



**PIONEER SQUARE ALLEYS DESIGN MANUAL**  
**INTERNATIONAL SUSTAINABILITY INSTITUTE**

**PREPARED BY:**  
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October 2015

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## HOW TO USE THIS MANUAL

This design manual is intended to unpack the embedded thinking of the designs for Nord Alley and Pioneer Passage, which have both received approval from the Pioneer Square Preservation Board. Rather than replicating the precise designs for these two alleys, it offers a district-wide series of strategies, tactics and materials that developers, utility providers and neighbors can use to continue an upward cycle of high-quality alley reconstruction within Pioneer Square.

**Developers & their design teams** can find guidance and suggestions for how their projects—whether new construction or rehabilitations—can thoughtfully engage and/or rehabilitate the alleys, starting on page 11.

**Utility providers** will find a well-constructed, easily approved template for achieving the goals of the Pioneer Square Preservation Board’s design guidelines as they install, upgrade, and subsequently restore underground utility lines. Of particular interest are the alley paving patterns on page 20 and the discussion of technical issues on page 24.

**Neighbors and preservationists**, many of whom helped develop and inform the alley’s design direction, will find in this document a tool to keep future partners accountable to the district’s high-quality standards, resulting in an ecosystem of high quality spaces that are engaging and inviting to all.

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# INTRODUCTION

The Pioneer Square Alley Design Manual is a guide for developers, utility providers, designers and engineers working on alley resurfacing projects within the neighborhood's historic district. It builds on a successfully community-driven process to document a suite of strategies that can be used to restore the alleys within the historic district's guidelines and expedite alley design improvements approval through the Pioneer Square Preservation Board.



Looking south from Yesler through Pioneer Passage.

## BACKGROUND AND PURPOSE OF THIS MANUAL

After years of successful alley activation, the International Sustainability Institute secured a 2013 Department of Neighborhoods (DON) grant to redesign two of the neighborhood's alleys between First Avenue S & Occidental Avenue S. These were: 1) Nord Alley between Main & Jackson and 2) Pioneer Passage between Yesler & Washington.

Following a successful community-based design process, the alley's surface treatment designs were granted a Certificate of Approval for construction on April 15, 2015 by the Pioneer Square Preservation Board (PSPB). At the time of this writing, final construction documents are being prepared for Nord Alley supported by a grant from the Puget Sound Regional Council.

The PSPB embraced the strategies used in Nord Alley and Pioneer Passage as a template for the future alley paving retrofits. The Board saw these strategies as harmonious with the historic district's context and character, offering neighborhood developers and utility providers a greater level of design specificity and certainty regarding the expectations of the PSPB.

The intent of this Design Manual is to record the strategies and materials employed in Nord & Pioneer Passage, thus providing future developers and designers with a vetted, well-honed tool to advance their own alley design responses.

## WHY DOES THIS MATTER?

As much as buildings or larger public spaces, the neighborhood's alleys are a vital component of Pioneer Square's rich cultural landscape, which was designated as both a national and local historic district in 1970.

As such, the design of alleys fall under the stewardship purview of the PSPB as directed in the districts' design rules, which require:

*Alley Paving. Alleys are to be paved with unit paving materials. Three types are acceptable in the District: remolded paving bricks, cobbles, and interlocking brick-tone pavers. Alleys should be repaired or re-paved in the original unit material when these materials remain available. All other alleys should be paved with remolded brick. The center drainage swale, peculiar to alleys, should be preserved as part of alley re-paving. Unit paved alleys should not be patched with any material other than approved unit paving.*

Working with these guidelines, the template alley design described here possesses both a consistency and flexibility. Over time this approach to the area's alleys will give the entire neighborhood a network of well-designed, inviting alleys that are an integral, and indeed defining component of the area's public life.

## WHAT IS REQUIRED?

Developers and designers can find the District's rules and guidelines online through the Department of Neighborhood's website.

While the strategies and materials described within this manual offer one, pre-vetted suite of design responses, they are not intended to be a design mandate. Organizations are welcome to propose alternative alley design responses that fall within the district's rules, recognizing that these will be more rigorously scrutinized by the PSPB.

