

Jersey City Sidewalk Standards

Updated May 1, 2024

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OVERVIEW



The Department of Infrastructure is responsible for the planning, design, and implementation of critical public infrastructure in Jersey City including streets, transit systems, parks, public spaces, civic buildings, and other facilities.

The Department is also responsible for developing standards and policy for the right-of-way based on state and national regulations, best practices, and local values and goals around safety and sustainability.

This document is intended to guide the design of sidewalks as part of any capital construction project in the public right-ofway, whether publicly or privately owned.

To the extent possible, capital projects that include exterior work should incorporate sidewalk improvements regardless of whether the construction will impact the sidewalk. This includes but is not limited to the following types of projects:

- Transportation/streets
- Parks
- Plazas
- Buildings

For questions about these standards or their application, please contact the Department of Infrastructure at 201-547-4727.

SIDEWALK ZONES

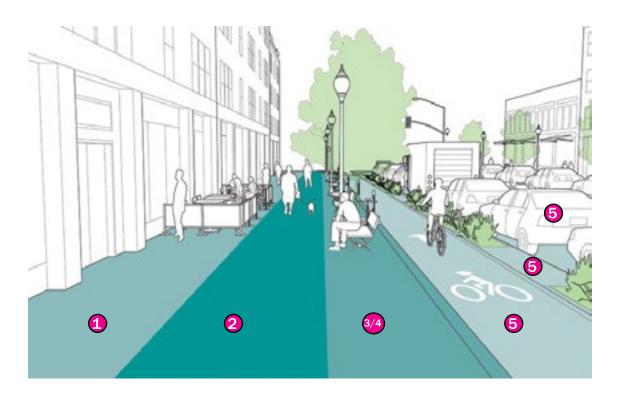
A complete sidewalk is comprised of the five (5) zones described below. When making sidewalk improvements, care should be taken to consider the entirety of the sidewalk and the treatment of each zone for a cohesive design.

Sidewalk Zone	Definition
Zone 1: Frontage Zone	Area adjacent to the property line where transitions between the public sidewalk and the space within buildings occur, such as sidewalk cafes, entryways, awnings, etc.
Zone 2: Pedestrian Through Zone	The primary, accessible, and continuous pathway for pedestrian travel that runs parallel to the street and is clear of fixed objects.
Zone 3: Furnishing Zone	The section of sidewalk between the Pedestrian Through Zone and the Curb/Edge Zone in which street furniture and amenities, such as lighting, benches, trash receptacles, bus shelters, regulatory and wayfinding signage, newspaper kiosks, utility poles, tree pits, rain gardens, parking meters, and bicycle parking are provided.
Zone 4: Curb/ Edge Zone (can be combined with the Furnishing Zone)	The area used by people getting in and out of vehicles parked at the curbside.
Zone 5: Enhancement/Buffer Zone	The area where pedestrian space may be extended into the parking lane to improve safety and/or enhance the quality of the pedestrian environment. This includes curb extensions, bus bulbs, parklets, bioswales, bike corrals or bike share stations, curbside bike lanes, and parking.

SIDEWALK ZONES

The graphics below from the <u>NACTO Urban Street Design Guide</u> illustrate typical mixed-use streets that feature complete sidewalks. Both examples feature a **Frontage Zone** adjacent to the retail entrances, a **Pedestrian Through Zone**, a combined **Furnishing** and **Curb/Edge Zone** containing street trees, bike racks, and lighting, and an **Enhancement/ Buffer Zone** containing a mix of curb extensions, parklets, raised bike lanes, and on-street parking.





RECOMMENDED DIMENSIONS

The most important element of a safe and accessible sidewalk is the **Pedestrian Through Zone**, also known as the clear zone or pedestrian access route (PAR). While ADA requires a minimum width of at least 4', Jersey City's existing **minimum width standards of 5-6 feet** exceed the minimum required for ADA accessibility. This is the absolute minimum width to allow two pedestrians to pass in opposite directions or walk side-by-side. However, in areas where higher pedestrian volumes are observed or expected, it is appropriate to increase this width along with the other sidewalk zones. Below is a table summarizing the recommended standards for each of the sidewalk zones.

Sidewalk Zone	Recommended Widths	Notes
Zone 1: Frontage Zone	1.5-8 feet	Less in residential areas; more in areas with outdoor dining
Zone 2: Pedestrian Through Zone	5-12 feet	Low (<50 peds/hr) = 5-6 ft. Moderate (50-200 peds/hr) = 6-10 ft. High (>200 peds/hr) = 10-12 ft.
Zone 3: Furnishing Zone	3-6 feet	5 ft. is standard street tree pit width, but can be reduced for sidewalks <10 ft. total width.
Zone 4: Curb/ Edge Zone	2-2.5 feet	In constrained areas, space for the Curb zone can be allocated from the Furnishing Zone
Zone 5: Enhancement/Buffer Zone	6.5-8 feet	Consult existing plans and/or data for priority locations for various types of curbside uses (e.g. Bicycle Master Plan, Green Infrastructure Plan, highest ridership bus stops, etc.)

In many cases, Jersey City has a constrained rightof-way that will make it more difficult to reach the preferred widths. In cases where sidewalk widths are constrained, professional judgement should be used based on site-specific considerations and the general guidance mentioned here.

The **Pedestrian Through Zone** should <u>always</u> be prioritized based on observed or anticipated pedestrian volumes.

In order to reach the City's Tree Canopy goals, street trees should be incorporated into the **Furnishing Zone** whenever possible. See <u>Division</u> <u>of Forestry Standards</u> for guidance on providing narrower tree pits in certain circumstances. The **Curb/Edge Zone** can be allocated from the **Furnishing Zone** as long as there is adequate space for car doors to swing out. The **Furnishing Zone** must allow adequate space at the curb at transit stops and next to accessible parking.

 Note that on streets with angled or perpendicular parking, the Curb/Edge Zone should be a minimum of 30 inches.

If there is moving traffic adjacent to the sidewalk, it is recommended to include a buffer of some capacity where possible, whether trees, landscaping, street furniture, or cycle track.

The **Frontage Zone** may be reduced in areas where there is expected to be less conflict between uses adjacent to the building and pedestrians walking, such as residential areas with front yard space.

