XXI. Development Guideline for Solid Waste Services

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CITY OF MILPITAS

DEVELOPMENT GUIDELINES FOR SOLID WASTE SERVICES

(Garbage, Organics, Tallow, and Recycling Services)

These guidelines are provided to assist in the proper design and installation of solid waste facilities consistent with the City's solid waste code, urban runoff control practices, City zoning codes and City Franchise collection requirements. Figures 1 and 2 show minimum bin enclosure sizes. Figure 3 shows front-end truck access requirements. See text below for information on access requirements for typical side-load collection trucks which service residential areas of the city.

General information on solid waste generation and conversion factors that may be used for sizing facilities may be found in Exhibit 1. Alternatively, information can be used from CalRecycle from their Disposal and Diversion Rates for Business groups at the following website:

- Disposal and Diversion Rates for Business Groups (ca.gov)

Attachment 1 shows typical generation factors for various businesses. This information is provided as a guideline and numbers should be confirmed with City staff or the City franchise hauler for specific situations. Santa Clara County requirements for compactors are shown in Exhibits 2a and 2b. Exhibit 3a provides bin dimension information.

A. SOLID WASTE SERVICE GENERAL REQUIREMENTS FOR ALL NEW DEVELOPMENTS AND RETROFITS

1. **Solid Waste Services Required**. Milpitas requires separate solid waste services per parcel unless an agreement has been recorded to provide joint use of this service for more than one parcel. Solid Waste services are to consist of garbage, recycled, and organic material collection by the City's franchise hauler.

2. **Garbage Accumulation Limited**. In accordance with Milpitas Municipal Code section V-200-3.40 no more than one week's accumulation of Solid Waste shall be kept or be permitted to remain upon any premises in the City unless a commercial compactor is installed. However, Solid Waste accumulated in a commercial compactor shall be disposed of at least once every two (2) weeks.

3. **Commercial Bin Sizing**. The applicant is alerted that tenant mix can affect the size of appropriate facilities; solid waste storage overflow, which can lead to nuisance or inappropriate housekeeping conditions, is not permitted. The size of non-compacted recycling and organics, and compacted garbage services is based on the number of units, proposed development layout, and frequency of collection. Service levels generally require City review and discussions between applicants and the City's franchised collection contractor for Solid Waste services to assure sufficient service levels are provided before garbage containers or compaction equipment is selected and approved. The City may be contacted at (408) 586-2600 or milpitasrecycles@ci.milpitas.ca.gov.

4. **Commercial Collection Options**. The type of service selected depends on the volume of material generated and pickup frequency desired. Collection bin options are:
    a) *Front End Load Bins* – These are bins which are emptied over the front of the collection vehicle and then returned for service. Bins are available between 1 cubic yard and 8 cubic yard bin sizes with varying dimensions for garbage, recycling, and organics collection services. Push and return services are available for specifically-sized bins – contact Milpitas Sanitation (the City's franchised solid waste collection contractor) to discuss collection options and pricing. A plan view of a front-end load truck may be found in Figure 3. Schematics of front load bins may be found in Exhibit 3. Figure 4-6 shows various Front End Load (FEL) bin configurations in order to show examples of different collection service levels within an enclosure space.
    b) *Roll-Off Bins* – These are larger bins which are emptied by placing the entire container onto the back of the collection vehicle for hauling and disposal. The emptied bin is then returned. Bins are available between 10 cubic yard and 40 cubic yard bin sizes. No push and return services are available for these types of bins.
    c) *Compactor Bins* – Front end/rear load and roll-off compactor bins are suitable for garbage and recycle collection. These bins should not be used for organics (food waste or landscape waste) collection.
        - Front load/rear load compactors are picked up on site and deposited directly into the collection vehicle.
        - Roll-off compactors can be either stationary or self-contained.
            - Stationary roll-off compactors. The crushing unit stays on site while the container is taken to the landfill. The compactor body is bolted to the customer's concrete pad. The design and intent of this style of compactor is for *dry waste*.
            - Self-contained roll-off compactors. The crushing unit (packer body) and container are welded together into a single unit. The complete unit is loaded onto the hauler's roll-off truck and taken to the landfill and then returned. This style of compactor is designed for to handle *moist waste* but may also be used for dry waste. Compacted bins offer the advantage of using a lower number of garbage bins due to a higher collection volume as a result of compaction. Use may result in added convenience and/or collection cost savings.

5. **Collection truck access**. Collection trucks require a minimum 41-foot straight approach clearance and a minimum 41-foot turning radius.
    a) **SINGLE-FAMILY SIDE LOAD**. Typically side-load trucks are used to service single-family residential areas which collect 64 or 96 cubic yard wheeled carts, 32-gallon cans and plastic bag setouts. The truck requires a minimum of 33 feet of turning radius (66 feet of curb to curb diameter for a 180 degree turn). Single-family services include trash, yard waste and recycled material collection.

B. SOLID WASTE ENCLOSURES*

1. **GENERAL**

    a) **Drainage**. Per Milpitas Municipal Code section XI-16-4, no person is allowed to discharge any substances into the storm water system; discharge can go through the sanitary water system. MMC section XI-16-13 extends this to outdoor waste and disposal areas. This means that solid waste enclosures shall be designed to limit the accidental discharge of any prohibited material or other wastes into the storm drain system. The City of Milpitas stormwater permit requires that all new solid waste enclosures shall drain to the sanitary sewer. Enclosure(s) for food establishments shall include installation of pretreatment devices. In certain circumstances, it may be necessary to retrofit drains to discharge into the sanitary sewer. Contact the City Engineer (or designee) for determination. All other enclosures shall be located 25 feet or more from any storm drain inlet.

    b) **Slope Required**. The applicant shall install a slope at enclosure entrance, with a minimum gradient of 2% but no greater than 4%, to prevent outside stormwater run-off from entering the enclosure. Stormwater inside enclosure(s) shall drain into the sanitary sewer.

    c) **Wall Protection**. The applicant shall install a minimum ten-inch wide, three-inch height curb along interior walls or six-inch diameter bollards to prevent wall damage.

    d) **Gate**. A double, swinging gate with bollards or J-hooks shall be installed at front of enclosure to provide a minimum of 120-degree swing area and a minimum, unobstructed **INSIDE** opening of 12 feet. J-hooks shall be installed to securely fasten open gate.

    e) **Site Layout Required**. Location, plan and elevation drawings of solid waste enclosure shall be shown on plans and submitted to the City for review and approval.

2. **ENCLOSURES FOR FRONT LOAD SERVICES ONLY**

    a) **Enclosure Dimension**. Refer to Figure 1 for enclosure dimensions; minimum **INSIDE** dimensions are 18.5 feet by 10.5 feet.

    b) **Concrete Pad**. Six (6) inch thick minimum, reinforced concrete pads shall be installed to accommodate no less than 40,000 pounds.

    c) **Ceiling or Trellis Covers**. Ceilings and trellises lower than 15-feet severely limit service access and may increase collection contractor's service charges. Coordinate with Planning for visual impacts of planned ceilings or trellises.

