

# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

### Types of Bicycle Parking

**Bicycle Lockers (Class I)** - Bicycle lockers are the highest security type of bicycle parking. The bicycle is fully enclosed and protected from weather and from potential thieves. Bicycle lockers are rented by the season or year. Although bicycle lockers provide long term high security they are the most expensive type of bicycle parking. Bike lockers also take up more space than other types of bike parking and require enough room to get a bike in or out of the compartments. Because of the cost, bicycle lockers need to be placed in high density locations. In secure locations, locker windows may be required so that security officers may look into the storage compartments. Most lockers accommodate two bicycles and are accessible on both ends. It is important that bicycle lockers be placed on a well drained concrete surface and that snow is cleared.



Above: Ritz Lot lockers.



Above: Public Service Center lockers.



Above: Federal Courthouse Ramp lockers.



Above: Cedar/Riverside LRT Station lockers.



Above: Federal Courthouse Ramp lockers.



Above: Cedar/Riverside LRT Station lockers.

# Bicycle Facility Design Guidelines

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**Bicycle Racks (Class II)** - Class II bicycle parking provides higher security than Class III lockers by locking both the front and back wheels. The styles shown also include a compartment for storing bicycle equipment such as a helmet, gloves, or other accessories. This type of bicycle parking will also accommodate both padlocks and u-locks. Class II bicycle parking is most often placed in areas where Class I lockers do not fit or are not feasible. Although Class II bicycle parking is more expensive than Class III racks, Class II bicycle parking is ideal for locations with high bicycle theft and this style is preferred by those with more expensive bicycles. Class II bicycle racks should be placed where there is weather protection and in highly visible locations. If located outside, this type of parking must be kept clear of snow/ice.



Above: Leamington Ramp racks.



Above: 10th Street Ramp racks.



Above: 5th Street Ramp racks.



Above: 7th Street Ramp racks.



Above: Leamington Ramp racks.



Above: North Loop Ramp racks.

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### Types of Bicycle Parking

**Bicycle Racks (Class III)** - Class III racks are the most popular and economical type of bike rack. Class III racks come in many shapes and styles and are quite versatile. Class III racks are designed to provide short term parking in front of schools, businesses, and at parks. Class III racks take up less space and are cheaper than a Class I locker or Class II bicycle parking, but are less secure. Class III racks are often placed on public sidewalks and can be effectively integrated with bus stops and transit shelters. Class III racks can also be designed with a custom look and can be painted any color. Class III racks should be mounted in concrete for maximum security, however rail mounted racks may be placed on grass surfaces.



**Above:** Guthrie Theatre bike racks.



**Above:** Lyn-Lake area bike racks.



**Above:** Minneapolis Riverfront bike racks.



**Above:** University of Minnesota bike racks.



**Above:** MCAD bike racks.



**Above:** Grain Belt Brewery bike racks.

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### Types of Bicycle Parking

**Shelters** — Bicycle Shelters can significantly increase bicycling to a particular area and are preferred by bicyclists. However, shelters can be quite expensive, require a significant amount of maintenance, and take up additional space. Bicycle shelters may not be constructed of glass and must properly drain water. The roof must be designed to hold the weight of snow. Similar to bus shelters, there may be opportunities for advertisements or billboards on shelter walls. Shelters must be well lit and must be swept on a regular basis. In addition, shelters can not obstruct visibility in the public right-of-way.



Above: Bicycle shelter in Erlangen, Germany.



Above: Bike shelter at Camosun College in Victoria, BC.



Above: Large bicycle shelter at 3M campus in Shanghai, China keeps bicycles protected from the elements.

# Bicycle Facility Design Guidelines

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### Types of Bicycle Parking

**Shelters**— Covered bicycle parking helps protect bicycles from wind, snow, and rain. Some types of bicycle parking shelters also allow for kiosks with bicycle route maps. As can be seen from the photos below there are a number of styles and treatments available.



Above: New York City.



Above: Missoula, Montana.



Above: Portland, Oregon.



Above: Bremen, Germany



Above: University of Victoria.



Above: Münster, Germany



Above: Madison, Wisconsin



Above: Western Washington University.



Above: Luzern, Switzerland



Above: Oberlin College, Ohio

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### Bicycle Parking Guidelines

**Choosing the Appropriate Style—** Choosing the appropriate style of bicycle rack is based on how much security is required at a location. Available space is also factor in determining what style of rack should be installed. Some rack styles take up more space than others and position parked bicycles differently. Choosing the right bike rack involves looking at utility locations, fire escapes, sidewalk dimensions, and visibility. Bike racks should reflect the character of the area. Property owners are often given a list of preselected styles of racks to choose from based on the space available. Class III racks typically come in galvanized, powder coated, or stainless steel. Cost also is a major factor when choosing the style.

**Choosing the Number of Bicycle Parking Spaces—** Bicycle parking demand and cost are the two major factors when choosing the number of bicycle parking spaces. One clear indicator bicycle racks are needed is when a large number of bicycles are attached to poles, meters, and trees in the right-of-way. Determining the number of employees or customers that bike to a given destination at a given time is also helpful in determining the correct number of racks at a location. Future growth should be considered, but it is recommended that bicycle racks be installed as needed due to cost. Minneapolis Ordinances prescribe the number of needed bike parking spaces at new developments based on square footage. In Minneapolis 2-3% of the population bikes to destinations. According to the Thunderhead Alliance, Minneapolis has more bicycle parking per capita than any other major city in the country; four times higher than any other city, with over 4,000 bicycle parking spaces.



**Photo:** This bicycle rack in Washington D.C. sends a clear message to bicyclists about where to park.



**Photo:** Bicycles will attach to anything they find if ample bicycle parking is not available. Shown above are bicycles attached to a fence near an event in St. Paul, MN.



**Photo:** Bicyclists have yet to discover this bike rack in Dublin, Ireland. Bike racks should be placed in locations where they are likely to be used, such as high density business nodes, grocery stores, schools, and parks.

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### Bicycle Parking Guidelines

**Number of Bicycle Parking Spaces—**  
Examples of bicycle parking demand from across the world.



Above: Amsterdam, Netherlands.



Above: Dublin, Ireland.



Above: Leuven, Belgium.



Above: Malmo, Sweden.



Above: Dubai, UAE.