Below is a table applying the recommended widths to specific street typologies. Note there is a **Minimum Total Width** as well as a **Preferred Total Width**, allowing flexibility based on the specific context of the street and feasibility of widening existing sidewalks. The Department of Infrastructure recognizes that some streets may not be able to achieve the recommended widths within existing setbacks and cartway widths as part of a single project. In some cases, the Department may undertake a significant redesign of an entire corridor to reallocate space, such as along Grove Street. In other cases, the Department of Housing, Economic Development & Commerce may identify such changes as part of a Redevelopment Plan for a wider area.

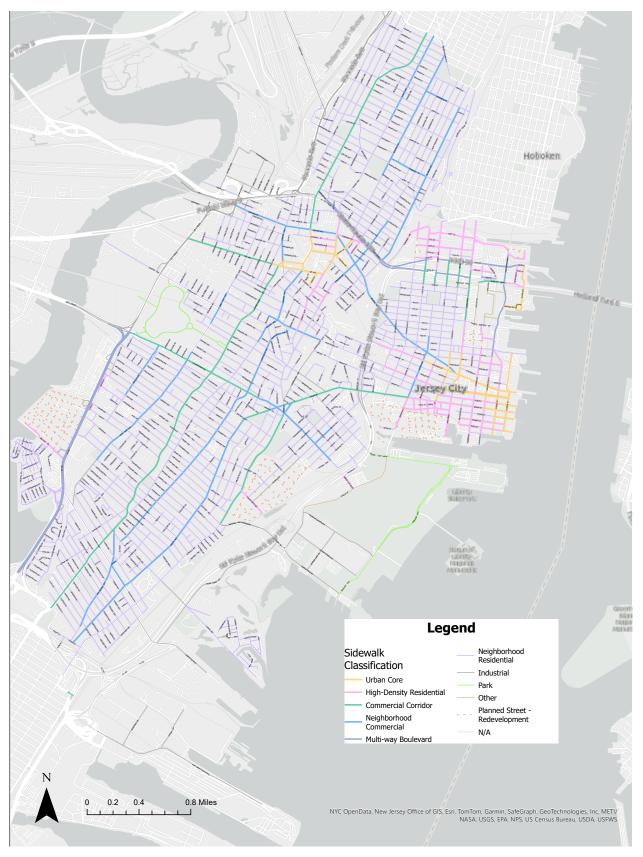
			Preferred			
Street Typology	Minimum Total Width	Preferred Total Width	Pedestrian Through Zone	Frontage Zone	Furnishing Zone	Curb/Edge Zone
Urban Core	14 feet	24-26 feet	10 feet	8 feet	6 feet	2 feet
Neighborhood Commercial	12 feet	20-22 feet	8 feet	6 feet	6 feet	2 feet
Commercial Corridor	12 feet	16-18 feet	7 feet	6 feet	5 feet	2 feet
High-Density Residential	12 feet	15-17 feet	7 feet	1.5 feet	6 feet	2 feet
Neighborhood Residential	10 feet	13-15 feet	6 feet	1.5 feet	5 feet	2 feet
Industrial	10 feet	13-15 feet	6 feet	1.5 feet	5 feet	2 feet
Multi-way Boulevard	12 feet	19-21 feet	7 feet	6 feet	6 feet	2 feet

Note that the **Enhancement/Buffer Zone** is not listed above because it typically uses space from the cartway, even when constructed at sidewalk level.

The following descriptions are intended to help discern the appropriate sidewalk treatments based on the closest street typology. The Department of Infrastructure has prepared a map classifying streets by typology to aid in this identification. Please contact mobility@jcnj.org with any questions or comments about sidewalk classifications.

Street Typology	Description
Urban Core (e.g. Exchange Place, Journal Square)	These are streets in high-density, mixed-use areas (typically within proximity to high-frequency transit) that have high levels of pedestrian traffic. These streets are typically found in areas defined as the "Commercial Core" in Jersey City's Master Plan.
Neighborhood Commercial (e.g. Central Ave, West Side Ave)	These are streets in mid-density, mixed-use areas (typically served by buses) that have high levels of pedestrian traffic. These streets are typically found in areas defined as "Neighborhood Centers" in Jersey City's Master Plan.
Commercial Corridor (e.g. Communipaw Ave, Sip Ave)	These are streets in mid-density, mixed-use areas that move significant volumes of vehicular traffic, often are served by buses, and have some pedestrian traffic. These streets are typically defined as "Regional Corridors" in Jersey City's Master Plan, and can be found in areas defined as large or medium "Neighborhood Centers."
High-Density Residential (e.g. Morris Street, Warren St)	These are streets characterized by high-rise residential development with ground floor retail in areas surrounding the Urban Core. Due to proximity to high-activity locations, there tends to be higher levels of pedestrian activity.
Neighborhood Residential (e.g. Clendenny Ave, Laidlaw Ave)	These are streets in lower density residential areas that typically have lower traffic volumes and speeds, as well as lower levels of pedestrian traffic. These streets are typically found in areas defined as "Low-density/Residential" in Jersey City's Master Plan.
Industrial (e.g. Duffield Ave, Thomas McGovern Dr)	These are streets in low-density areas characterized by more industrial uses, higher levels of truck traffic, and less active street frontage. These streets are typically found in areas described as "Industrial Areas" in Jersey City's Master Plan.
Multi-way Boulevard (e.g. future Rt. 440)	These streets are less common in Jersey City, but typically are areas in transition from primarily vehicular thoroughfares featuring large format retail to multimodal corridors featuring a mix of retail and higher density housing.

