



SOLID WASTE PLAN GUIDE & ENCLOSURE STANDARDS

Each applicant for a land use permit is required to develop and submit a solid waste and recycling plan as part of the permit process. The plan must demonstrate those steps the applicant will take to meet the State mandate to reduce or divert 50% of the waste generated by all residences and businesses in the City of Brentwood.

The *Plan Guide* includes pre-construction, construction and operational phase of each project. Some helpful generations guidelines are included as well as some conversions to help assess the level of collection service required for each project. Each applicant is free to develop and attach their own, more detailed plan if they choose.

The *Enclosure Standards* detail the standard bin sizes and offers direction on the dimensions, placement and construction of the solid waste enclosure.



If you have any questions regarding the *Plan Guide* or the *Enclosure Standards*, please contact:

Gary Parenti
Solid Waste Supervisor
925-516-6090
(email: gparenti@ci.brentwood.ca.us)

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PLAN GUIDE

PRE-CONSTRUCTION

INITIAL Contact the City Planning Department; determine if you are required to comply with the Construction & Demolition Recycling Ordinance (Chapter 8.40). If you are covered, complete the necessary paperwork.

INITIAL Get a copy of the Builder's Guide for a list of local recycling facilities from the Planning Department. Reuse dirt, concrete, asphalt, wood, green waste, metals, etc. on site whenever possible.

INITIAL Divert unused dirt, concrete, asphalt, wood, green waste, metals etc. to a recycling facility – do not landfill these reusable materials!

INITIAL Provide adequate bin enclosure space for solid waste and recycling collection (PLEASE REFER TO CITY ENCLOSURE STANDARDS)

CONSTRUCTION

INITIAL Reuse dirt, concrete, asphalt, wood, green waste, etc. on site whenever possible.

INITIAL Divert unused dirt, concrete, asphalt, wood, green waste, etc. to a recycling facility – do not landfill these reusable materials! Refer to the Builder's Guide for a list of local recycling facilities.

INITIAL If you are required to follow the requirements of the Construction & Demolition Recycling Ordinance (Chapter 8.40), **KEEP TRACK OF ALL OF YOUR RECEIPTS!! Have all documentation ready for review prior to requesting final inspections.**

GENERAL

INITIAL Include solid waste and recycling information in your employee orientations, policy manuals, lease agreements and CC&R's.

INITIAL Color code inside containers and provide graphic signs that instruct your employees and/or customers to separate materials in the containers used to transport recyclables and refuse to the outdoor enclosures.

Review your operations at least annually, contact the city for a free waste audit to reduce waste and keep your solid waste services cost effective and up to date.

DESIGN

INITIAL Incorporate adequate space for trash, green waste and recycling containers inside the facilities where waste and recyclables will be generated. Incorporate space for recycling containers in the enclosure where they will be stored for collection. Design in a manner that facilitates reuse. **DO NOT PLAN ON STORING ANY OTHER THINGS IN THIS ENCLOSURE!**

Recyclable materials that are currently recycled include:

- plastic bottles and containers (#1-7) , *no shrink wrap, bags or polystyrene peanuts*
- glass bottle and jars, *no ceramics, plate glass or windows*
- aluminum & tin cans, pie tins, small metal items
- mixed paper including junk mail, colored paper, office paper & magazines
- newspaper and cardboard boxes, including cereal boxes, phone books
- wood, dimensional lumber, *no treated lumber*
- concrete and asphalt rippings (special bins required)
- yard waste including tree leaves, branches and grass clippings