Above: Rome, Italy.

# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

### Bicycle Parking Guidelines

**Placement Considerations (Class I)**—Below are some placement factors that need to be considered:

- There needs to be at least 3 feet of clearance in front of the locker door to allow for bikes to get in and out.
- Bike lockers must be placed away from utilities (sewer, water, gas, and electricity).
- Bike lockers must not obstruct a sidewalk and must be placed on a flat concrete surface.
- Bike lockers may not be directly placed in front of windows and doors.
- Bike lockers shall not be placed in a spot that blocks safe sight-lines for motor vehicles.
- Bike lockers should not be placed in front of a loading dock or unloading area at a bus stop.
- Bike lockers should be placed in a well lit area that is not hidden from public views. Areas that are under surveillance are recommended for bike lockers.
- It is recommended that lockers be placed in a covered location such as a parking ramp, although some lockers have been designed to withstand outdoor conditions.
- Lockers should be placed in high density areas. Due to high costs, surveys should be done to determine the demand for lockers.



**Above:** This constrained location requires bikers to mix with vehicles at the entrance of a parking ramp. There is also limited space for bicyclists to get in and out of the bike lockers.



**Above:** This locker is located in a poorly lit area and is secluded from public view. Personal safety is an important consideration when placing a bicycle locker.



**Above:** These lockers are placed in a convenient location with enough room to access the bicycles.



**Above:** This constrained location makes it difficult for bikers to access the lockers in back.

## Bicycle Facility Design Guidelines Chapter 5—Bicycle Parking

### Bicycle Parking Guidelines

**Placement Considerations (Class II)**—Below are some placement factors that need to be considered:

- There needs to be at least 2 feet of clearance around the rack.
- Bike racks must be placed away from utilities (sewer, water, gas, and electricity).
- Bicycle racks must not obstruct a sidewalk and must be placed on a flat concrete surface.
- Bike racks may not be directly placed in front of windows and doors.
- Bike racks shall not be placed in a spot that blocks safe sight-lines for motor vehicles.
- Bike racks should not be placed in front of a loading dock or unloading area at a bus stop.
- Bike racks should be placed in a well lit area that is not hidden from public views. Areas that are under surveillance are recommended for bicycle parking.
- The rack must accommodate a chain, u-lock, or cable, but can not be large enough for a child's arm or head to get stuck in the rack.
- The bike rack must be at least 10 feet from a fire hydrant.
- The bike racks should not be located in an area where snow is piled.



**Above:** The bicycle parking above has ample space but is located away from the parking demand.



**Above:** This bike rack is located next to a dumpster and a loading dock with frequently idling vehicles.



**Above:** This bicycle parking area is well lit and can be accessed from the public sidewalk.



**Above:** This locker is located in a remote location and is not monitored. Class II racks add extra security.

# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

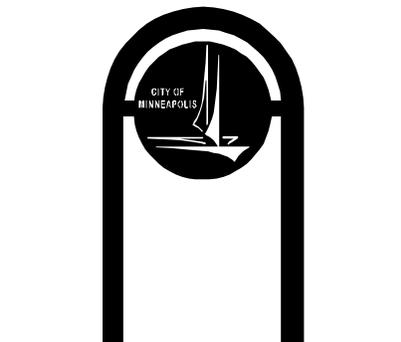
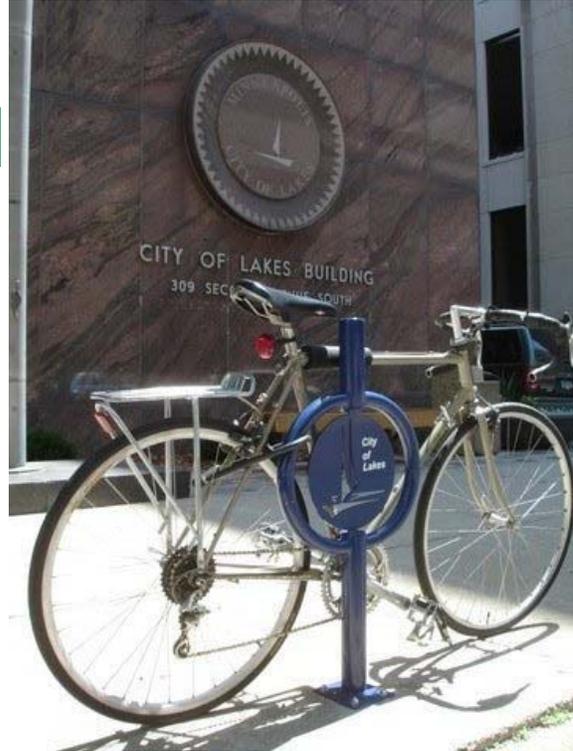
### Bicycle Parking Guidelines

**Placement Considerations (Class III)**—Below are some placement factors that need to be considered:

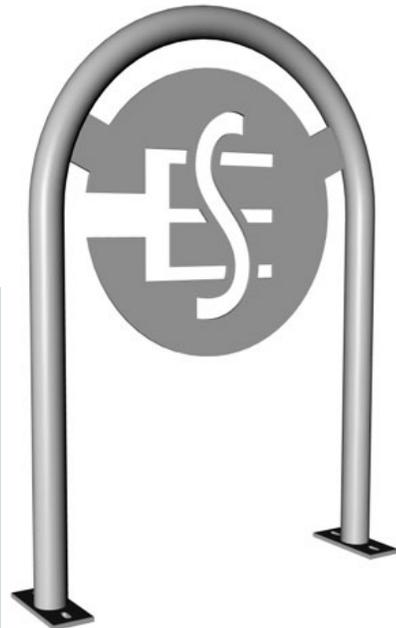
- Distance to front doorways should be minimized, but kept at least 2 ft from edge of door.
- Bike racks must be placed 2 feet away from utilities (sewer, water, gas, and electricity).
- Distance from fire hydrants—At least 10 feet
- 6 feet of clear zone must be maintained for a pedestrian walkway.
- Bike racks should be placed on a flat surface not to exceed a 2% slope.
- Mounted bike racks should be placed on a paved surface. Rail mounted bike racks may be placed on a grass or wood chip surface.
- Bike racks may not be directly placed in front of windows and doors that would act as a fire escape.
- Bike racks shall not be placed in a corner area that blocks safe sight lines for motor vehicles.
- Bike racks should not be placed in front of a loading or unloading area at a bus stop.
- Bike racks should have 2 points of contact.