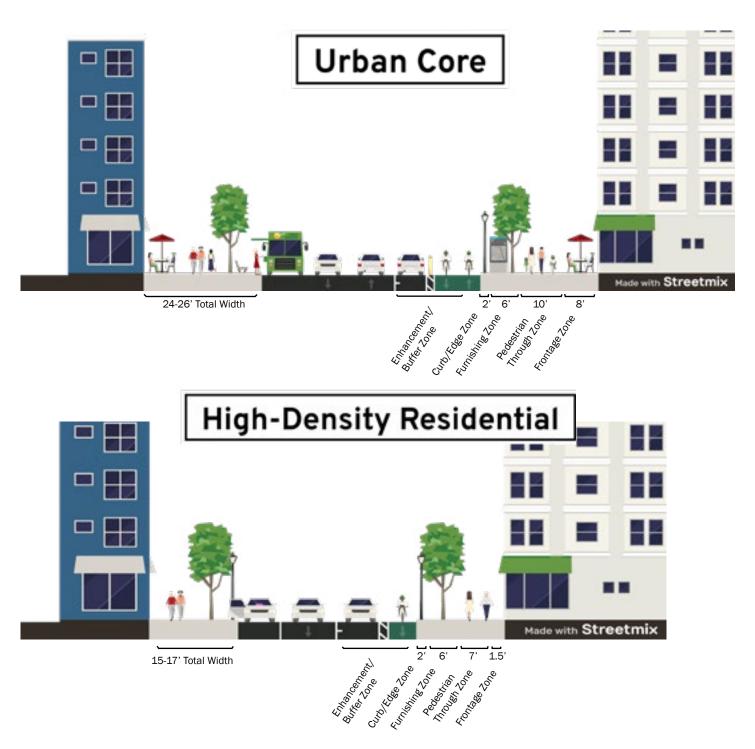
Large redevelopment areas that include changes to the street grid are indicated on the street typology map. For specific guidance related to the design of these streets, please consult the latest Redevelopment Plan or contact City Planning at 201-547-5010.



Sidewalk Standards - Updated March 2024

The examples on the following pages illustrate how standard widths are applied to street typologies. For example, a street containing mostly mid-rise buildings with a mix of shops, restaurants, and residential units would be categorized as Neighborhood Commercial. This typology calls for a preferred total sidewalk width of 20-22 feet, including at least 8 feet of clear space for pedestrians. A lower activity Neighborhood Residential street may have a narrower sidewalk of only 13-15 feet with 6 feet of clear space for pedestrians.

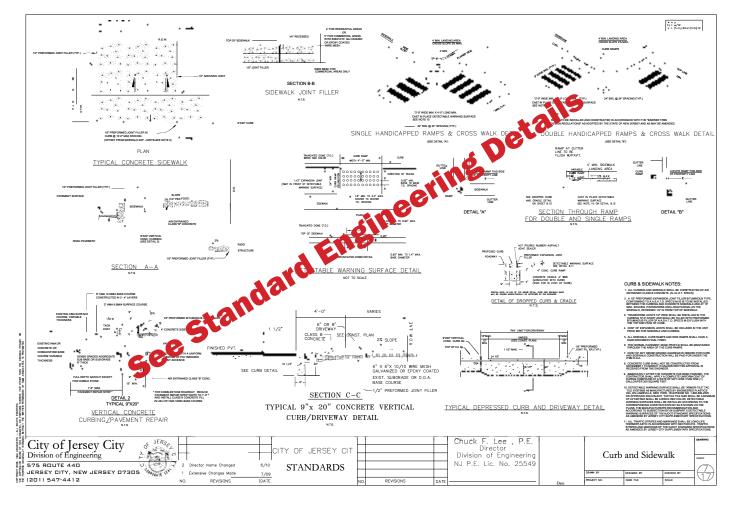




When designing or upgrading sidewalks, Jersey City has additional guidance regarding technical specifications, historic and special districts, amenities placement, and other considerations. Please see the referenced documents for the most up-to-date and detailed information about these requirements.

Engineering Details

See <u>Standard Engineering Details</u> on the Division of Engineering website to download full-sized files with the most up-to-date standards.



Driveways: At driveways, sidewalks should be maintained at-grade through the conflict zone using concrete aprons with depressed curbs.

Materiality: According to Jersey City Municipal Code §345-62 and §345-63, all sidewalks shall be tinted Scofield Charcoal Grey or equivalent. **Heating Elements:** Heated sidewalks are not recommended and subject to review by the Division of Engineering before permitting installation. Excavations require a Sidewalk Opening permit.

Sidewalk Cafes and Sales: A license is required from the Division of Commerce. See § <u>296-7.1.</u> for more information.

Sidewalks located in historic or other special districts have unique requirements pertaining to the design and materials of the sidewalk. Alternative treatments may be considered for larger scale placemaking efforts (e.g. pedestrian plazas).

Historic and Special Districts

See <u>Rules & Regulations for Alterations &</u> <u>Additions to Buildings & New Construction in</u> <u>Historic Districts</u> on the Division of Historic Preservation website for more information.

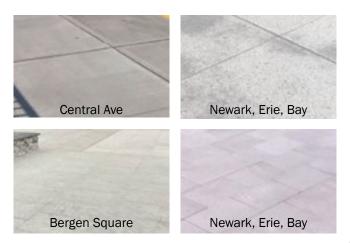
Historic: Appendix 1 contains maps of Historic Districts where historic standards apply, but please check with the <u>Division of Historic Preservation</u> for the most up-to-date information.

- For repairs of less than fifty percent (50%) of existing sidewalk, the replacement units should be of like material and color to match the existing sidewalk. Intact blue stone paving must not be removed and discarded. Intact blue stone which has moved due to the thrust of tree roots or the freeze and thaw cycle and that presents a safety hazard to pedestrians, should be carefully removed and reset in sand, quarry, dust or dirt and butt jointed.
- For replacement of more than fifty percent (50%) and **new sidewalks.** in the case of stone paying such as blue stone, the replacement units should be of the same material, shape, and size as the existing stone paving and should be laid in the prevailing or historic pattern. When the previous material is concrete, then blue stone or colored concrete must be used. Colored concrete after curing should be "Scofield Charcoal" or equivalent. The texture of the concrete may be made smooth with a wood float in order to create a texture more like blue stone, although a light broom finish, perpendicular to the curb is permitted for insurance purposes. The sidewalk should cure without fine finishing and lines should be scored without edging, saw cut joints are recommended.