3. **ENCLOSURE FOR ANY COMBINATION OF THE FOLLOWING SERVICES: COMPACTOR, OPEN TOP ROLL-OFF SERVICES, AND/OR FRONT LOAD.**
    a) **Enclosure Dimension**s. Refer to Figure 2 for enclosure dimensions; minimum **INSIDE** dimensions are 16 feet by 17 feet.

    b) **Power Supply**. When required, electrical power shall be provided for equipment in conformance with the National Electric Code.

    c) **Concrete Pad**. Eight (8) inch thick minimum, reinforced concrete pads shall be installed to accommodate not less than 60,000 pounds, which is the combined weight of trucks and compactor(s)/open-top roll-off container(s).

    d) **Ceiling and Trellis Covers**. Ceilings and trellises lower than 15-feet severely limit service access and are not recommended, except where required to reduce visual impacts.

C. ADDITIONAL REQUIREMENTS FOR SPECIFIC TYPES OF DEVELOPMENTS

1. FOOD ESTABLISHMENTS (Includes grocery stores, industrial sites with cafeterias, restaurants and take-out establishments)

i. **Services Required**. Per Milpitas Municipal code section V-200-3.40, solid waste facilities shall be sized for adequate garbage service. Generally a minimum of two (2) 4-yard front-load recycling containers shall be provided (Figure 1). Pretreatment devices and tallow bins are required for food establishments. Tallow bins shall be placed within the enclosure when possible; however, if enclosures are not sized to include the tallow bin(s), then a separate dedicated enclosure with drainage to the sanitary sewer for tallow bins shall be provided. Additionally, organics collection containers will be required for large facilities (Tier 1) in 2022 and smaller businesses (Tier 2) in 2024, per state regulations (AB 1826 and SB 1383).

ii. **Compactor Use To Be Considered**. Developments with food establishments shall consider, and be evaluated for, compactor garbage service. Proper compactor design can result in control of spills and result in potential overall cost savings due to a decrease in pickup and transport frequencies.

iii. **Pretreatment Device Required**. Pretreatment devices(s) and installation of hot and cold water through a mixing faucet with vacuum breaker shall be provided for compactor enclosures used by food establishments, as required by the County Health Department (See Exhibit 2).

iv. **Bin Type Requirement**. Bins should prevent liquids from leaking out; bins may have an internal liner or other preventative measures. Please contact the Franchise Hauler for recommendations.

b) **COMMERCIAL AND INDUSTRIAL DEVELOPMENTS**

i. **Bin Sizing**. Per Milpitas Municipal Code section V-200-3.40, commercial and industrial developments shall be sized for adequate garbage service. Generally, commercial and industrial developments with large volume and those adjacent to residential housing should consider use of compactor services for recycling and garbage. The applicant is alerted that compactors often require less frequent collections and transport resulting in potential overall cost savings. Compactors, however, should not be used for organics collection because the material is putrescible and needs to be collected weekly.

ii. **Recycling Required**. Industrial/manufacturing/retail tenants can generate large amounts of recyclable packaging materials. Per Milpitas Municipal code section XI-10-54.15, applicant shall include enclosure space for recycling services.

- Retail tenants generally require a minimum of two (2) 3-yard front-load recycling containers and space for a minimum of two (2) 3-yard front load garbage containers should be provided. Additional containers may be required for larger users.

- Industrial/manufacturing customers should be evaluated on a case-by-case basis.

iii. **Organics Required**. Per state regulations (AB 1826 and SB 1383), businesses are required to collect organics. Commercial and Industrial developments have the potential to generate organic material from cafeterias or as food waste from tenants. Each commercial or industrial entity needs to be properly evaluated in order to determine the amount of potential material generated.

- Technical Assistance can be provided by the Franchise Hauler to help determine the needs of the commercial or industrial entity.

c) **MULTI-LEVEL,MULTI-FAMILY DEVELOPMENTS**

i. **Recycling Service Area Required.** Per Milpitas Municipal Code section XI-10-54.15, multi-family developments (equal to or greater than 5 units) shall have recycling container service areas.

ii. **Chutes**. Chutes, if provided for on-site collection of material, shall comply with the following guidelines: i. ***Application***. Contact City engineering department if recycled material chutes are proposed since special care must be taken to assure material does not hang up in chutes and to minimize contamination by trash. In addition, a property manager shall be available to monitor the chute daily (including weekends) to check operations, maintain bins and chutes, and avoid nuisance conditions.

- ***Adequate Designated Recycled Area Required***. Provide adequate area for separate recycled material collection adjacent to chute area; property management to transport recycled material to central location for pickup.

- ***Chute Design***.
    1. Provide 16 inch square chute doors (which is smaller than the 24 inch chute diameter) to preclude dumping of large items which may hang up in chute.
    2. Provide chute doors with side panels to avoid hands being caught in doors.
    3. Provide temporary "shut-off door" at end of chute to prevent disposal when receiving trash bins are being changed.
    4. Provide insulation around chute to reduce noise.
    5. Provide sanitary systems to minimize nuisance conditions:
        i. Placement of the manufacturers optional, built-in water cleaning system, where appropriate**
        ii. Use of the deodorizer device, where appropriate***
        iii. Include positive, mechanical air ventilation of at least six (6) room volumes per hour or as designed for specific use by registered engineer. Fan switch shall be located at a convenient location near trash bins.
    6. Provide individual slide-out refuse cabinet with 15 pound plastic bag holder in each residential kitchen for plastic, tie-top disposal bags to be used for disposal into chutes.
    7. For chutes in excess of three floors, a baffle system to reduce the drop impact of material shall be included.
- ***Others***.
    1. Adhere to fire code (City Fire Department will review).
    2. Conform to all Equipment Manufacturer's requirements.