#### Additional Bike Rack Guidelines:

- Bike racks may not have sharp edges, welds must be grounded and smoothed.
- Bike racks must be at least 32 inches tall so that the bike rack will be clearly visible to pedestrians and will not be a trip hazard.
- Gaps in the bike rack must be wide enough to fit a chain, u-lock, or cable, but can not be large enough for a child’s arm or head to get stuck.



**Photos:** Examples of creative variations of standard bike racks styles. The City of Lakes racks (top and left) are used at city buildings. The second rack from the top is used in the Seward Neighborhood on Franklin Avenue and the bottom right rack is used on Nicollet Avenue (Eat Street).



# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

### Bicycle Parking Guidelines

#### Good vs. Poor Bicycle Parking Examples

**Below:** Below are Poor Examples of Bike Parking. Bicycle racks that are old and rusty or are in disrepair inhibit bicycling. Bicycles attached to obsolete bike racks are more likely to be stolen or damaged. Poorly placed bike racks are also problematic because they are often trip hazards or contribute to accessibility challenges.

**Below:** Below are Good Examples of Bike Parking. Standard bicycle racks are easy to recognize and use. Newer styles look more appealing to bicyclists and properly space bicycles to maximize the use of space. Newer styles are also harder for bicycle thieves to take bicycles or parts. Bike racks should be placed at convenient and safe locations.



**Above:** Public Service Center bike lockers.

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# Bicycle Facility Design Guidelines

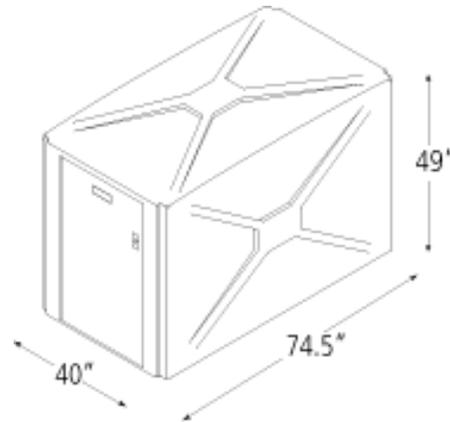
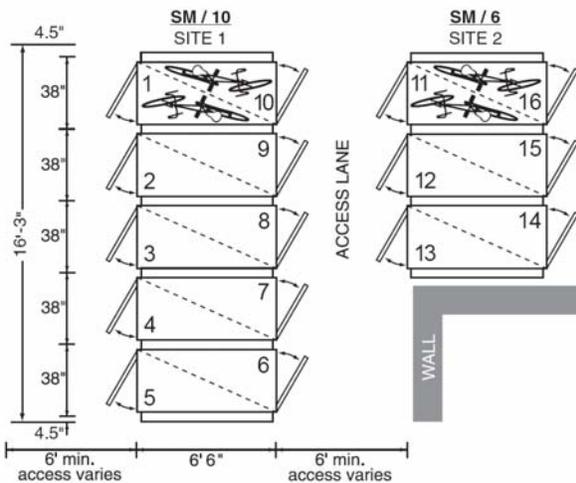
## Chapter 5—Bicycle Parking

### Bicycle Parking Specifications

**Bicycle Lockers (Class I)** - Below are the specifications for bicycle lockers in the city.

Style #1 Locker: This style of bicycle locker accommodates 2 bicycles per unit and can be connected to accommodate additional bicycles. A 6-foot clearance between lockers is needed to open doors and to move bicycles in and out.

Style #2 Locker: This style of bicycle locker also accommodates 2 bicycles and can be pushed together to accommodate more bikes. Style 2 lockers are slightly larger than style 1 lockers.



All lockers must be placed on a level asphalt or concrete surface.



**Above:** Bicycle locker at Chicago Ave and 56th Street.



**Above:** HCMC bike lockers.



**Above:** Cedar Riverside bike lockers.



**Above:** Public Service Center bike lockers.

## Bicycle Facility Design Guidelines Chapter 5—Bicycle Parking

### Bicycle Parking Specifications

**Bicycle Racks (Class II)**—Class II racks may be installed in single or double units, with one or two bikes being served respectively. The following criteria must be met:

- Class II racks must be designed to bolt to the sidewalk surface with special anchor expansion mounting bolts.
- Class II racks must be designed with a three point locking system, which locks the bicycle frame, both wheels, shelter cover, and storage unit together.
- The storage unit should be large enough to hold a bike helmet, rain gear, backpack, or other detachable bicycle accessories.
- Class II units are typically 27 inches x 54 inches x 32.5 inches. When installed, there needs to be at least 60 inches of space around the rack to maneuver a bicycle.



**Above:** Minneapolis Convention Center bike lockers.

# Bicycle Facility Design Guidelines

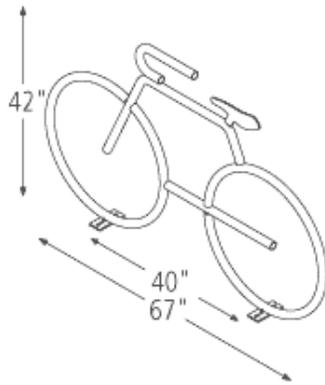
## Chapter 5—Bicycle Parking

### Bicycle Parking Specifications

**Bicycle Racks (Class III)**—Below are the specifications for the Style #1 Bike Rack.

Style #1 Bike Rack:

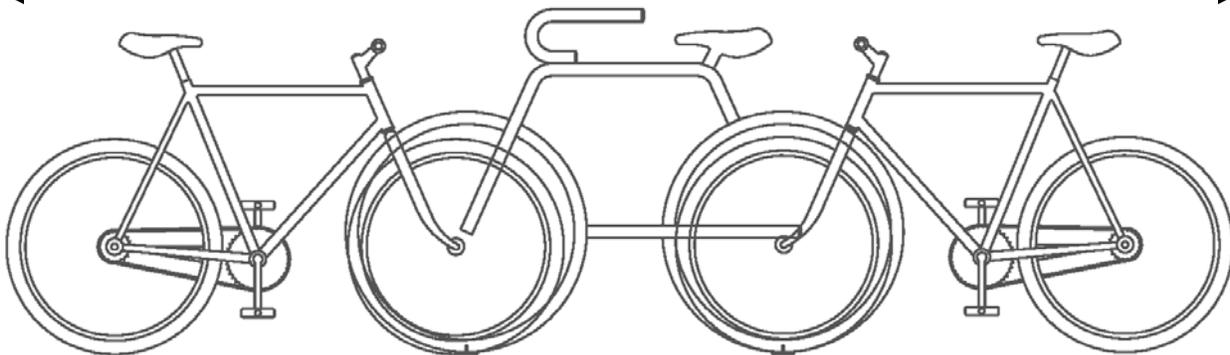
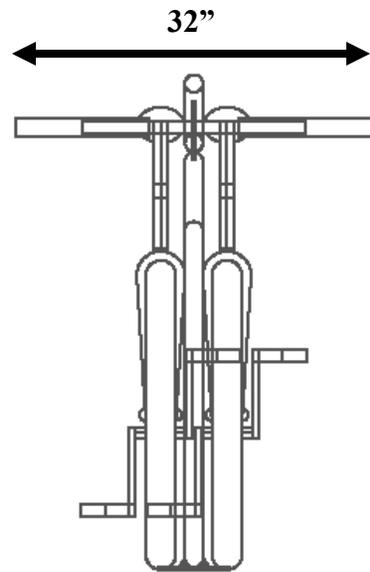
This bicycle rack accommodates up to 4 bikes. This rack is ideal for parks, schools, and plazas where there is room to store bicycles. A significant amount of room is needed to allow for two bicycles to be placed from end to end.



Above: Style #1 Bike Rack along Lyndale Avenue.



Above: Style #1 Bike Rack in Minneapolis.



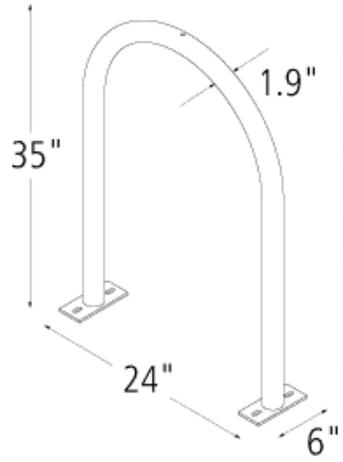
# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

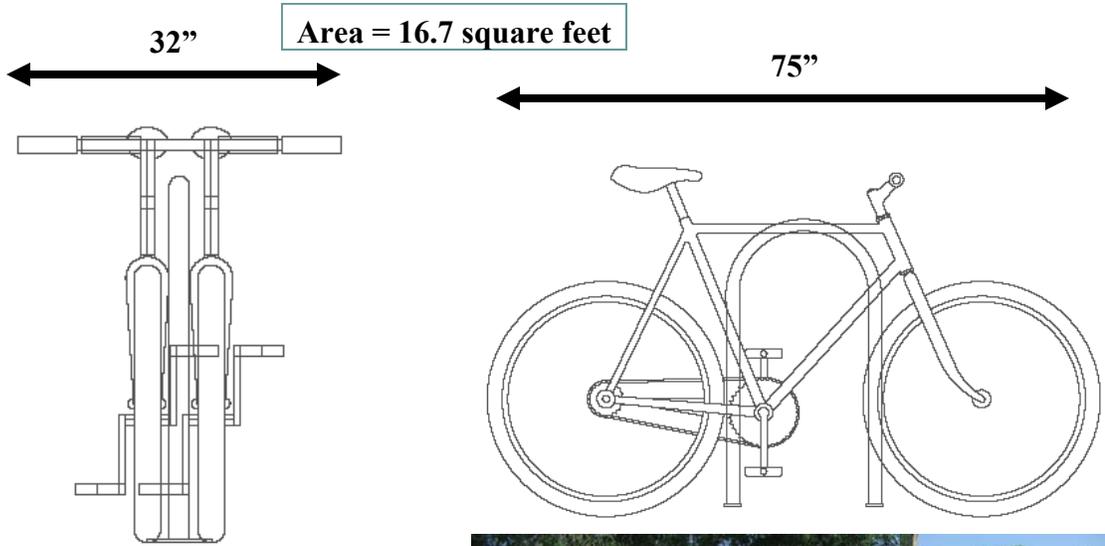
### Bicycle Parking Specifications

**Bicycle Racks (Class III)**—Below are the specifications for the Style #2 Bike Rack.

Style #2 Bike Rack: This bike rack will hold up to 2 bikes. This rack is ideal for parks, schools, and bus stops. This style is also very popular with businesses because of its simplicity and affordability.



Above: Style #2 Bike Rack in Minneapolis.



Above: Style #2 Bike Rack in Minneapolis.



Above: Style #2 Bike Rack in Minneapolis.

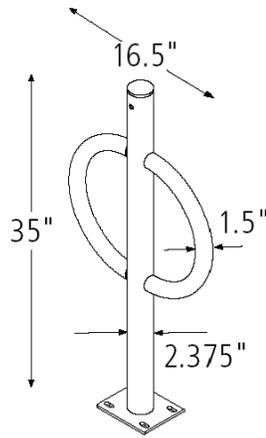
# Bicycle Facility Design Guidelines

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### Bicycle Parking Specifications

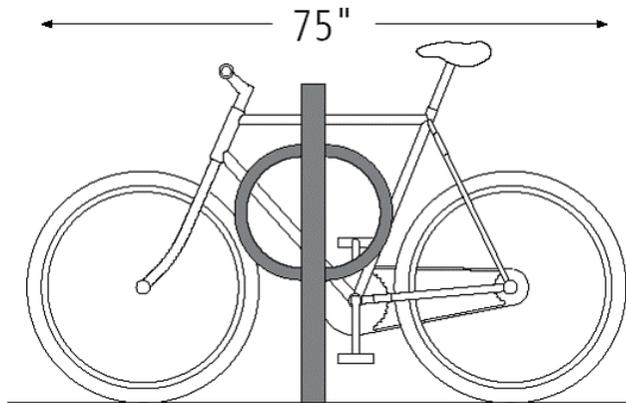
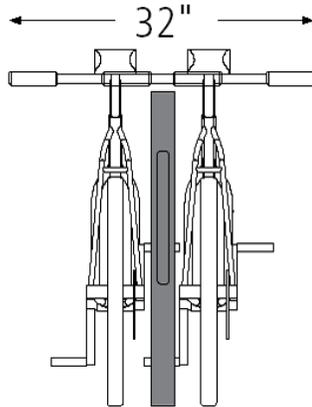
**Bicycle Racks (Class III)**—Below are the specifications for the Style #3 Bike Rack.