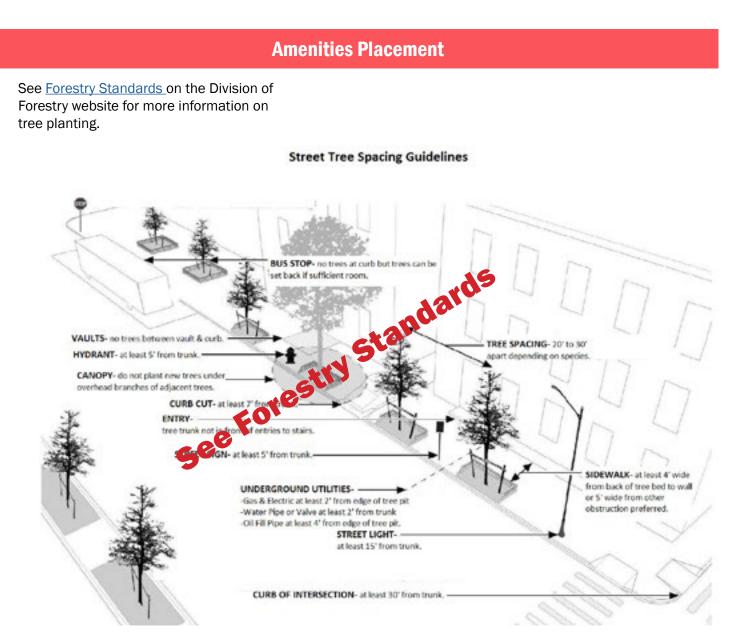
Central Avenue: Between Manhattan Avenue and Paterson Plank Road, the top surface of the sidewalk shall have silicon carbide applied at the rate of 20 to 25 lbs./100S.F., as follows, unless otherwise directed by the manufacturer. Additional details can be found in Appendix 2.

Newark Avenue, Erie Street, Bay Street: On Newark Avenue between Grove Street and Jersey Avenue, on Erie Street between Newark Avenue and Bay Street, and on Bay Street between Newark Avenue and Erie Street, the sidewalk shall be replaced in kind using polymer cement in light grey with black and white specks to hide stains and gum. Granite portions shall be replaced with natural granite stone of the same dimensions and matched in color.

Bergen Square: At the intersection of Bergen Avenue and Academy Street, the sidewalk adjoining the pedestrian plaza spaces and raised intersection shall be replaced in kind using the same 24"x24" bluestone stamped concrete in French Grey (one shade lighter than Scofield Charcoal Grey). Manufacturer: Butterfield Color. Product Num. BST4200. Touch-up Texture Skin: Bluestone -BST20018.



Amenities should be included in the Furnishing Zone to add to the comfort and convenience of the sidewalk.



Trees: Should be placed at regular intervals, approximately 20-30' apart depending on species.

Benches and Seating Areas: Should be placed at regular intervals (approximately 100-200') to provide opportunities for pedestrians to rest and enjoy the surroundings.

Trash and Recycling: Containers should be strategically placed to encourage proper waste disposal and maintain cleanliness. Areas near fast/ casual food, shopping areas, and public transit stops are typical places where trash receptables are desired.

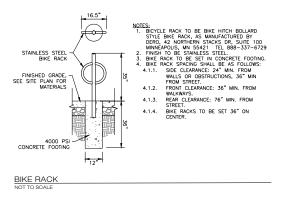
To reduce clutter, consider co-placement of amenities, such as benches or bike racks that can double as tree guards.

Amenities Placement

Bicycle Racks: Bicycle racks should be located conveniently for cyclists while minimizing interference with pedestrian flow. Bicycle racks should be prioritized near parks, schools, transit stops, commercial areas, and popular destinations.

Bicycle racks can be installed in groups as corrals near high-demand areas.

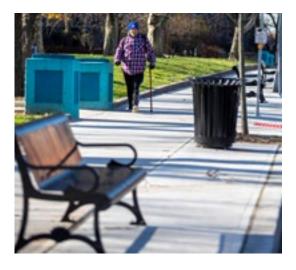
Specifications for the type and installation of bicycle racks and corrals can be found in the <u>Standard</u> Engineering Details.



Secure Bicycle Parking: For especially high-demand areas and/or areas where the threat of theft is high, consider secure, covered bike parking or secure bike docks. The City currently has a contract with Oonee to install secure bike parking.

In addition to placement on the sidewalk, it may be appropriate to install in the street as part of the **Enhancement/Buffer Zone**, either to replace a vehicular parking space or within a painted curb extension for daylighting the intersection.



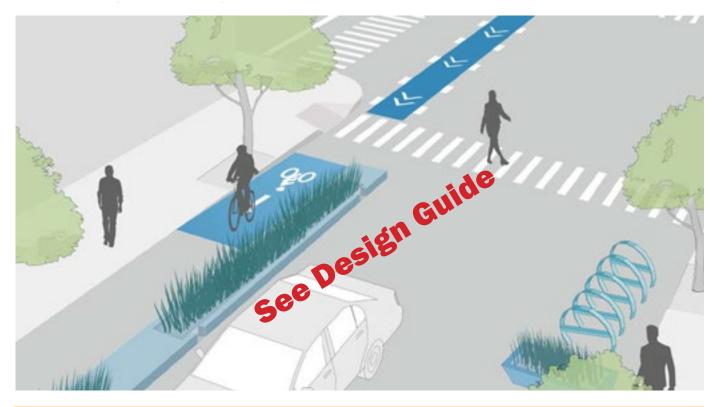




Raised bikeways are considered the "gold standard" and are the preferred configuration wherever feasible. Raised bikeways use a curb to separate the bikeway from motor vehicle lanes and a second curb to separate the bikeway from the rest of the sidewalk. Priority should be given to bikeways that are major network connections and where there are high vehicle and/or pedestrian volumes, such as the urban core and commercial corridors.

Bikeway Design Guide

See <u>Bikeway Design Guide</u> on the Division of Transportation Planning website for more information on raised and sidewalk-level bikeways.



APPLICATIONS:

Sidewalk-level bikeways should be used wherever a raised bike lane is desired but maintaining level pedest a higher priority than containing bicycles to the bike lane. Other than at hus stops and destinations with si

Material: Asphalt is preferred to avoid bumps at expansion joints. Bike markings and directional arrows should be included.

Buffer Zone: The curb/edge zone should be placed between the bicycle lane and roadway edge, with a wider buffer if vehicle parking is allowed.

Furnishing Zone: Landscaping and street furnishings are recommended between the bikeway and Pedestrian Through Zone in order to prevent cyclists and pedestrians from straying into each other's space and causing potential conflicts.

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SAFETY AND SECURITY

Ensuring the safety and security of the pedestrian environment is an important component to encourage more walking and public transportation trips. The physical design of the sidewalk can contribute to both real and perceived levels of safety and security.

Lighting: Sidewalks should be well-lit with pedestrian scale lighting for safety and security.

- Streetlights or other forms of lighting should be spaced approximately 100 to 165 feet apart along the sidewalk.
- Additional lighting may be required in areas with higher foot traffic, curves, or potential safety concerns.
- The placement of lighting should ensure consistent illumination without creating glare or shadows that impede visibility.