Solid Waste Generation Guidelines

<u>Classification</u>	<u>Building Type</u>	<u>Quantities Generated</u>
Apartments	No kitchen facilities	.25 - .50 C.Y./Unit/Mth
	Single/No Children	1.50 – 2.00 C.Y./Unit/Mth
	Family	2.00 – 2.50 C.Y./Unit/Mth
Commercial Buildings	Office	1.00 C.Y./10,000 Sq. Ft./Day
	Department Store	1.00 C.Y./2,500 Sq. Ft./Day
	Supermarkets	1.00 C.Y./1,250 Sq. Ft./Day
	Drugstores	1.00 C.Y./2,000 Sq. Ft./Day
Hotels & Motels	High Occupancy (90%)	.50 C.Y./Room/Week w/restaurant
	High Occupancy (90%)	.24 C.Y./Room/Week w/o restaurant
Institutions	Nursing Homes	1.00 C.Y./20 Persons/Day
	Retire. Homes	1.00 C.Y./20 Persons/Day
Restaurants	Family Style	1.00 C.Y./250 Meals/Week
Schools	Grade Schools	1.00 C.Y./8 Rooms/Day
	High Schools	1.00 C.Y./10 Rooms/Day
	Universities	Audit required

Note: These guidelines are approximate and can be helpful when observation of the current service level is not possible, or, in pre-construction planning. Recycling services may reduce the above volumes.

Helpful Conversion Table for Various Containers

1 gallon.....	0.134 cu. ft.
27 cu. ft.....	1.00 cu. yd.
1 cu. yd.....	203 gallons

One cubic yard is approximately six (6) 35-gallon carts

One cubic yard is approximately three (3) 65-gallon carts

One cubic yard is approximately two (2) 95-gallon carts

To find container capacity in cubic yards, measure Length X Width X Height in inches and divide by 46,656. This will give you the approximate volume in cubic yards.

**** It is important to provide enough service as to prevent material from overflowing from the bins or being stored on the ground!!**

Any debris uncontainerized will not be serviced.

ENCLOSURE STANDARDS

A. BIN SIZES

1. Commercial bins for refuse or recycling come in sizes ranging from 1 cubic yard (cu yd) to 8 cu yd (see Table A for actual dimensions). Sizes 1 cu yd – 4 cu yd are equipped with wheels for maneuvering, while sizes 5 cu yd – 8 cu yd are stationary (no wheels). If a stationary bin is used, the bin **MUST** be directly accessible by our collection truck. (See Diagram A below)

2. Smaller 96-gallon carts are available also for greater flexibility, for limited-sized lots or for low-volume generators of refuse or recycling (see Table A for actual dimensions).

TABLE A

Be sure to indicate on the plans the number and size of bins.

<u>SIZE</u>	<u>HEIGHT</u>	<u>WIDTH</u>	<u>LENGTH</u>	<u>FOOTPRINT</u>
				(rounded)
35 gallon cart	38.50 inches	18.88 inches	22.50 inches	3 sq. feet
65 gallon cart	42.12 inches	25.25 inches	26.38 inches	5 sq. feet
95 gallon cart	46.50 inches	26.38 inches	33.62 inches	6 sq. feet
1 yard front-load bin	36.00 inches	30.00 inches	72.00 (*) inches	15 sq. feet
2 yard front-load bin	41.50 inches	29.50 inches	72.00 (*) inches	15 sq. feet
3 yard front-load bin	50.50 inches	34.50 inches	72.00 (*) inches	17 sq. feet
4 yard front-load bin	57.00 inches	41.50 inches	72.00 (*) inches	21 sq. feet
5 yard front-load bin	62.00 inches	50.50 inches	72.00 (*) inches	25 sq. feet
6 yard front-load bin	71.00 inches	58.00 inches	72.00 (*) inches	29 sq. feet
8 yard front-load bin	89.00 inches	58.00 inches	72.00 (*) inches	29 sq. feet
10 yard roll-off box	3.25 feet	8.00 feet	12.00 feet	96 sq. feet
20 yard roll-off box	4.00 feet	8.00 feet	18.00 feet	144 sq. feet
30 yard roll-off box	5.50 feet	8.00 feet	20.00 feet	160 sq. feet
40 yard roll-off box	7.25 feet	8.00 feet	20.00 feet	160 sq. feet