2. **SINGLE-FAMILY DEVELOPMENTS**

a) **Services**. Single-family style service consists of weekly setouts by residents for curb-side pickup at single-family, duplex and triplex units. Pickups are provided for trash/food waste, yard waste and recycled material, each of which is described below.

i. ***Trash/Food Waste Service***. Collection of putrescible and non-putrescible nonhazardous solid, semi-solid and liquid discarded material to be placed into the respective side. The trash/food waste split cart may be placed into 38-gallon, 45-gallon, 64 gallon, or 96-gallon split carts. Extra trash can be placed in trash bags (marked by an extra trash sticker) and set for curbside pickup. Carts may be procured from the Franchise Hauler.

ii. ***Yard Waste Service***. Collection of all plant debris, including grass clippings, leaves, pruning, weeds, branches, brush and tree trunks, as well as other forms of organic waste generated from landscapes and gardens. Yard waste is placed in 96-gallon wheeled carts.

iii. ***Recycled Material Service (Fiber/Metals-Plastics-Glass)***. Collection of material which may be returned to the economic mainstream in the form of raw material for new, reused or reconstituted products. Materials include newspapers, white paper, mixed paper, corrugated cardboard, glass, polyethylene terephthalate (PET) marked 1-7, high density polyethylene (HDPE)~~,~~ untreated wood, bi-metal cans, aluminum cans, ferrous metals, non-ferrous metals, motor oil, or other materials as may be identified from time to time by the City. Recycled material is placed in 96 or 64-gallon wheeled split carts carts provided by the City. Special 38-gallon wheeled split carts carts are available upon request within areas that have limited cart storage space including high-density developments (condominiums, town homes) and mobile home parks, and for senior citizens responsible for paying bills.

b) **Design Considerations**

i. ***Access***. Adequate access for carts should be provided between the curbside setout location and the storage area. Approximate cart sizes are as follows:

- 38-gallon: 27.5 inches in length by 24.5 inches in width by 43.25 inches in height (27.5” x 24.5” x 43.25”). The 38-gallon cart holds up to 119 pounds;
- 45-gallon: 27.5 inches in length by 24.5 inches in width by 43.25 inches in height (27.5” x 24.5” x 43.25”). The 45-gallon cart holds up to 141 pounds;
- 64-gallon: 27.5 inches in length by 24.5 inches in width by 43.25 inches in height (27.5” x 24.5” x 43.25”). The 64-gallon cart holds up to a 200 pound load;
- 96-gallon: 34.375 inches in length x 25.125 inches in width x 44.5 inches in height (33.375” x 25.125” x 44.5”). The 96 gallon holds up to 300 pounds.

ii. ***Storage***. Carts and trash cans must be placed in a location that cannot be seen from the street. Screening of storage areas shall be provided.

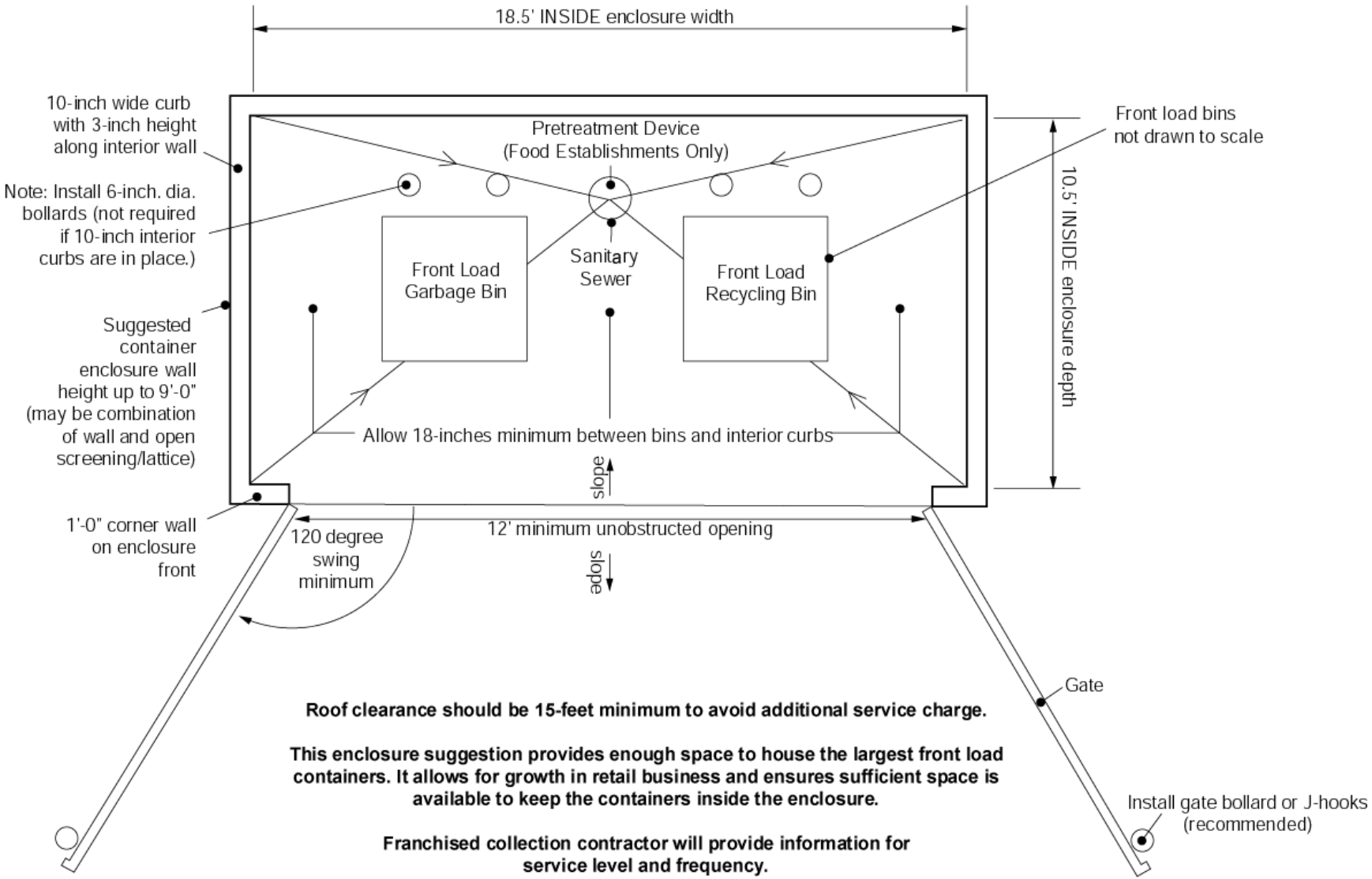
iii. ***Coordination***. Designs shall clearly show proposed storage locations and access route for setouts and setbacks of carts and cans.

* Required for commercial, multi-family bin services. The City's franchised collection contractor for a solid waste service provides review assistance for enclosure dimensions and location(s) to assure proper is for service access, type and frequency for intended development. Coordination with the Planning division is necessary to assure consistency with City planning requirements and guidelines.

** Water cleaning system recommended with over 150 units; water system flow to flush inside chute walls shall discharge to wheeled bucket adequately designed to contain the flushed amount. (Consider installation of sanitary sewer in ground floor trash rooms.)