Style #3 Bike Rack:  
 This bike rack will hold up to 2 bikes. This rack is ideal for sidewalks with limited space. This style of bike rack keeps bicycles from getting in the way of pedestrians traveling along the sidewalk.



Above: Style #3 Bike Rack in Minneapolis.

**Area = 16.7 square feet**



Above: Style #3 Bike Rack at Corcoran Neighborhood in South Minneapolis.



Above: Style #3 Bike Rack along Hennepin Avenue.

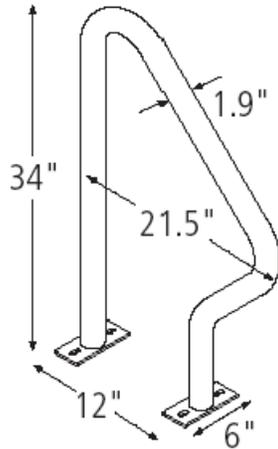
# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

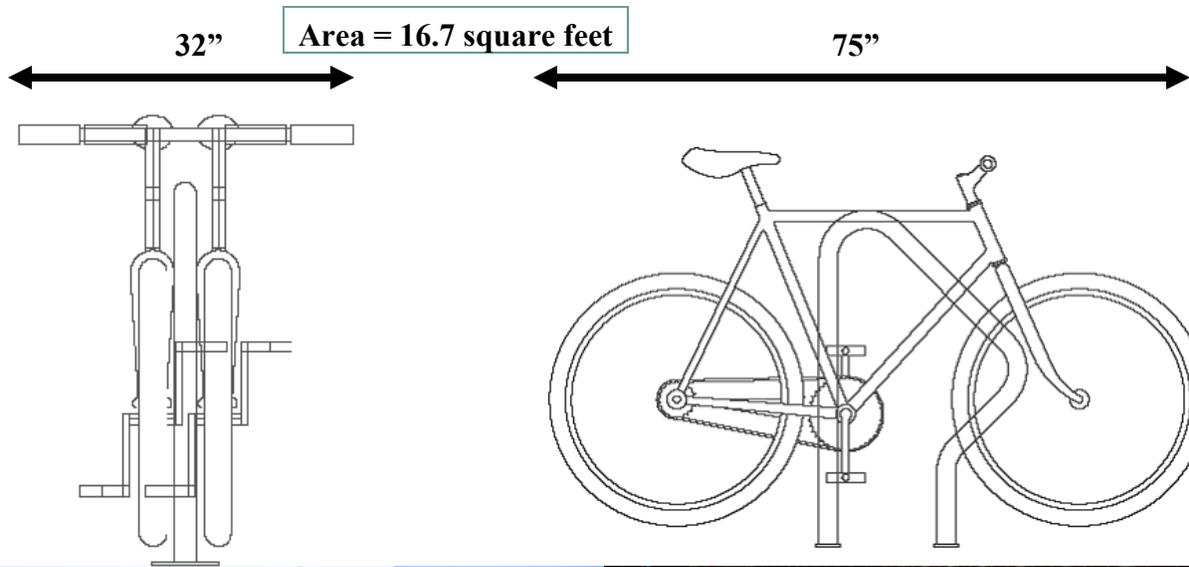
### Bicycle Parking Specifications

**Bicycle Racks (Class III)** — Below are the specifications for the Style #4 Bike Rack.

Style #4 Bike Rack:  
 This bike rack will hold up to 2 bikes.  
 This rack is ideal for schools and parks.  
 This style of bike rack keeps bicycles organized and is easy to use. This style can be mounted to the ground on a steel rail or individually.



Above: Style #4 Bike Rack in Minneapolis.



Above: Style #4 Bike Rack at the U of M.

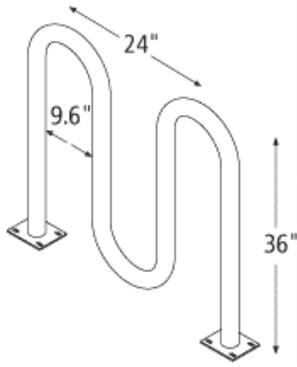


Above: Style #4 Bike Rack at the U of M.

**Bicycle Facility Design Guidelines**  
**Chapter 5—Bicycle Parking**

**Bicycle Parking Specifications**

**Bicycle Racks (Class III)** — Below are the specifications for the Style #5 Bike Rack.

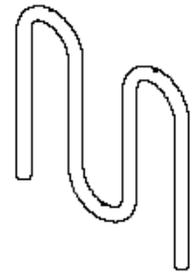
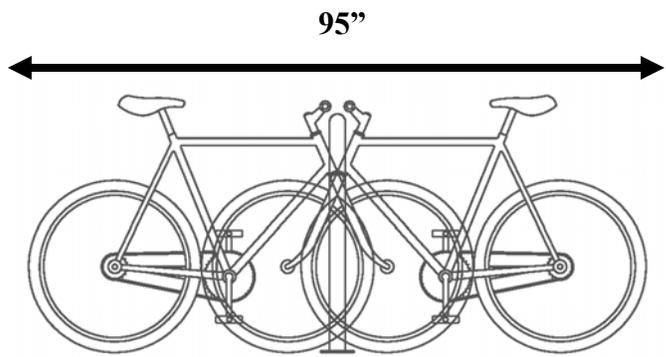


Above: Style #5 Bike Rack.

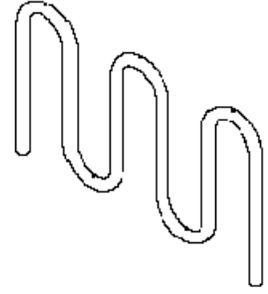
Style #5 Bike Rack: This bike rack will hold numerous bikes and is ideal for locations without space constraints.