As agencies and designers prepare their materials for the PSPB, they should also refer to and consider current Seattle Department of Transportation (SDOT) Street Improvements Plan (SIP) regulations and guidance. Meeting early with both SDOT and PSPB is highly advised to provide preliminary design guidance and streamline schedules.

## DESIGN COORDINATION

Applicants are encouraged to reach out to public and private utility providers and existing adjacent building owners to identify any opportunities to upgrade sometimes century-old infrastructure. This up-front coordination will result in lower individual project costs and provide for less overall disruption within the district.



On Nord Alley, Back Alley Bike Repair integrates beautifully with the residences above it.



Map of Pioneer Square Alleys  
 from Pioneer Square Street Concept Plans  
 Framework, Alliance for Pioneer Square

- PIONEER SQUARE ALLEYS
- PIONEER SQUARE

# CONTEXT

- Historically Appropriate Design (10)

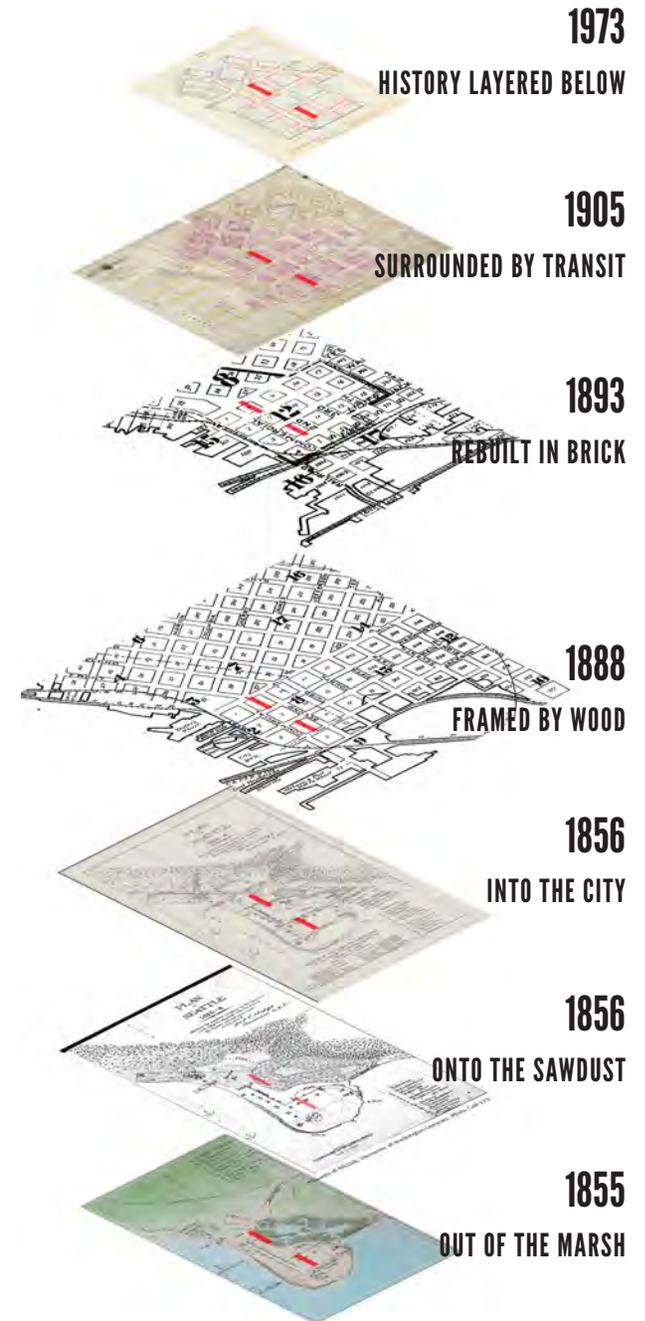


Looking from Occidental Park South into Nord Alley