*** Deodorizers with over 100 units.

Figure 1
Front Load Service Enclosure

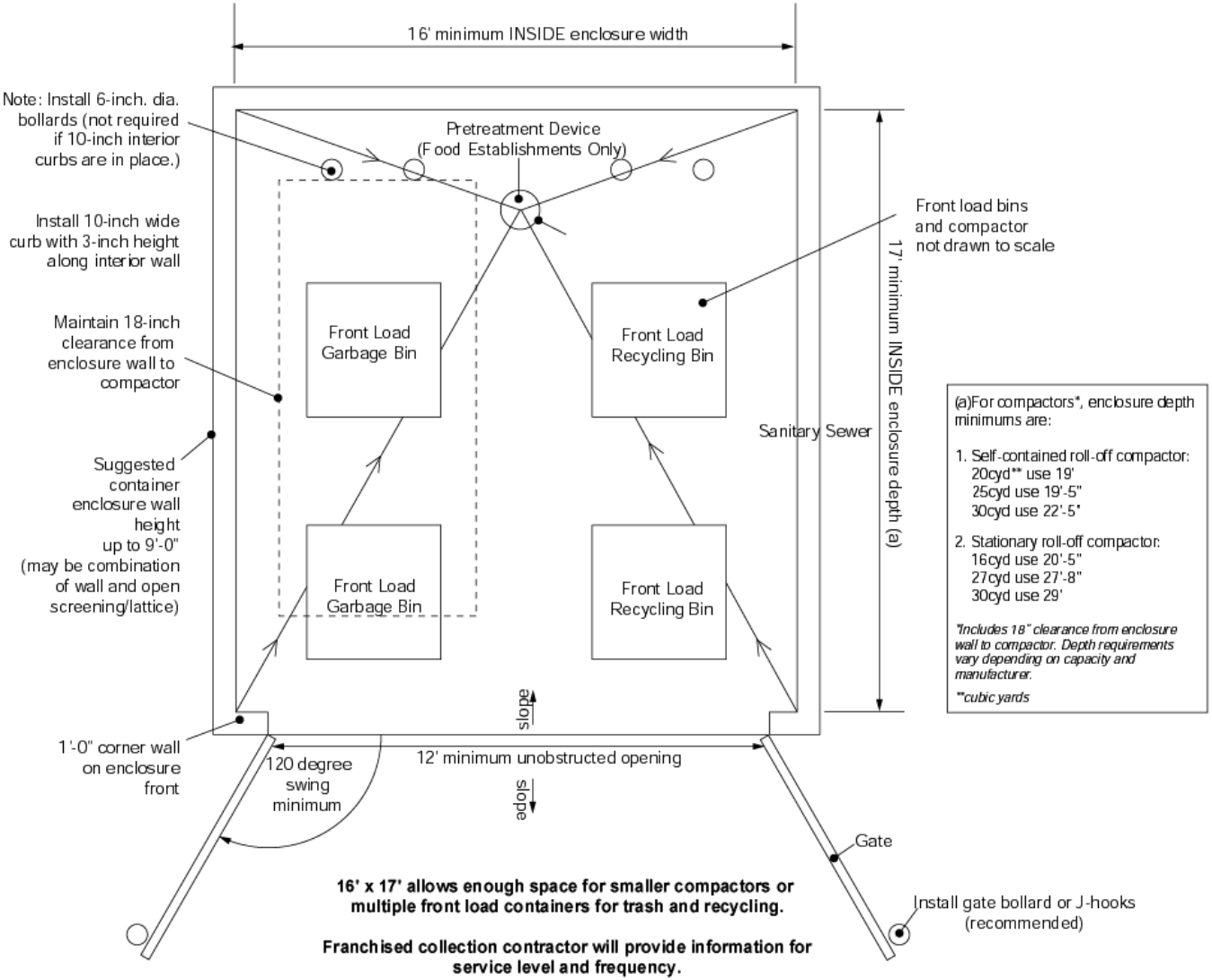


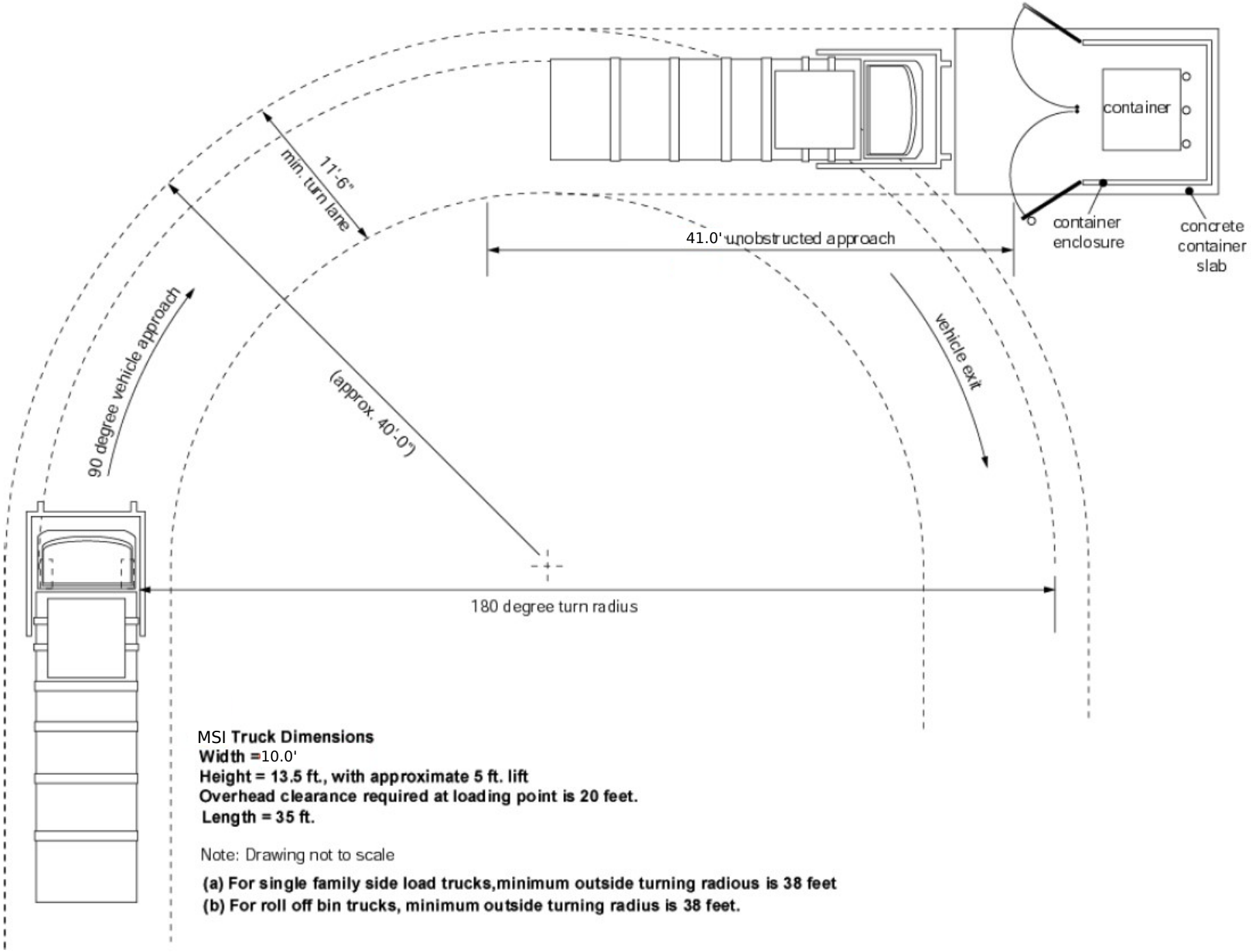
Roof clearance should be 15-feet minimum to avoid additional service charge.