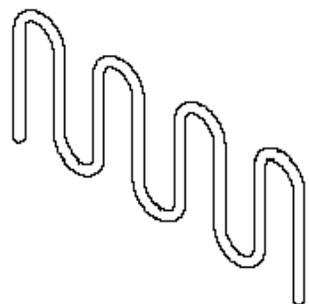
Above: Style #5 Bike Rack in Minneapolis.



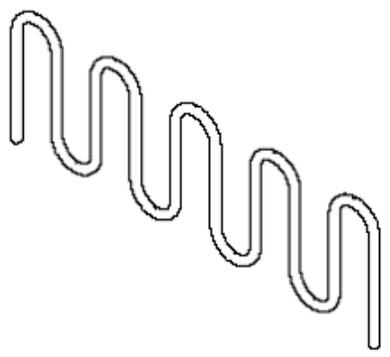
**38" Wide - Parks 5 Bikes**  
**Area = 25.1 Square Feet**



**63" Wide - Parks 7 Bikes**  
**Area = 41.6 Square Feet**



**87" Wide - Parks 9 Bikes**  
**Area = 57.4 Square Feet**



**111" Wide - Parks 11 Bikes**  
**Area = 73.2 Square Feet**

# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

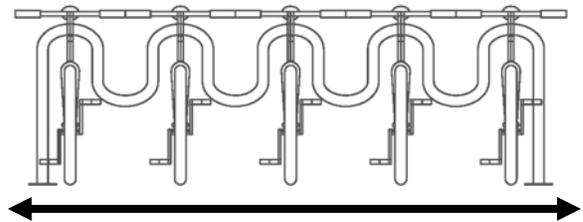
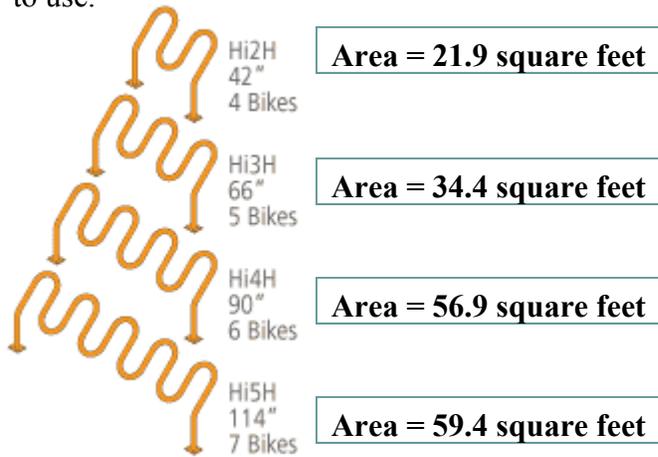
### Bicycle Parking Specifications

**Bicycle Racks (Class III)** — Below are the specifications for the Style #6 Bike Rack.

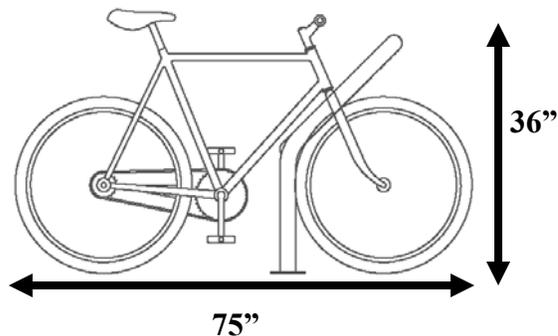
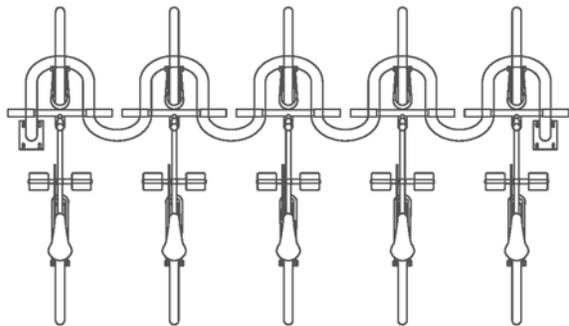
Style #6 Bike Rack: This style of bike rack works well for locations where this is a need to hold a large number of bikes but there is limited space. This style is ideal for libraries, schools, parks, and grocery stores and is easy to use.



Above: Style #6 Bike Rack.



Above: Style #6 Bike Rack.

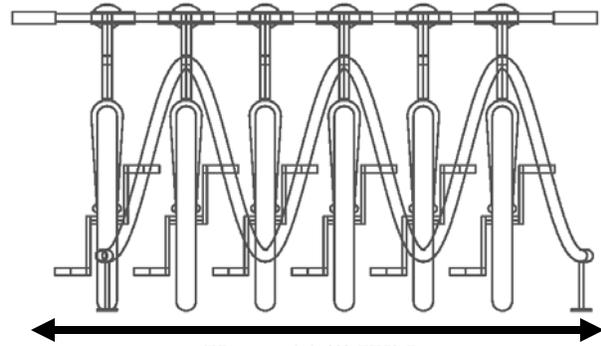


# Bicycle Facility Design Guidelines

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### Bicycle Parking Specifications

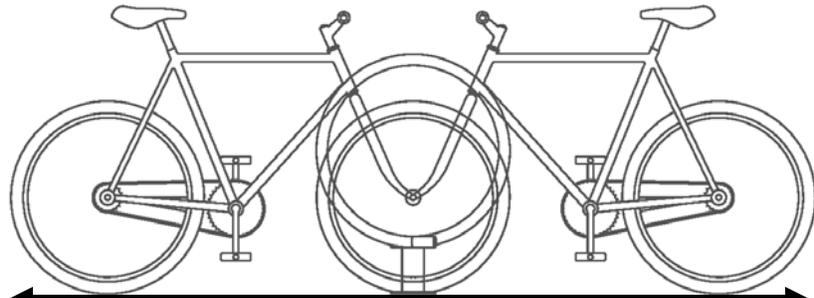
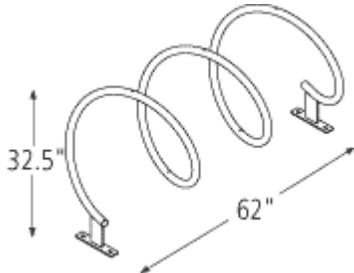
**Bicycle Racks (Class III)** — Below are the specifications for the Style #7 Bike Rack.  
**Style #7 Bike Rack:** This style of bike rack has a modern look and is popular with bars and restaurants. This type of rack requires more space than most other styles so care must be taken not to block sidewalks.