Maintenance: Regular maintenance should be conducted to address any physical hazards, such as cracks, uneven surfaces, or obstructions.

Visibility: Adequate visibility should be maintained to reduce the risk of crashes, with clear lines of sight at intersections and around street furniture.

Intersection Treatments: The design of intersections should be improved to prioritize pedestrian safety and convenience, including shorter crossing distances, longer crossing times, and well-marked crosswalks. Raised crosswalks or intersections should be considered where traffic calming is a priority.



Traffic Signals: Pedestrian-friendly and accessible signal changes should be incorporated to make crossings safer, such as Leading Pedestrian Intervals (LPI), pedestrian recall, countdown timers, and audible signals. Traffic Engineering maintains a list of traffic signals where LPI and pedestrian recall are recommended.

Barrier Elements: Along the High-Injury Network or other heavily-trafficked or higher speed streets that cannot accommodate a Furnishing Zone, physical barrier elements should be installed where possible to protect pedestrians from vehicular traffic, with a priority at intersections and transit stops where pedestrians are close to the curb. Barriers must not impede pedestrian flow, overpower the scale of the sidewalk, or present accessibility challenges. Care should be taken to ensure that barriers do not inadvertantly reduce visibility or create conducive places for criminal activity to occur.

Acceptable barrier types include:

- Planters
- Standard or Retractable Steel Bollards
- Spherical Concrete Bollards



Jersey City Department of Infrastructure

MAINTENANCE AND REPAIR

According to Jersey City Municipal Code, responsibility for maintenance of sidewalks primarily rests with the property owner. Historically, Jersey City's Division of Engineering maintains and upgrades accessible curb ramps at intersections, mid-block bus stops, and other areas deemed necessary for accessibility. In some cases, the City will also undertake sidewalk improvements as part of larger scale corridor projects.

City Ordinances

See <u>Municipal Code</u> for additional information regarding the responsibilities for sidewalk maintenance.

§ 296-1.2. - Duties of Owners or occupants of residential and commercial properties.

Every Owner, occupant or Person having charge of a residential or commercial building or vacant lot is deemed to have a duty to maintain the Sidewalks, Curbs and Gutters abutting their building or lot free from snow, ice and litter in accord with the standards set forth in this article. Every Owner, occupant or Person having charge of a residential or commercial building or vacant lot is deemed to have a duty to maintain the surface of any Sidewalk(s) Curbs and Gutters abutting their property in an even and stable condition so as to be free of any trip hazards.

§ 296-1.12. - Maintenance of water/sewer service pipe/ sewer main connection-Responsibility of property Owner. The Owner of each property into which running water is introduced via the City's water main and into which said property discharges its sanitary and/or stormwater (wastewater) into the City's storm or sanitary or combined sewer main, shall be responsible for the maintenance of the service pipes which run under the Street and Sidewalk and which connects his or her premises to the water and sewer mains. Accordingly, each property Owner is responsible for replacement of that portion of the Street and/or Sidewalk which is disturbed by the replacement of said service pipes. Service connection failures at the point of the service connection to any water sanitary/storm/combined sewer main, shall be the sole responsibility of the connected property Owner to repair the connection(s) and restore the Street, Sidewalk and Curbs that are disturbed.

§ 296-1.13. - Uneven Sidewalks and replacement of Sidewalks–Responsibility of property Owner.

The responsibility for maintaining Sidewalks and Curbs in a safe condition and free from all trip hazards caused by tree roots, broken or cracked concrete or subsurface shifting shall rest with the property Owner whose property abuts said Sidewalk and/or Curb.

The responsibility for replacing Sidewalks and Curbs shall rest with the property Owner whose property abuts said Sidewalk and/or Curb. Any property Owner seeking to replace a Sidewalk and/or Curb shall first apply for a Permit to do so in a format and manner specified by the Division of Engineering, Traffic and Transportation and must pay the fees set forth in Chapter 160. Should the repair/ replacement of a Sidewalk or Curb affect a Street tree as defined by Chapter 321, the Applicant must also obtain approval from the Division of Parks and Forestry.

For questions about sidewalk maintenance, contact 201-547-4727. To apply for a permit to conduct sidewalk repairs, complete the online <u>Road Opening Permit</u> and <u>Traffic</u> <u>Permit</u>_reviewed by the Division of Traffic Engineering.

If work is being done within 25 feet of a tree or the drip zone, please review the <u>Tree</u> <u>Protection Guide</u> and contact the Division of Forestry at 201-547-5964 to obtain a permit.

MAINTENANCE AND REPAIR

The Circulation Element of the Jersey City Master Plan includes standards for determining when sidewalk maintenance is required. Adopted in 2009 and last amended in 2011, these standards have not been updated to reflect the latest accessibility requirements and best practices. Information in *italics* has been added, but always consult <u>PROWAG</u> for compliance with the Federal Americans with Disabilities Act (ADA).

Circulation Element

- a. Sidewalks with breaks in vertical elevation of less than ¼ inch should be reviewed on a case by case basis. However, these sidewalks typically would not require replacement if this differential was the only sidewalk deficiency and the sidewalk was not recently installed. These areas should be monitored.
- b. Tripping hazards with changes in vertical elevation of more than ¼ inch, should be repaired. All slabs should be replaced from joint to joint where feasible. Saw-cutting may be acceptable in some locations subject to the approval of the City Engineer's office.
- c. Sidewalks with cross slopes greater than 2% should be replaced or reset. The cross slope should pitch towards the street/ away from the house.
- d. Sidewalks with running slopes (grades) greater than 5% where the pedestrian access route exceeds the general grade of the roadway, should be replaced with the installation of a curb ramp that meets the required federal guidelines, or be reset to less than 5% running slope or to follow the general grade of the roadway.
 - If there is a running slope greater than 5%, there should be a 60 inch flat landing for every 60 inches of slope.
- e. Spalling sidewalk should be reviewed on a case-by-case basis, but typically would not require replacement. However, spalling sidewalk should be monitored for ponding

water, which could be the cause of the spalling.

