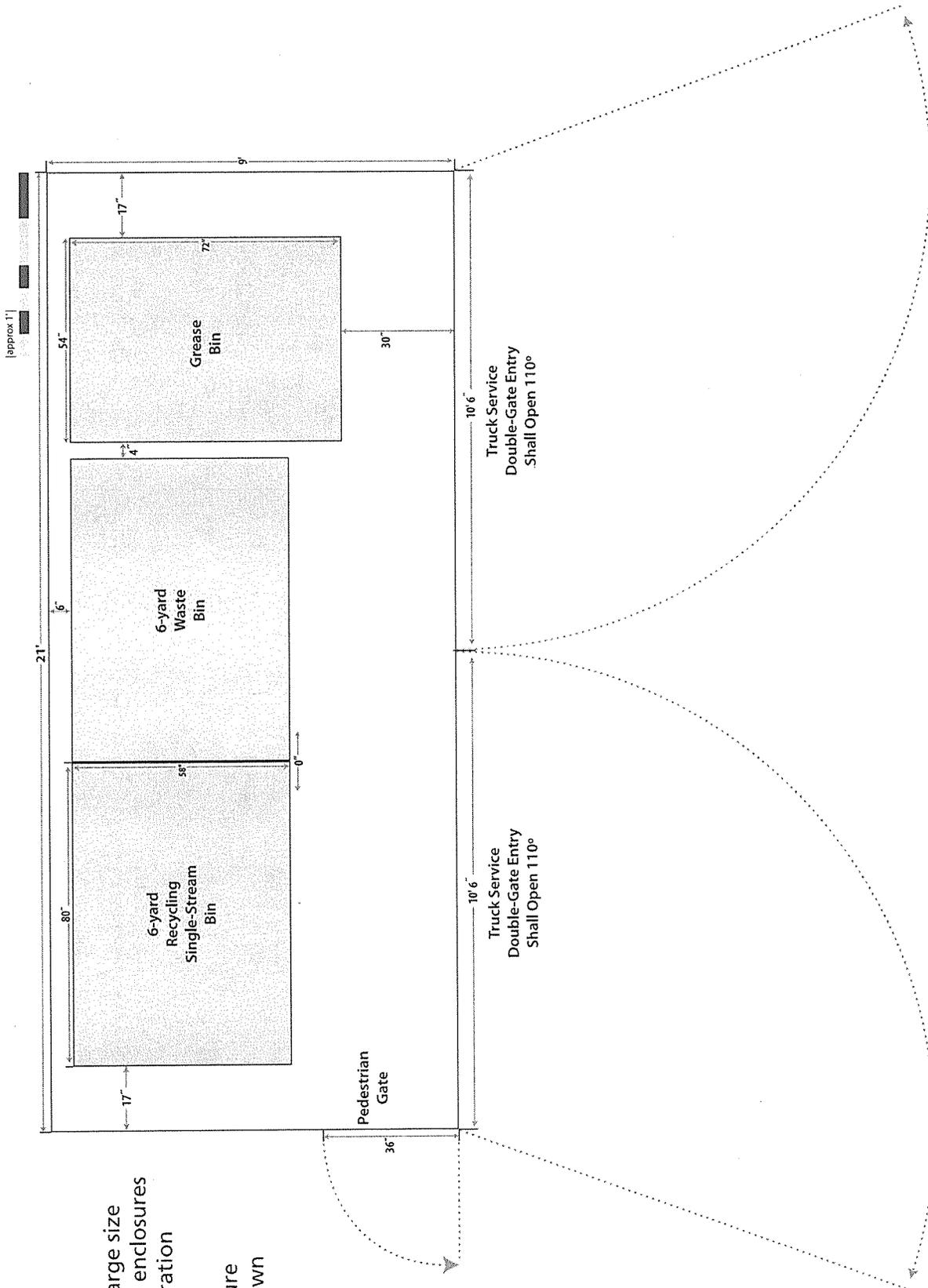
Interior enclosure dimensions shown



# Exhibit F

Standards for large size recycling/waste enclosures for food preparation facilities

Interior enclosure dimensions shown



### Exhibit G

Standards for small size  
single bin enclosure

Interior enclosure  
dimensions shown