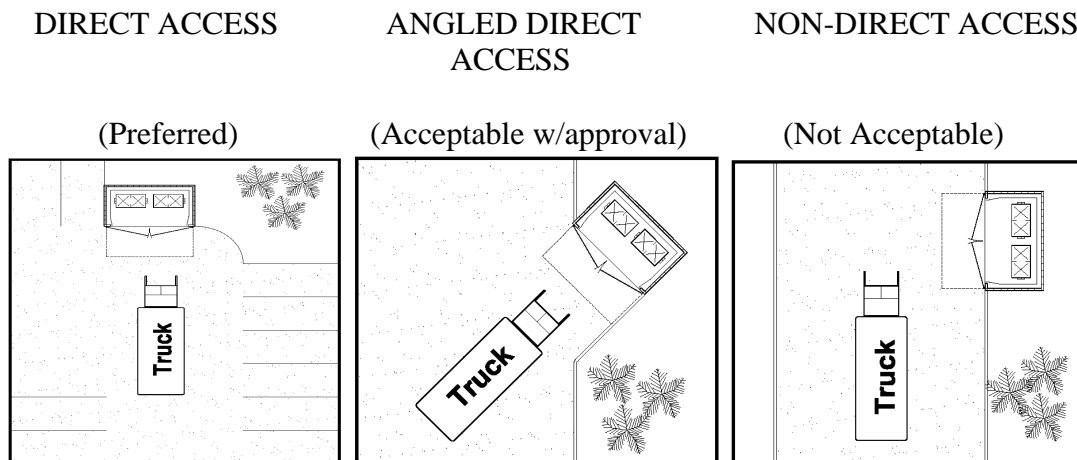
(*) Add eight (8) inches to the overall length of front-load bins to include 4-inch pockets on each side

- *Some of the above measurements are approximated due to variations from manufacturers. Therefore, if you need a precise measurement, please call our office.*

B. ENCLOSURE DESIGN, LOCATION & ACCESSABILITY

1. We require all bins/enclosures to have *direct access* for our 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 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 is included as part of the service provided.

DIAGRAM A



Enclosures with poor or no accessibility or enclosures with atypical orientations are not recommended 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.

2. 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 must be in a straight line.*
3. Bins shall not be placed in front of fire hydrants and no bin shall be placed within 5 feet of a combustible wall, opening or combustible roof eave line.
4. Trash enclosures cannot be installed behind parking spaces.

INITIAL

C. TURNING RADIUS REQUIRED FOR ACCESS TO ENCLOSURE

Must be adequate for a 3-axle truck. The overall length, including the forks is 36 feet. Minimum outside turning radius is actual is 46.5 feet. Please detail this on your submitted plans. (See attached Diagram B)

INITIAL

D. HEIGHT CLEARANCE OF THE ENCLOSURE APPROACH

Refuse Trucks require at least 18 feet of vertical clearance over the entire approach to and from the enclosure and 32 feet above the enclosure itself or wherever the bin will be serviced. No Roofs Allowed!

INITIAL

E. 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 62,000 lbs. Gross Vehicle Weight (GVW).

INITIAL

F. STRESS CONCRETE APRON

1. A concrete stress apron shall be installed to cover the front of the 10 feet x 18 feet enclosure and extend out an additional 8 feet from the enclosure opening. The apron shall be engineered to withstand up to 20,000 lbs. of direct force from a single truck axle.
2. Apron surface shall be the same elevation as the enclosure pad threshold and the surrounding surfaces, with a slope of 1/8 inch per foot away from the enclosure pad.
3. Apron must extend 8 feet from the enclosure pad through the width of the enclosure opening.

INITIAL

G. ENCLOSURE CONCRETE PAD

1. Enclosure pad shall be engineered to withstand up to 20,000 lbs. of direct force from a single truck axle.
2. Enclosure pad surface shall be the same elevation as the apron threshold.

H. ENCLOSURE – (See Specification Detail ST-34 and ST34a)

1. Material

Generally, the material should match the exterior surface of the building, but SEE THE PLANNING DEPARTMENT GUIDELINES!

Reinforced masonry or concrete block is the typical standard.

2. Height

Minimum 6 feet or if the bins are greater than 6 feet, at least 6 inches above the top of the bin. No Roofs Allowed.