- f. If ponding runoff is noted on the sidewalk, then the sidewalk should be repaired or reset to eliminate ponding. Ponding water can result in unsafe icing conditions and is an obstruction to pedestrians, which reduces sidewalk capacity and causes an unnecessary nuisance to its users.
- g. Sidewalks with hairline cracks typically would not require replacement if this deficiency is the only sidewalk deficiency and the sidewalk was not recently installed. These areas should be monitored.
- h. Sidewalks with cracks greater than ¼ inch should be repaired. All slabs should be replaced from joint to joint where feasible. Saw-cutting may be acceptable in some locations subject to the approval of the City Engineer's office.
- i. Broken and chipped sidewalk should be reviewed on a case-by-case basis by the City Engineer's office. If these deficiencies cause an unlevel traveling surface, tripping hazard or potential for ponding, then the sidewalk should be replaced from joint to joint where feasible. Saw-cutting may be acceptable in some locations subject to the approval of the City Engineer's office.
- j. All sidewalk replacement should be in accordance with Ordinance requirements and should be in accordance with the City's Typical Concrete Sidewalk details.

CONSTRUCTION IMPACTING THE SIDEWALK

Any construction project that obstructs the sidewalk shall be mitigated through the provision of a temporary sidewalk that affords a safe and convenient passage or clearly directs users to an equivalent nearby detour. Construction that includes scaffolding shall provide adequate lighting for the sidewalk beneath the scaffolding. Detailed guidance can be found in the Traffic Control Manual.

See <u>Municipal Code</u> for additional information regarding closures of the public-right-of-way.

§ 296-2.12. - Traffic Control Manual.

In addition to any of the requirements set forth in this article, all complete and partial closures of the Public Right-of-Way shall be performed in accordance with the Traffic Control Manual, as adopted by Ord. No. 20-045 on June 24, 2020 (formerly known as the Traffic Barricade Manual) as promulgated by the Division and adopted by ordinance of the Municipal Council. The Traffic Control Manual shall be on file in the Office of the City Clerk and is incorporated by reference herein. A violation of the Traffic Control Manual shall be deemed a violation of § 296-2.12.



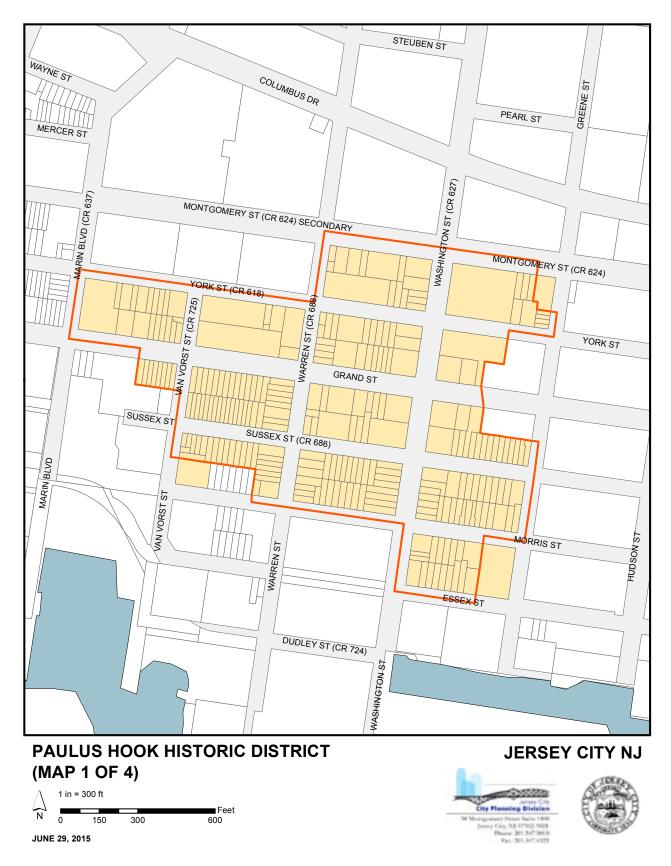


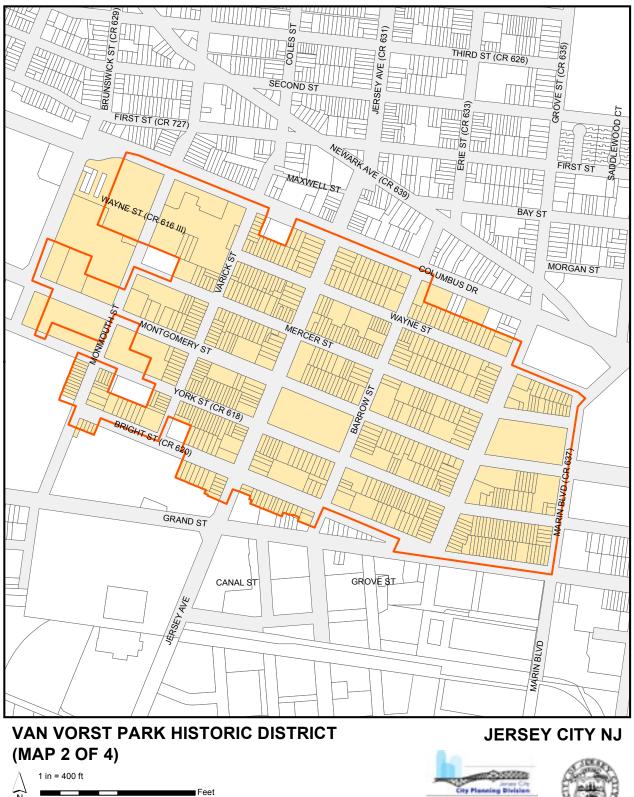
As of the publishing of this guide, the City has five local historic districts designated for protection. The five current districts are:

- 1. Paulus Hook
- 2. Van Vorst Park
- 3. Hamilton Park
- 4. Harsimus Cove
- 5. West Bergen East Lincoln Park

Maps of the district boundaries can be found on the following pages. Please note that Hamilton Park and Harsimus Cove Historic Districts are shown on the same map.

Several additional potential historic districts have been identified and recommended for further review in the Draft Historic Preservation Master Plan. Please visit <u>jcnj.org/historic</u> and check with the Division of Historic Preservation for the most up-to-date information.