This enclosure suggestion provides enough space to house the largest front load containers. It allows for growth in retail business and ensures sufficient space is available to keep the containers inside the enclosure.

Franchised collection contractor will provide information for service level and frequency.

Figure 2
Combined Services Enclosure
Roll-Off/Front Load Compactor(s) and/or Front Load Open Top Services





MSI **Truck Dimensions**
Width =10.0'
Height = 13.5 ft., with approximate 5 ft. lift
Overhead clearance required at loading point is 20 feet.
Length = 35 ft.

Note: Drawing not to scale

(a) For single family side load trucks,minimum outside turning radious is 38 feet
(b) For roll off bin trucks, minimum outside turning radius is 38 feet.

Exhibit 1. SOLID WASTE GENERATION ESTIMATES

Informational Excerpt:

To assist with estimating the amount of waste that could potentially be generated at the development, The City of Milpitas has put together a waste generation estimation calculator. Most of the information that was used in the development of this calculator is specific to the City of Milpitas so it should not be used for any project that is outside of this jurisdiction.

The Waste Estimation calculator can be downloaded from the following location:

Design Guidelines | City of Milpitas (ca.gov)

Find the Waste Estimation Calculator (WEC) file located under section XXI. SOLID WASTE AND RECYCLING. Read the information that is provided in the Instructions tab (of the document) to have a better idea how the calculator will can be used. You do not need to use this calculator if you already have different calculations that you plan to use.

However, if you choose to use different calculation formulas, please be sure to include them in the Solid Waste Management Plan (SWMP) when that is submitted so that City of Milpitas staff would be able to verify the information when reviewing your design plans.

Disclaimer:

The Waste Estimation Calculator provides estimates utilizing industry averages within the jurisdiction and should not be considered as the definitive forecast of the waste that will be generated on-site by the development/facility. Actual waste generation would vary based upon actual operations, foot traffic, and other factors on-site.

EXHIBIT 2

COUNTY OF SANTA CLARA
DEPARTMENT OF ENVIRONMENTAL HEALTH
CONSUMER PROTECTION DIVISION
1555 Berger Dr. Bldg. 2, 3rd Floor • San Jose CA 95112
Telephone: 408 918-3400 • Fax 408 258-5891
www.ehinfo.org

TO: FOOD OPERATORS, CONTRACTORS, and DESIGNERS

FROM: PLAN REVIEW AND CONSTRUCTION UNIT
CONSUMER PROTECTION DIVISION
DEPARTMENT OF ENVIRONMENTAL HEALTH

DATE: MARCH 25, 2002

SUBJECT: OUTDOOR GARBAGE COMPACTORS

Outside garbage compactors may be installed at retail food establishments under the following conditions:

1. The installation has been approved by the local Building and Planning Departments
2. The entire compactor and storage bin is completely fly, maggot, and rodent-proof, i.e., all doors, covers, and access panels are provided with gaskets and are tight-fitting.
3. Compactors are installed on concrete pads that slope to a sanitary sewer drain. The concrete pad and sewer drain must be accessible for cleaning and designed as follows:
   a) Only the concrete slab under and immediately around the compactor unit is to be tributary to the sanitary sewer drain[1].
   b) All contiguous parking or walkway areas must drain away from the slab to appropriate storm sewer drains.
   c) Rainwater must not drain into the sanitary sewer drain. Installation of a roof system over the area may be necessary. In this case the local Building Department may require a fire suppression system in this structure. Check with the your local Building or Fire Department representative for the current requirements.
4. Hot and cold water, through a mixing-type faucet, and outfitted with an approved anti-siphon device is required[2].
5. The appropriate refuse collection company removes compacted garbage at intervals that comply with local ordinances and this departments requirements.
6. A schedule of cleaning and maintenance is provided at the time of building clearance.

[1] Compactor units that are entirely self-contained, e.g., the crushing unit and container are welded together, and are removed as a unit to the landfill for dumping will be exempted from the sanitary sewer drain requirements.
[2] Not needed if the compactor design prevents leakage as noted above.

County of Santa Clara

Environmental Resources Agency
Department of Environmental Health

Central Office - 2220 Moorpark Avenue, East Wing, Room 100
P.O. Box 26070
San Jose, California 95159-6070
(408) 299-6060 FAX (408) 298-6261
www.ehinfo.org

March 24, 2002

City of Milpitas
Attention: Darryl Wong
455 E Calaveras Bl
Milpitas CA 95035-5479

Dear Mr. Wong,

After careful review of your request to exempt certain compactor designs from the hot and cold water supply requirement, this Department agrees with your request. Food facilities that install *self-contained roll-off compactors* that are designed to be removed as one unit to the landfill for dumping, and are the type that are designed to hold wet waste, will no longer be required to install hot and cold water supply lines. Our handout material has been modified to allow for this design installation.

The modification to our long-standing policy does not come lightly. We are concerned that strip shopping centers that are currently served by stationary roll-off compactors may at some time in the future attract food facilities that generate liquid waste material. As you have noted in your letter, these compactors are unsuitable for that use.

Your planning and zoning departments must be aware of the shopping center's waste removal system and act accordingly to require the installation of the proper compactor design. Waste containers that leak their contents to storm drains would be in violation of RWQCB Storm Water Discharge Permits. This Department does not want to find itself in a situation where we must deal with leaking compactors and center management is unable to properly clean up the leakage without an available water supply in the compactor area.

For additional information or assistance, please feel free to contact me at (408) 299-6564 or by e-mail at richard.fuchs@deh.co.scl.ca.us.

Sincerely,

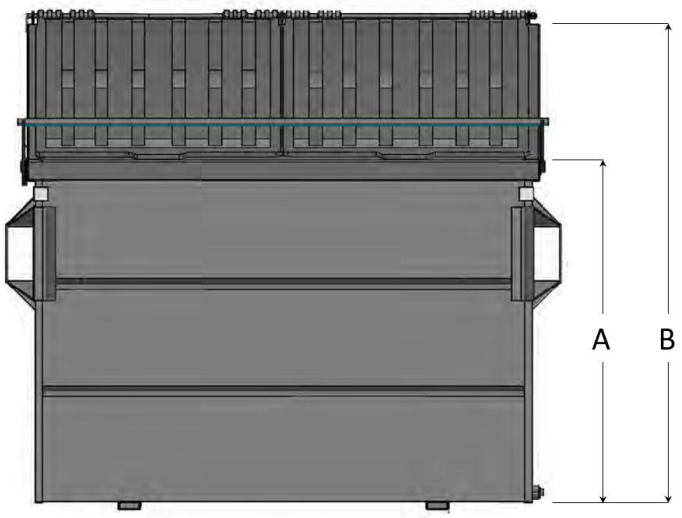
Richard J Fuchs, MPH, REHS
Environmental Health Program Manager
Consumer Protection Division
Department of Environmental Health