3. Inside Dimension

- a) The minimum interior dimension for a trash enclosure needed to house at least two four (4) cubic yard bins is 18 feet x 10 feet. *Interior dimensions may increase depending on the size and number of bins.*
- b) The enclosure must be large enough to provide a 2-foot clearance from the interior walls to each side of the bins.

4. Wheel Stops

- a) Provide wheel stops or bumpers (e.g. 6 inch high curbs) set back 10 inches from each wall to prevent damage to the interior walls.
- b) Angle and extend the wheel stops inward to the edge of the enclosure opening to protect the wall edge or posts at the gate opening.

5. Gates/Doors

- a) A separate, additional pedestrian entrance, gateless if possible, is strongly encouraged from the back or the side. This should not take away from the 18x10' enclosure footprint.
- b) Gates shall be solid metal with outside handles on each door and a slide latch to secure the doors.
- c) Gated opening for ingress/egress of bins must be a minimum of 16 feet wide with no posts in the middle, place gate posts outside this span to avoid reducing the span.
- d) Use bolts, not screws, to secure gate to the poles or walls.
- e) 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 in the ground a minimum of 4 inches into the ground. (See cane bolts and slide bolt detail in ST-34a).
- f) Hung gates must have a 4-inch clearance off the finished pad or apron *and surrounding curbs*.

- g) Gates in the opened position shall not infringe on the traffic aisles and open to at least 135 degrees when secured open.

6. Lighting

- a) The area around and inside the enclosure should be provided with adequate lighting.

7. No Parking Signs

- a) The area directly in front of the enclosure doors shall have “NO PARKING” painted on the ground and doors signs stated the same posted with adequate lighting of the signage.

8. Storage Inside the Enclosure

- a) The property owner shall ensure that no other materials (i.e. hazardous wastes, grease bins, cleaning supplies, etc.) are stored in the enclosure. The enclosure is strictly for the storage of solid waste containers.

I. STORM WATER COLLECTION

- 1. All properties shall comply with the Federal Clean Water Act.
- 2. The trash enclosure pad shall be designed to drain to a pervious surface through indirect soil infiltration in accordance with the Contra Costa Clean Water Program Stormwater C.3 Guidebook, which can be referenced from the following website link:

<http://cccleanwater.org/construction/nd.php#Guidebook>
- 3. Contact the City Engineer for any specific stormwater concerns.

Please sign below to document that you have read and understand the above *Plan Guide* and *Enclosure Standards*, and that the below listed project fully complies with the requirements outlined above.