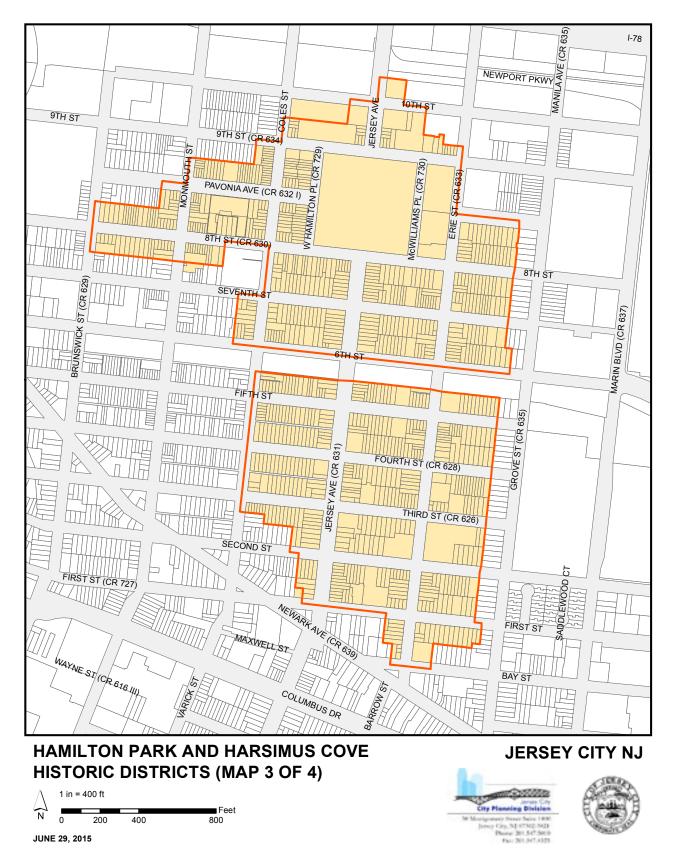


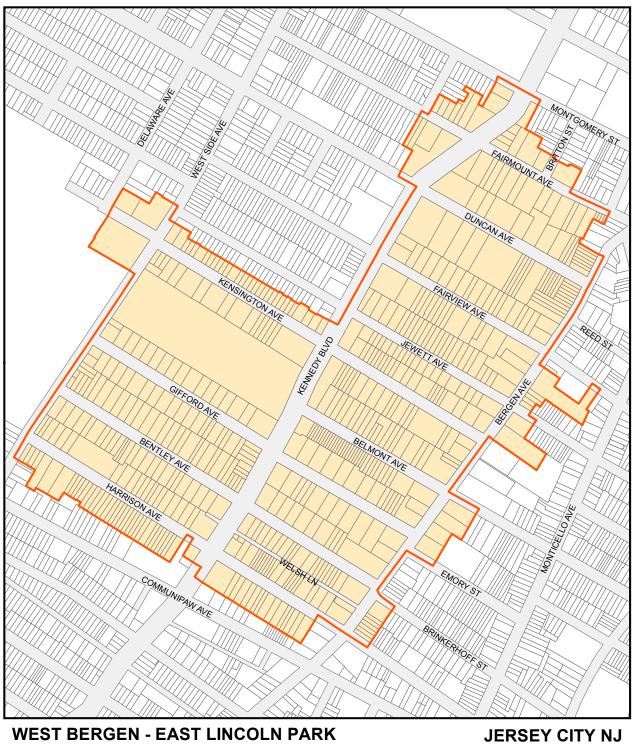




Jersey City Department of Infrastructure

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HISTORIC DISTRICT (MAP 4 OF 4)





Jersey City Department of Infrastructure

APPENDIX 2: CENTRAL AVE SIDEWALK

When necessary to remove portions of HMA sidewalk or driveway, the sidewalk or driveway shall be sawcut to provide a neat straight line.

606.03.02 Concrete Sidewalks, Driveways, and Islands

A. Underlayer Preparation.

THE FOLLOWING IS ADDED:

When necessary to remove portions of concrete sidewalk or driveway, the sidewalk or driveway shall be sawcut to provide a neat straight line

H. Protection and Curing.

THE LAST SENTENCE IS CHANGED TO:

Ensure vehicles and other loads are not placed on sidewalks, islands, and driveways for 72 hours or until the concrete has attained compressive strength of 3000 pounds per square inch, as determined from 2 concrete cylinders field cured according to AASHTO T 23.

THE FOLLOWING SECTION IS ADDED:

J. Colored Concrete for Sidewalks, Driveways & Curbs

1. Pigmenting.

This section describes Pigmented Admixture for Portland cement mixtures.

It shall be certified by the manufacturer that the Pigmented Admixture shall consist of pure synthetic mineral oxide only, and shall comply with ASTM Designation C. 979 and the requirements of ACI 316.

The Pigmented Admixture shall produce a gray color equivalent to L.M. Scofield 'Landmarks Grey' K-157-4 or an approved equivalent.

The Pigmented Admixture manufacturer shall certify that when used at the recommended dosage, the pigmented admixture has no effect on or increases the compressive strength of the concrete by 5-10% when compared with a control batch of the same mix design and slump but without the Pigmented Admixture. Testing shall be done at 28 days after depositing, and shall be measured in pounds per square inch. The test results shall be an average of at least three (3) cores or cylinders per test.

Calcium Chloride shall not be used in the composition of the admixture nor in the composition of the concrete.

The Pigmented Admixture shall be packaged by the manufacturer in incremental amounts by weight for a single cubic yard of concrete, with the designated dosage clearly marked on each package.

Air entraining agent complying with ASTM Designation C 260 shall be used in combination with the Pigmented Admixture.

Water reducing admixtures complying with ASTM Designation C 494 may also be used in combination with the Pigmented Admixture as per the Pigment manufacturer's instructions.

No other agents or admixtures shall be used with the Pigmented Admixture in the concrete unless stated in writing by the manufacturer of the Pigmented Admixture to be of no consequence to the colorfastness of the concrete mixture.

The Pigmented Admixtures shall be mixed and delivered in accordance with ASTM Designation C 94. The quantity of concrete being mixed in a mixer shall be no less than 40% of the capacity of the mixing drum (a minimum of 4 yards in a 10-yard truck). Before placing the Pigmented Admixture in a mixer drum, the drum must be thoroughly cleaned and wetted with approximately 35 gallons of mix water and a portion of the aggregate added. This mixture shall mix for 3-4 minutes while the truck hopper and fins are washed with 5 gallons of water. After adding the remainder of the concrete to the truck, the load shall mix at a mixing speed for a minimum of 80 revolutions or 10 minutes.