Cc: CPD Plan Check Unit
Kurt Fisher, Supervising Environmental Health Specialist

Exhibit 3. MSI FEL Bin Dimensions

FEL SIZE	FRONT HEIGHT	BACK HEIGHT	DEPTH	WIDTH
	A	B	C	D
1YD	28"	28"	24"	72"
2YD	34.5"	41.5"	34.75"	72"
3YD	42"	51"	41.75"	72"
4YD	46.5"	57.5"	50.75"	72"
6YD	50"	69"	66"	72"
8YD	57"	90"	72.5"	72"

*Casters add 8” to height



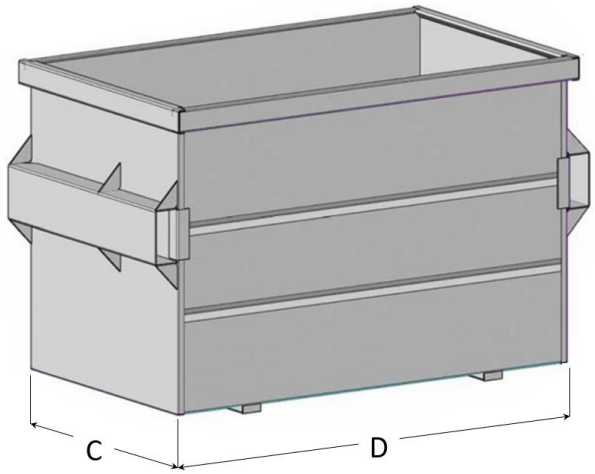
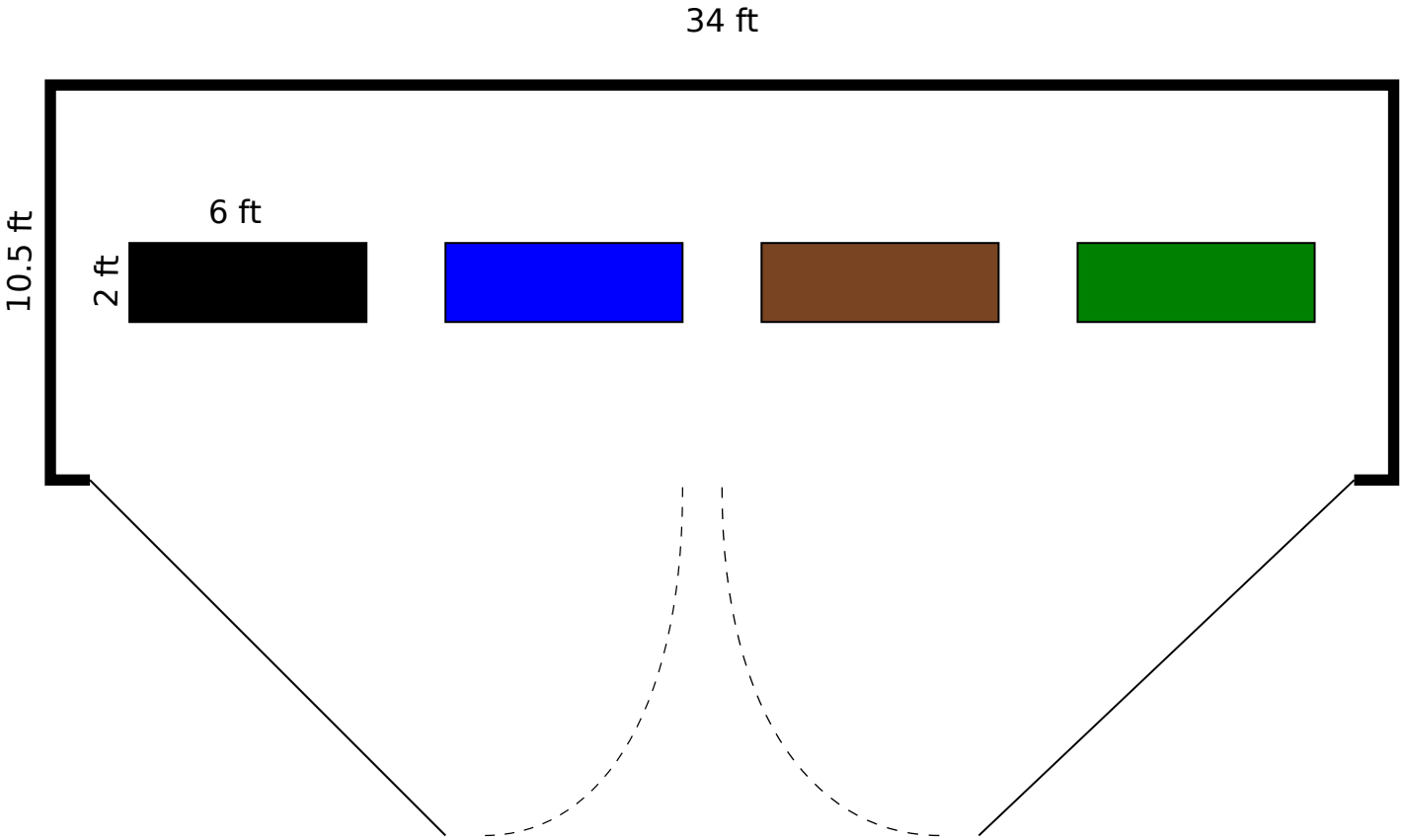
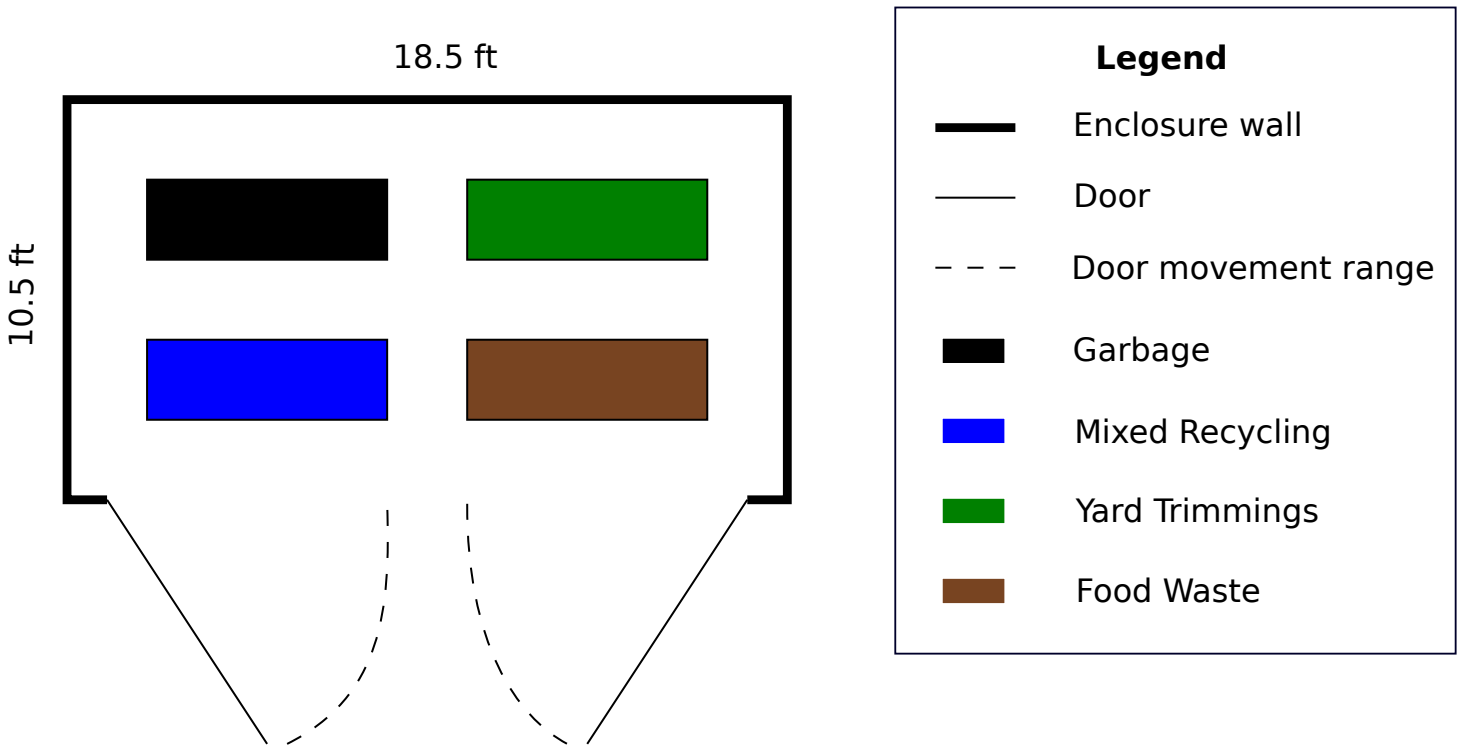