PROJECT NAME _____

PERMIT # _____

PROJECT ADDRESS _____

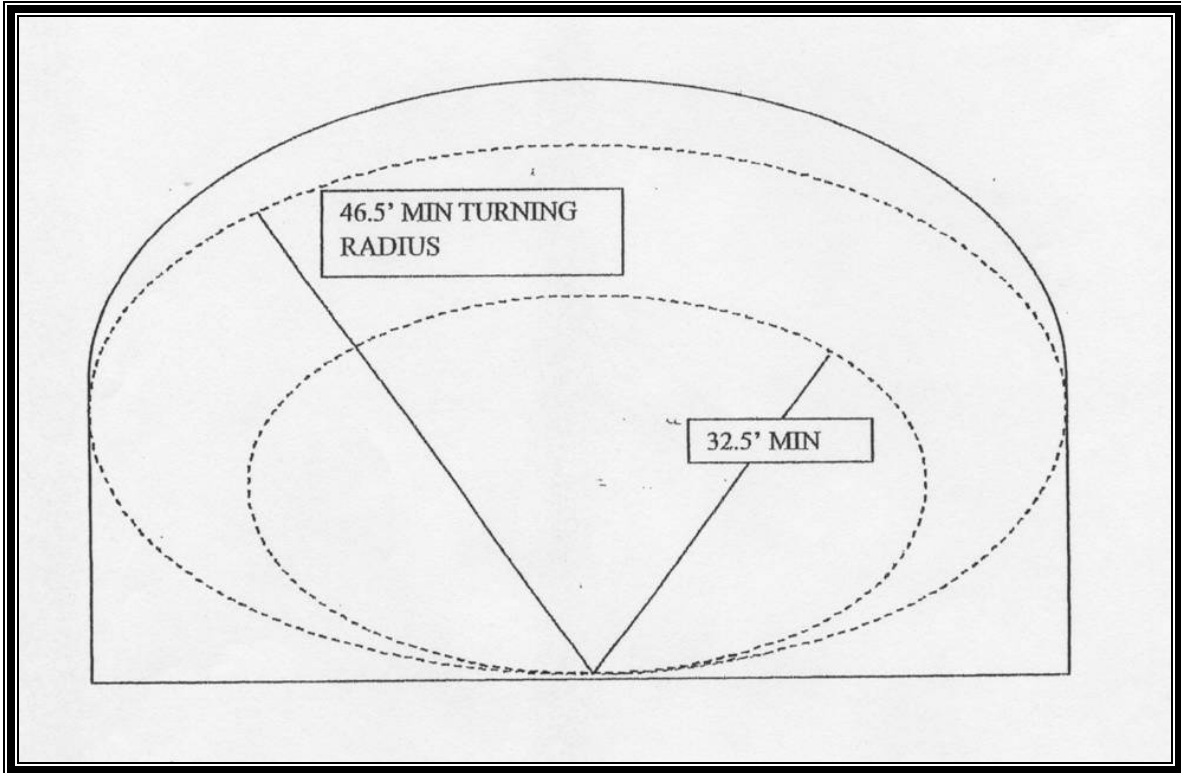
CONTACT NAME _____

PHONE NUMBER _____

SIGNATURE _____ DATE _____

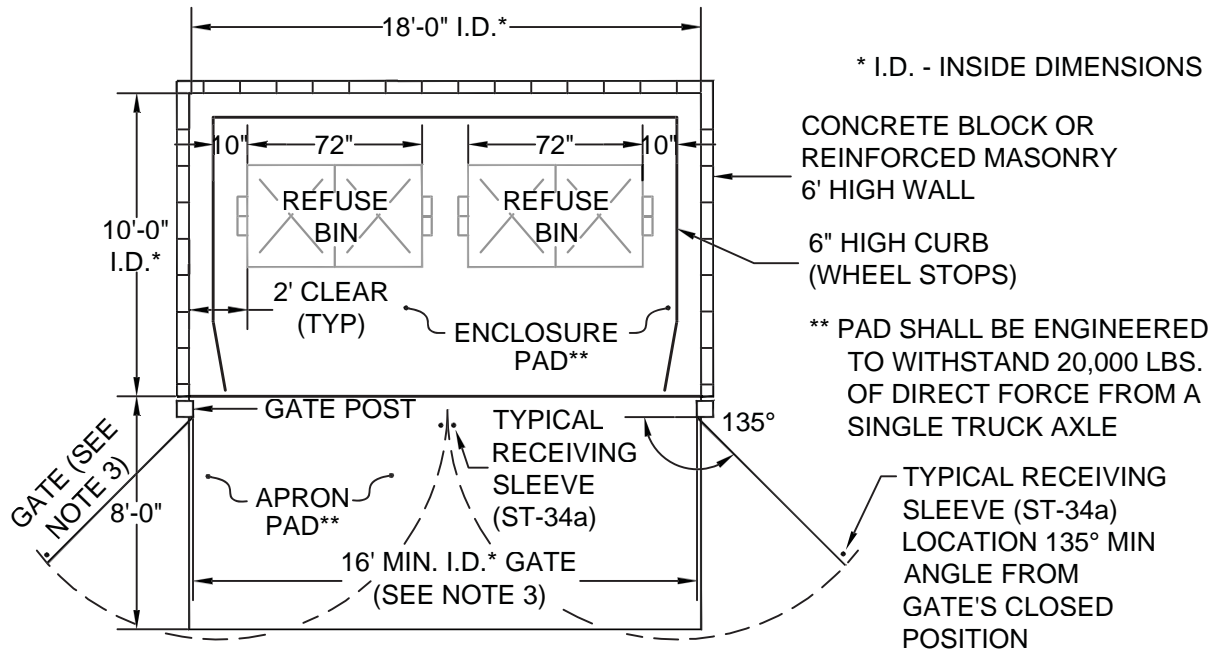
DIAGRAM B

MINIMUM TURNING PATH FOR GARBAGE TRUCKS



TRUCK IS APPROXIMATELY 32 FEET LONG, 8 FEET WIDE AND 13' - 4" IN HEIGHT.

MINIMUM OF 50 FEET IS REQUIRED IN FRONT OF ENCLOSURE FOR TRUCK MANEUVERING.



NOTES:

1. THIS STANDARD PROVIDES SOME, BUT NOT ALL REQUIRED SPECIFICATIONS. SEE THE "SOLID WASTE PLAN GUIDE AND ENCLOSURE STANDARDS" IN THE ENGINEERING PROCEDURES MANUAL FOR ADDITIONAL DETAILS.
2. A MINIMUM OF 32' VERTICAL AND 50' HORIZONTAL CLEARANCE OVER THE ENTIRE APPROACH TO AND FROM THE ENCLOSURE SHALL BE PROVIDED. NO ROOFS ALLOWED.