At the Contractor's option, Pigmented Admixtures may be added at the site, in which case:

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The truck shall be charged and mixed at the plant, as previously specified, with the required cement, aggregate and admixtures (excluding pigment admixtures), but only eighty (80%) percent to ninety (90%) percent of the required water shall be added. The truck shall leave the plan with 0 revolutions on its counter.

Once the truck arrives on site, the remaining water and the Pigmented Admixture shall be added and the load mixed a minimum of 90 revolutions.

Concrete will then be sampled and tested. If the consistency of the mix is not acceptable, additional water may be added not more than twice and mixing resumed for 30 revolutions each time. Once the mix is acceptable, it shall be discharged directly into the forms.

The total number of revolutions allowable after the truck has left the plant shall not exceed 150 and the mix shall be discharged within 90 minutes from when the truck has left the plant in order to achieve the correct workability.

All pigmented concrete shall be identical, unless otherwise directed. Variations in color/tint/hue will not be acceptable. Therefore, the same type and brand of cement, source of sand and water/cement ratio shall be maintained for each load of concrete used in the entire project.

The slump of the concrete shall remain consistent throughout the project at four (4") inches and should not exceed five (5") inches. If held-back water is added at the job site, the concrete should be mixed at mixing speed for an additional five minutes or 30 revolutions, whichever comes first, after addition of the water as per the above requirements, and before depositing.

Before providing the sample panel(s), the Contractor shall prepare pairs of 6 inch x 6 inch x 4 inch samples of pigmented concrete, one with and one without the color matched curing membrane. As many samples as necessary shall be produced until the color is satisfactory to the Engineer. The Contractor shall then furnish for approval and on site a concrete sampled for each color specified using the Pigmented Admixture. The sample shall be at least 4' x 4' x 4' and shall be given the specified surface texture and cured with the methods specified for the concrete installation. The Contractor shall not order the admixture until the samples are approved by the Engineer. Once approved, the samples shall be used for assessing color conformance of pigmented concrete installed.

Prior to making any field samples and the placing of any colored concrete, the Contractor, concrete supplier, Engineer-in-charge, and/or City representative shall meet and discuss methods of handling the colored concrete.

Prior to the mix design being made, the cement intended for use shall be checked to determine that its lightness/darkness is similar to the cement used in the original sample. The Pigmented Admixture shall be added in the standard proportion specified by the manufacturer. No fly ash or other admixtures (including, but not limited to, calcium chloride) shall be used except an air-entraining agent complying with ASTM Designation C 260, when directed by the Engineer.

Prior to commencing the placement of concrete, but after acceptance and approval fo the pre-construction field sample, the Contractor shall submit property labeled and identified samples of materials used in the approved sample as follows:

Coarse Aggregate	20 pounds
Fine Aggregate	20 pounds
Cement	20 pounds
Pigmented Admixture	1 pint
Joint sealer	2 linear feet
Surface sealer	1 pint
Mix design	1 certified copy
Silicon Carbide Aggregate	20 pounds

These samples shall be stored where directed by the Engineer and shall constitute material standards for the project. During construction, one (1) pint of cement from each load of cement delivered to the plant to be used in this specific job shall be retained and, after comparison with retained master sample, dated and stored with other retained samples. Aggregate source shall also be checked periodically, as directed by the Engineer, and compared with retained samples.

Water must not be sprinkled or otherwise added to the surface of the slab during finishing. Evaporation retardants may be fog sprayed provided they are not detrimental to the finished color of the concrete.

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Curing Membrane. If the concrete is pigmented as per this Section, the curing membrane shall be of the liquidmembrane forming type and shall be color matched to the pigmented concrete. Additionally, the curing membrane shall be of a type recommended by the Pigmented Admixture manufacturer and shall conform to both ASTM C 309 and all local, State and Federal regulations concerting volatile organic compounds (VOC). Plastic sheeting, burlap, paper, or other unspecified material shall not be used as a curing membrane.

2. Silicon Carbide Surface Finish.

In addition to the other finishing requirements contained within these specifications, the top surface of sidewalk shall have silicon carbide applied at the rate of 20 to 25 lbs./100S.F., as follows, unless otherwise directed by the manufacturer.

Immediately after substrate surface has been leveled and wood floated, before bleed water has appeared, the silicon carbide shall be applied evenly while there is sufficient moisture in the slab to saturate at least two dust-on coats. Troweling must be started early enough to complete all operations without use of additional water on the surface. Distribute the silicon carbide crystals uniformly (at the rate of 20 - 25 lbs, per 100 sq. ft.) either by hand or mechanical spreader over prepared wet slab. Crystals shall be applied in three separate shake coats. Use one-third (1/3) of th required quantity of crystals for the first application. Apply second application slightly after first application is floated. Do not throw the crystals or broadcast them with a shovel. Use an evenly distributed hand broadcast.

Trowel crystals uniformly into surface after each shake coat. After the second shake coat of crystals have been troweled once, sprinkle third coat over the surface. The surface must be uniformly coated. Use a steel trowel to leave grains at surface covered with a thin film of cement paste.

The final finish may be lightly troweled to produce a smooth surface free from defects or blemishes. Finish troweling shall be delayed until surface has set sufficiently to avoid burying the crystals, but must be accomplished before finish has hardened.

Exposure of the silicon crystals shall be accomplished with either of the following methods provided it results in a satisfactory finish:

- a) Water and a soft broom, or sponge. Allow concrete surface to set sufficiently so that light scrubbing will not cause pitting; or,
- b) A light 5% to 10 % Muratic acid washing to expose grains after the concrete is at least 2 weeks old. Acid shall be removed from the finished surface with clean water within 15 minutes after application; or,
- c) Other methods, as approved by the Engineer.

606.03.03 Detectable Warning Surfaces

THE FOLLOWING IS ADDED:

Detectable Warning Surfaces shall be of the type which can be set into uncured cast-in-place concrete. Glue/stick-on type warning surfaces shall not be allowed.

606.04 Measurement And Payment

THE FOLLOWING IS ADDED:

Item	<u>Pay Unit</u>
Concrete Sidewalk, " Thick, Colored	SY
Concrete Driveway, Reinforced, " Thick, Colored	SY

THE SECOND PARAGRAPH IS CHANGED TO:

When the RE directs undercutting of unstable material in the excavation area, the Department will make payment, for the additional excavation. The Department will also make payment, for the additional bedding if there is not an excess of excavation available.

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