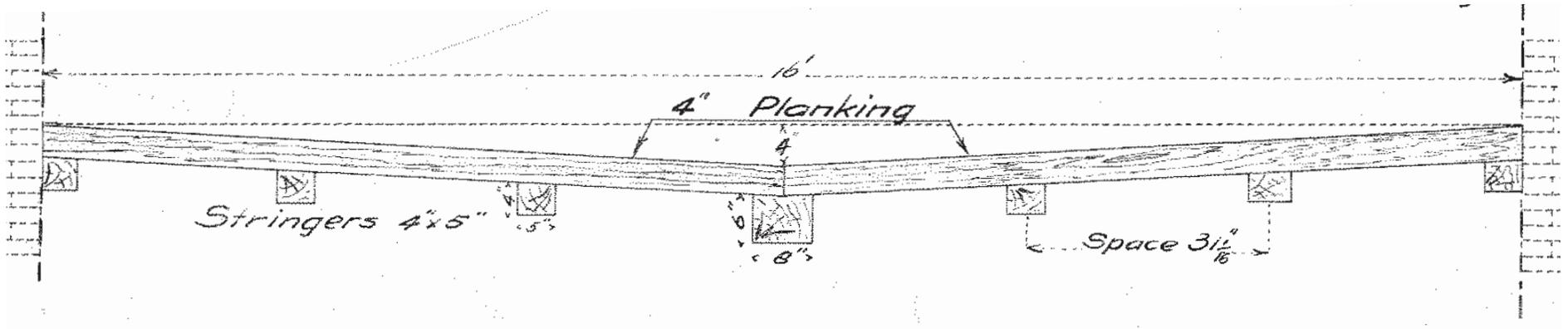
The transformation of Pioneer Square's alleys responds to the richly layered historical and cultural tapestry that surrounds them. For any designer it is important to respect and understand that context in order to appropriately respond to the unique design opportunities this context presents.

At the same time, a resurgent interest in the design, programming and management of public spaces has brought renewed interest and energy to once-overlooked parks, streets and alleys. These assets are now thriving.

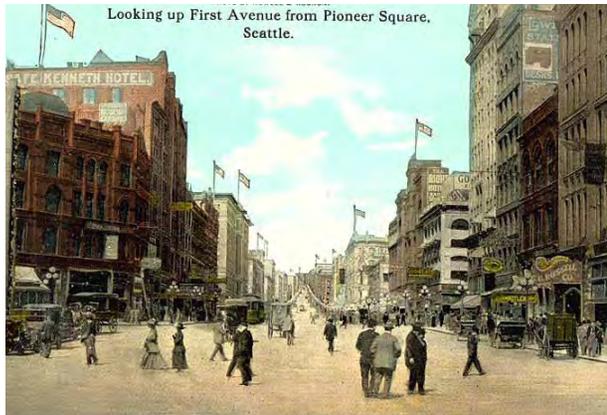
Some new businesses found that an alley frontage served their economic model perfectly. Back Alley Bike Repair and the Axis event space opened and restored doorways and dusted off windows that had not engaged Nord Alley in decades. On Pioneer Passage, a new Mexican restaurant, Casco Antiguo, built an alley facing deck instantly activating the space with the sociable sounds of diners.



Pioneer Passage alley with wood planking as paving, 1907



Pioneer Square has been a vibrant hub for over a century.