3. GATES SHALL BE SOLID METAL WITH CANE BOLTS/SLEEVES (SEE ST-34a) IN THE OPEN AND CLOSED POSITION. EACH GATE, WITH A MINIMUM TOTAL SPAN WIDTH OF 16' SHALL SWING OPEN A MIN OF 135° FROM CLOSED POSITION. HUNG GATES SHALL HAVE A 4" CLEARANCE OFF THE FINISHED PAD OR APRON AND SURROUNDING CURB.
4. THE TRASH ENCLOSURE PAD SHALL BE DESIGNED TO DRAIN TO A PERVIOUS SURFACE THROUGH INDIRECT SOIL INFILTRATION IN ACCORDANCE WITH THE CONTRA COSTA CLEAN WATER PROGRAM STORMWATER C.3 GUIDEBOOK (REFERENCE WEBSITE: <http://cccleanwater.org/construction/nd.php#Guidebook>). CONTACT THE CITY ENGINEER FOR ANY SPECIFIC STORMWATER CONCERNS.
5. THE EXTERIOR OF ENCLOSURE SHALL COMPLY WITH STANDARD CONDITIONS OF APPROVAL FOR COMMERCIAL AND INDUSTRIAL PROJECTS. NO ENCLOSURE SHALL BE INSTALLED BEHIND PARKING SPACES.
6. ONLY SOLID WASTE CONTAINERS ARE ALLOWED INSIDE THE ENCLOSURE. GREASE STORAGE BINS, SOILED RAG STORAGE, ETC. SHALL NEVER BE STORED IN THE ENCLOSURE. (Not To Scale)