Up to 114" Wide

Area = 95 square feet

Area = 51.7 square feet



120"



Above: Style #7 Bike Rack along Lyndale Avenue.



Above: Style #7 Bike Rack in CARAG Neighborhood.



Above: Style #7 Bike Rack in Longfellow.



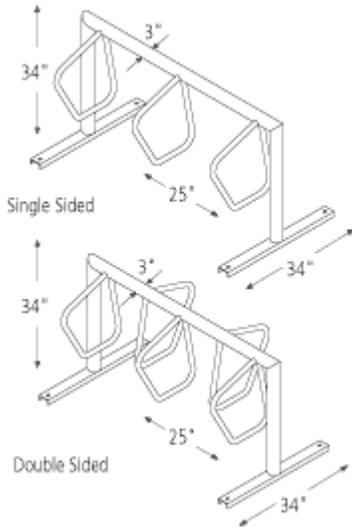
Above: Style #7 Bike Rack in Audubon Park

# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

### Bicycle Parking Specifications

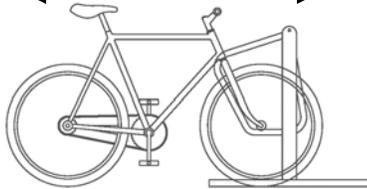
**Bicycle Racks (Class III)** — Below are the specifications for the Style #8 Bike Rack.



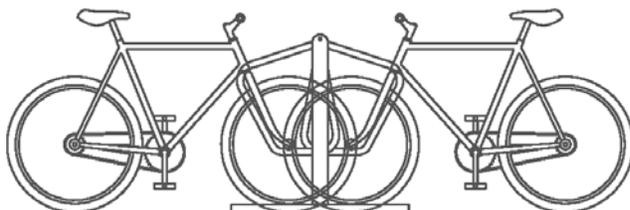
Style #8 Racks: This style of bike rack accommodates up to 11 bicycles and can be designed to be single or double sided. This style is ideal for parks and schools and can require a significant amount of space. The advantage of this rack is that it only needs to be mounted in four locations and is easy for bikers to use.

- Single Sided (3 bikes):** Area = 33.3 sq ft
- Single Sided (4 bikes):** Area = 46.4 sq ft
- Single Sided (5 bikes):** Area = 59.4 sq ft
- Single Sided (6 bikes):** Area = 72.4 sq ft
- Double Sided (5 bikes):** Area = 62.2 sq ft
- Double Sided (7 bikes):** Area = 86.6 sq ft
- Double Sided (9 bikes):** Area = 110.9 sq ft

**Single Sided - 75"**



**Double Sided - 140"**



**Above:** Style #8 Bike Rack at the U of M campus.



**Above:** Style #8 Bike Rack at the U of M campus.



**Above:** Style #8 Bike Rack at the U of M campus.



**Above:** Style #8 Bike Rack at the U of M campus.

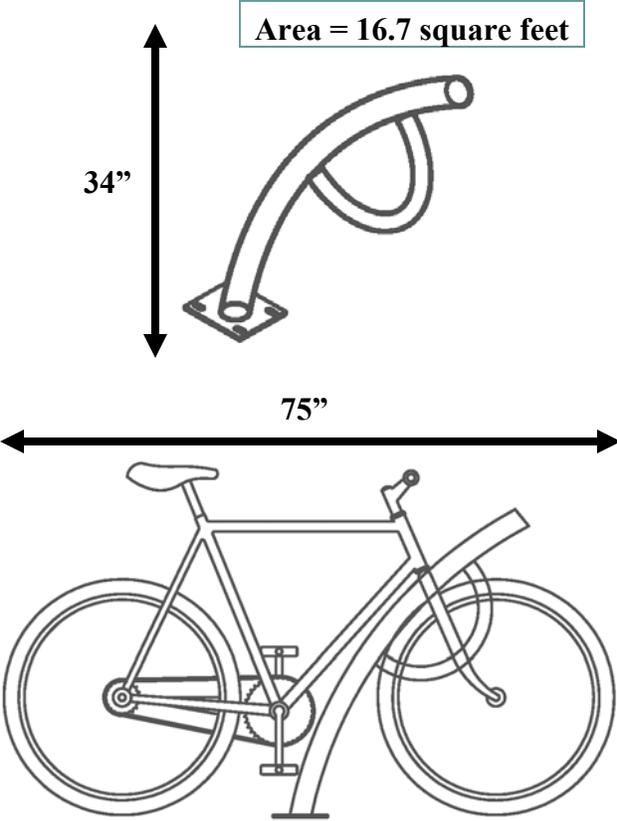
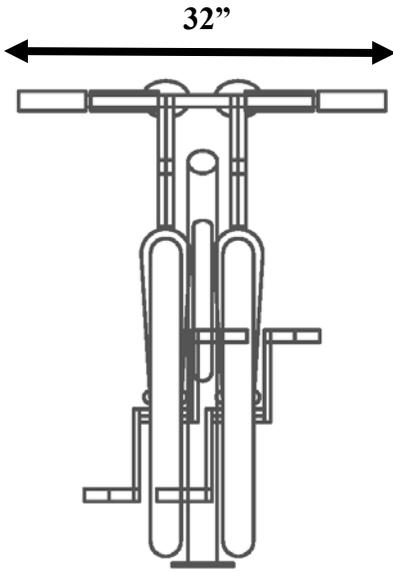
# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

### Bicycle Parking Specifications

**Bicycle Racks (Class III)** — Below are the specifications for the Style #9 Bike Rack.

Style #9 Bike Rack: This style of bike rack is ideal for parks, community centers, and businesses with limited sidewalk space. This style of rack holds 2 bikes and is very economical.



Above: Style #9 Bike Rack in Kingfield.



Above: Style #9 Bike Rack in Kingfield.



Above: Style #9 Bike Rack in Kingfield.