Figure 4. Enclosure Examples

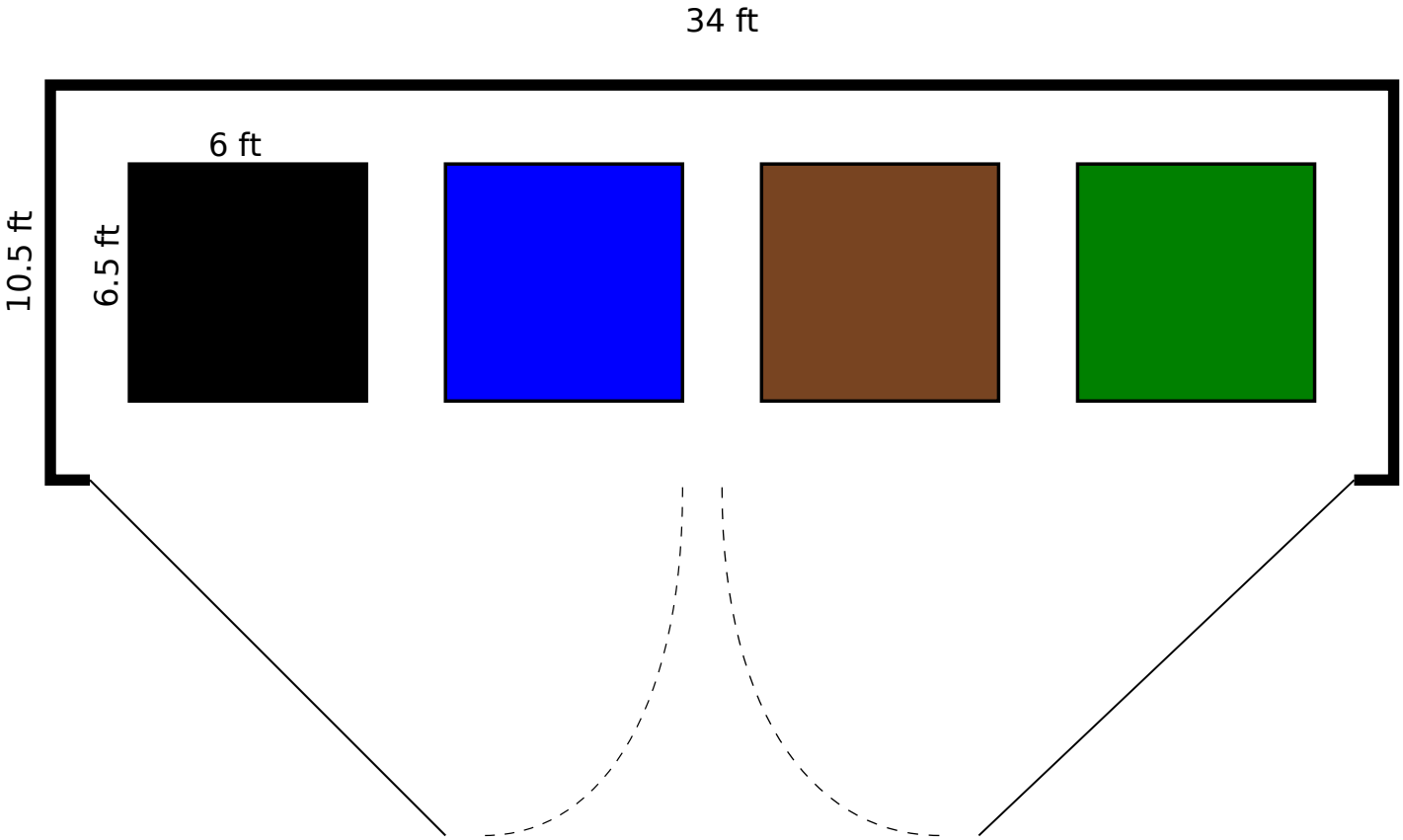


Example Enclosure: four (4) one cubic yard FEL containers, no push/pull service

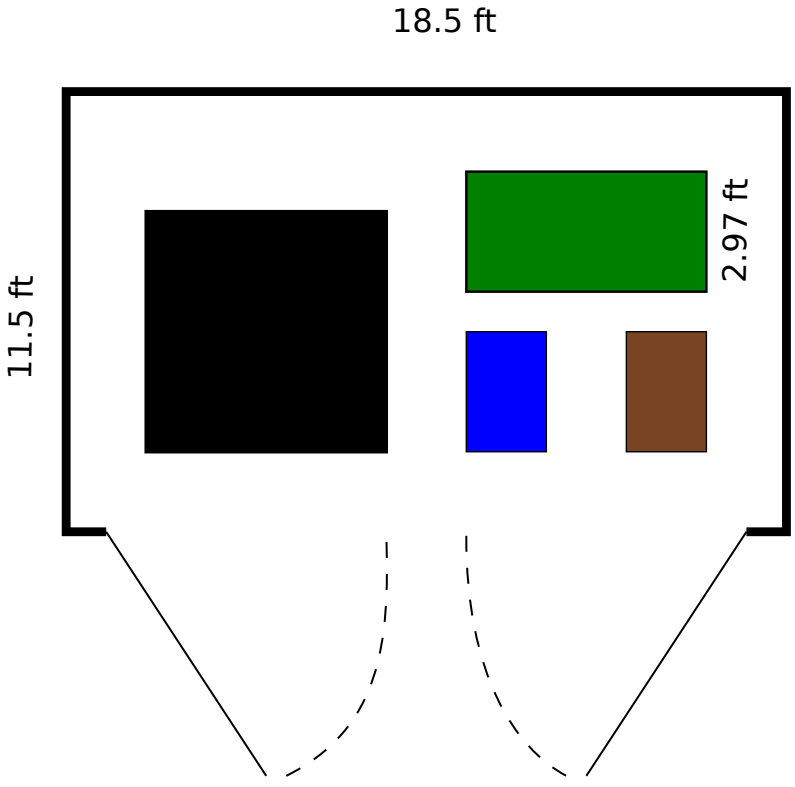


Example Enclosure: four (4) one cubic yard FEL containers, push/pull service

Figure 5. Enclosure Examples

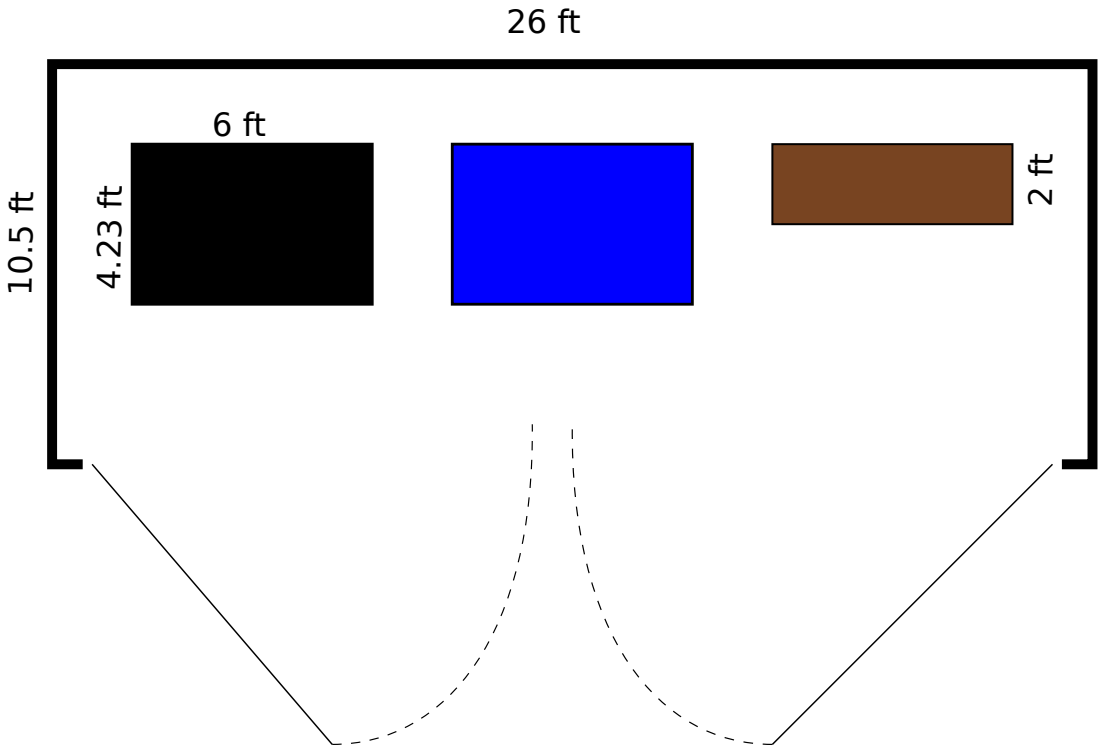


Example Enclosure: four (4) eight cubic yard FEL containers, no push/pull service

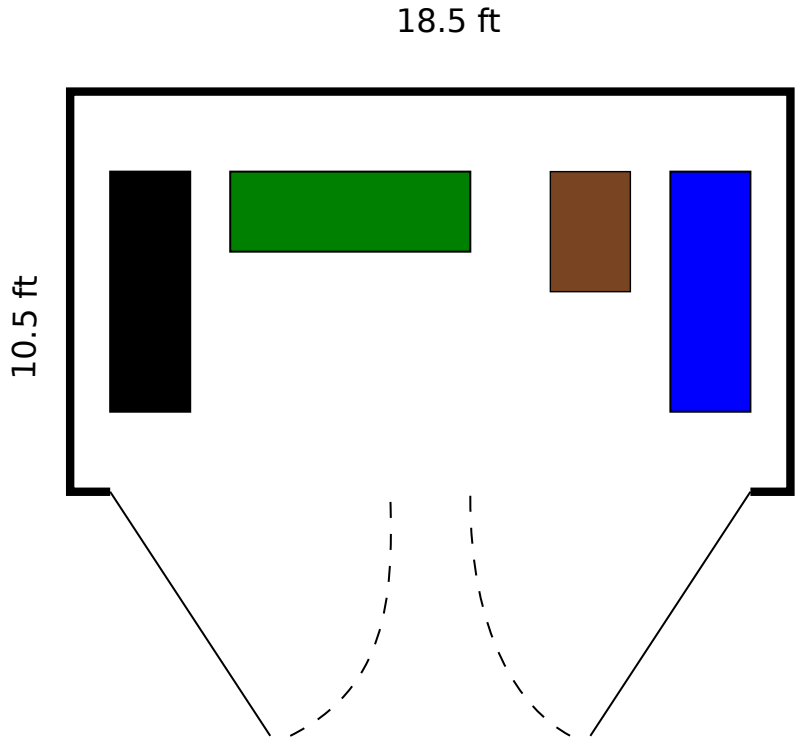


Example Enclosure: One (1) eight cubic yard FEL containers, one (1) two cubic yard FEL container, and two 96 gallon carts, push/pull service for two cubic yard FEL and carts

Figure 6. Enclosure Examples



Example Enclosure: Restauarnt with weekly service; one (1) 4 CY Garbage, one (1) 4 CY Mixed Recycling, one (1) 2 CY Food Waste, no push/pull service, no landscape waste



Example Enclosure: Small office with weekly catered lunch; one (1) CY Garbage, one (1) CY Mixed Recycling, one (1) CY yard trimmings, one (1) 96 gal Food waste, push/pull service