PUBLIC WORKS DEPARTMENT

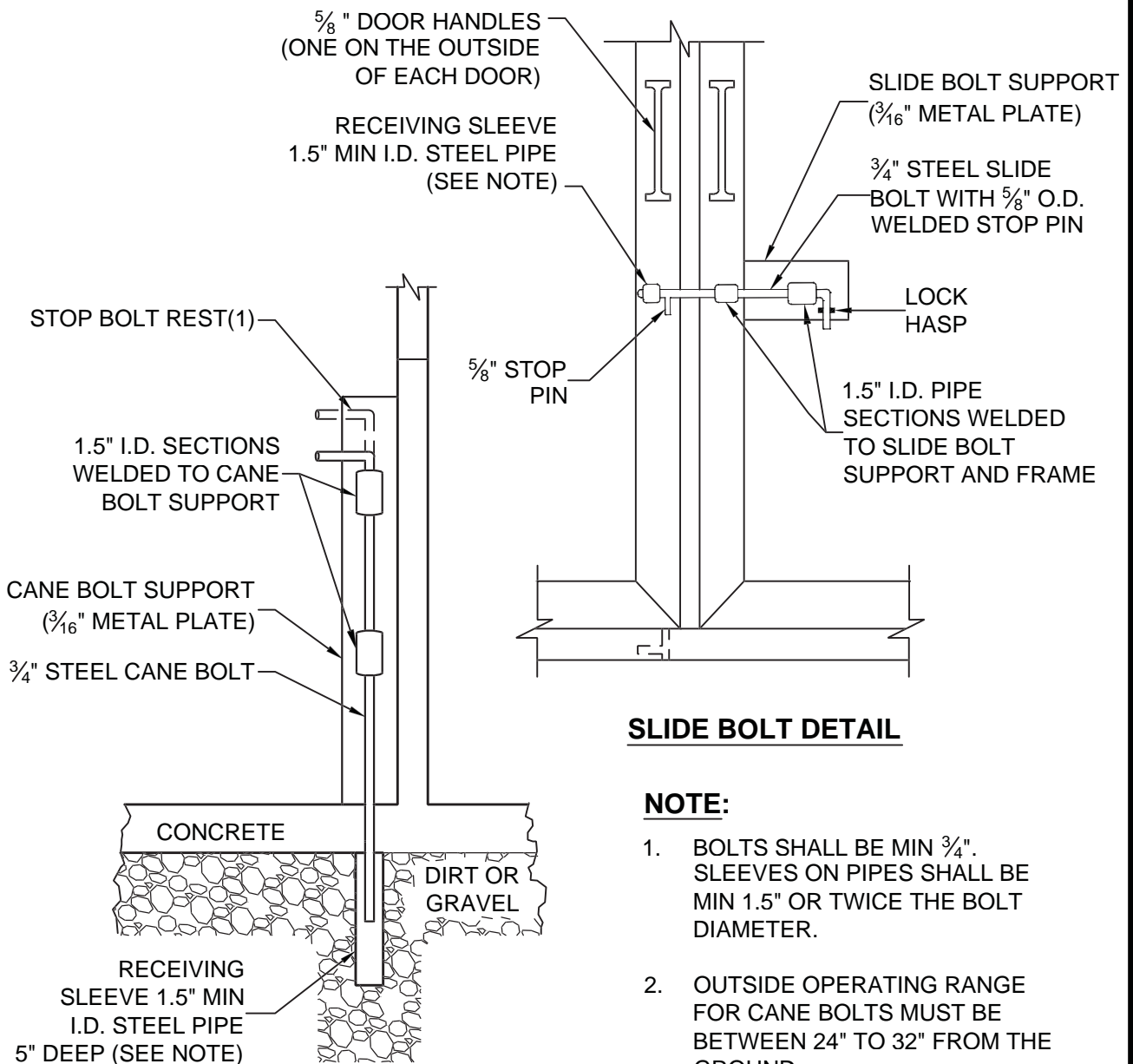


SOLID WASTE ENCLOSURE

B. Grewal
BALWINDER S. GREWAL CITY ENGINEER

DATE: JAN. 18, 2007
REVISED: DEC. 31, 2013

SHEET No.
ST-34



SLIDE BOLT DETAIL

NOTE:

1. BOLTS SHALL BE MIN 3/4". SLEEVES ON PIPES SHALL BE MIN 1.5" OR TWICE THE BOLT DIAMETER.
2. OUTSIDE OPERATING RANGE FOR CANE BOLTS MUST BE BETWEEN 24" TO 32" FROM THE GROUND.
3. CANE BOLT MUST BE MOUNTED ON THE OUTSIDE OF DOOR.

CANE BOLT DETAIL

(Not To Scale)



PUBLIC WORKS DEPARTMENT



SOLID WASTE ENCLOSURE BOLT DETAILS

Balwinder S. Grewal
 BALWINDER S. GREWAL CITY ENGINEER

DATE: JAN. 18, 2007
 REVISED: DEC. 31, 2013

SHEET No.
ST-34a