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# Bicycle Facility Design Guidelines

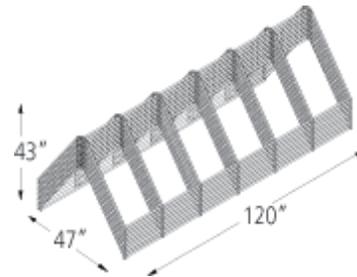
## Chapter 5—Bicycle Parking

### Bicycle Parking Specifications

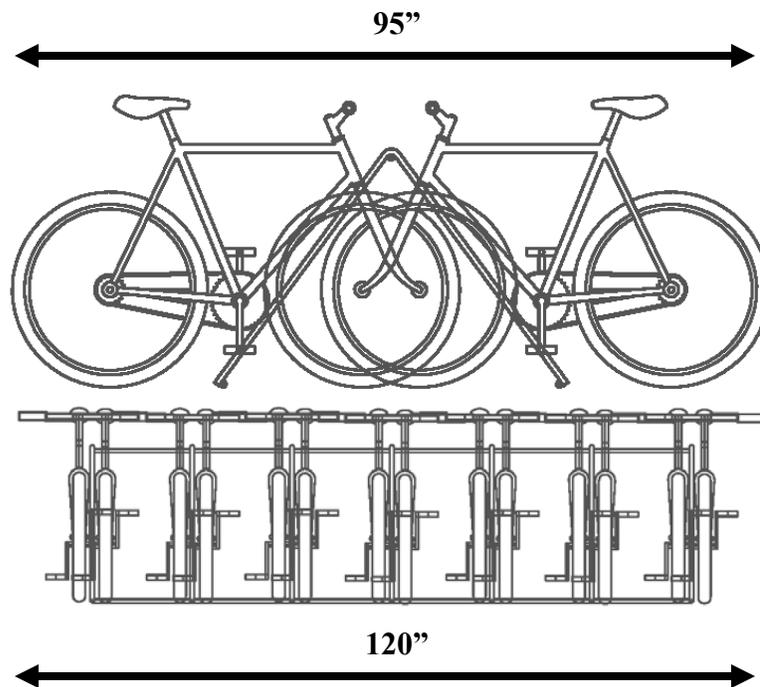
**Bicycle Racks (Class III)** — Below are the specifications for the Style #10 Bike Rack.

Style #10 Bike Rack: This style of bike rack is lightweight, stackable, and easy to transport to events. Having enough temporary bicycle parking is critical in achieving a successful bicycling event.

**Photos:** May 2008 Bike/Walk to Work Day



Area = 79.2 square feet



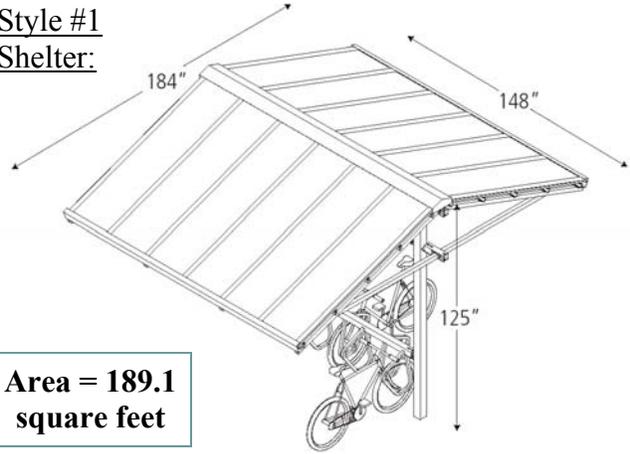
# Bicycle Facility Design Guidelines

## Chapter 5—Bicycle Parking

### Bicycle Parking Specifications

**Shelters** — The following styles may be used throughout the city to provide bicycles shelter from the elements. The following styles are easy to maintain have a simple design. Creative shelter styles may also be pursued, however maintenance of the shelter must be considered.

Style #1 Shelter:

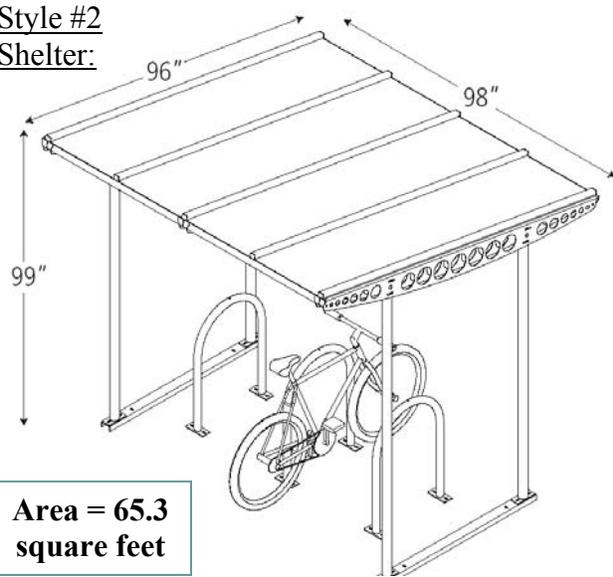


**Area = 189.1 square feet**



Above: Style #1 Shelter.

Style #2 Shelter:

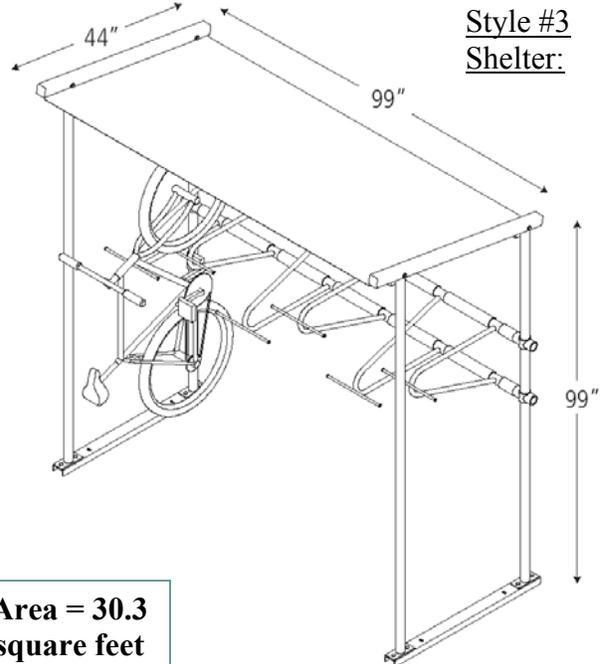


**Area = 65.3 square feet**



Above: Style #2 Shelter.

Style #3 Shelter:



**Area = 30.3 square feet**