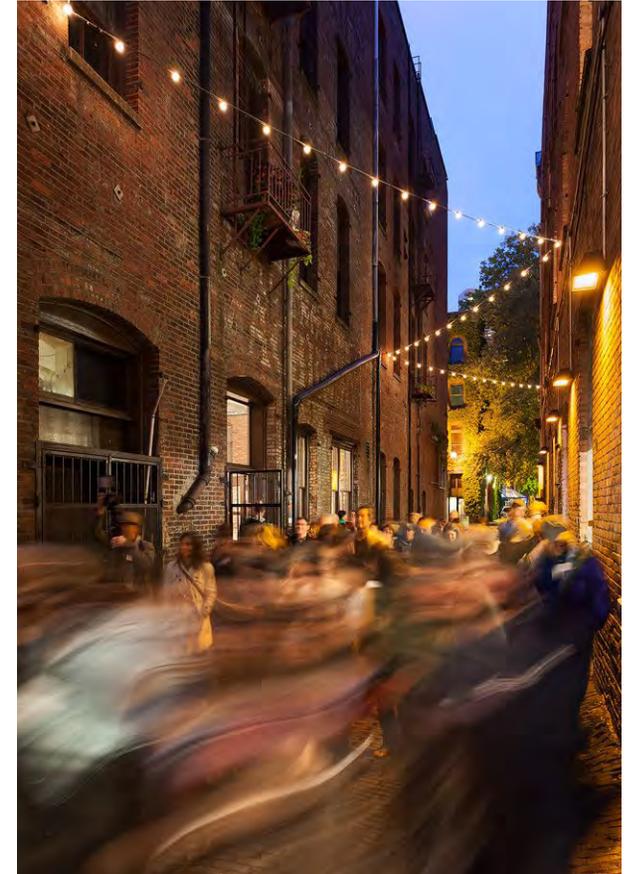
## HISTORICALLY APPROPRIATE DESIGN

The Pioneer Square Preservation Board requires a historically appropriate design using unit paving materials. The programming, event and interest in Pioneer Square's alleys is in great measure, due to their authenticity as "real" spaces within a rapidly changing city. A central challenge for the Nord and Pioneer Passage design team was balancing the historic legacy of the alleys with the desire to invite a more representative sample of the public into the alleys. Research formed the backbone of the design process, reaching into historic records to unearth the origins of and uses for the alleys. The design team also explored the context of the neighborhood – its shops and stores, buildings and landscapes – striving to keep the neighborhood alleyways grounded to their place in the world.

The results – as shown on the following pages – is an adaptive reuse strategy, deploying historic materials and patterns in new ways to craft a context sensitive response to a contemporary suite of program drivers.



Top: Watching the World Cup in Nord Alley  
Bottom: The back patio in Casco Antiquo, facing Pioneer Passage.



NightSeeing™ alley night walk led by Leni Schwendinger

# DESIGN

- Existing Conditions (11)
- Relation to Buildings (12)
- Paving Approach (15)
- Spatial Definition with Paving Materials (17)
- Paving Section (22)
- Project Extents and Integration (23)
- Coordinated Process (23)

The design template for Pioneer Square's alleys is informed by the history of the neighborhood yet leans forward assertively toward its future. By adapting a rich, rooted materials palette with a series of paving strategies, the goal is to make the alleys more inviting for contemporary and future users. This design hybridizes the old and the new to create a welcoming public space for the district's businesses, residents and visitors.

## EXISTING CONDITIONS

The alleys in Pioneer Square are in various states of repair. Some have been maintained well or have been recently improved; others have never been looked after since they were originally paved with brick. Still others have their original brick paving covered by asphalt and/or concrete overlays, giving a mottled,

patchwork appearance. The grading of the alleys is equally inconsistent: in some alleys drainage is exquisite; in others, a haphazard drainage pattern that creates puddles and channels.

Importantly, Pioneer Square is also the home to many subsurface areaways. While most of these voids are not located in the alleys, there are significant exceptions both within the right-of-way and on adjacent private property. The areaways' subterranean retaining walls should be evaluated by a structural engineer prior to commencing right-of-way alley work in order to develop a strategy to protect the areaway on the alley. In two recent examples--one in Nord Alley and one in Pioneer Passage--consultation with a structural engineer quickly led to a cost effective solution for the adjacent properties.



Top: Existing paving is a mix of materials and layers of repairs.

Bottom: Areaway walls should be evaluated for structural integrity.

A first step for any design team is to understand which of these surface and areaway conditions they are working with, for it will form the basis for tailored response to the conditions on their given alley.

## RELATION TO BUILDINGS

For designers, understanding the complexities of the alley-facing building facades is a critical first step. These buildings have a rich accumulation of both utilitarian and ornamental elements that have accumulated over the decades. Some of these features are no longer in service, while others are waiting to be rediscovered.



### 1 Reinforce the assets of existing buildings.

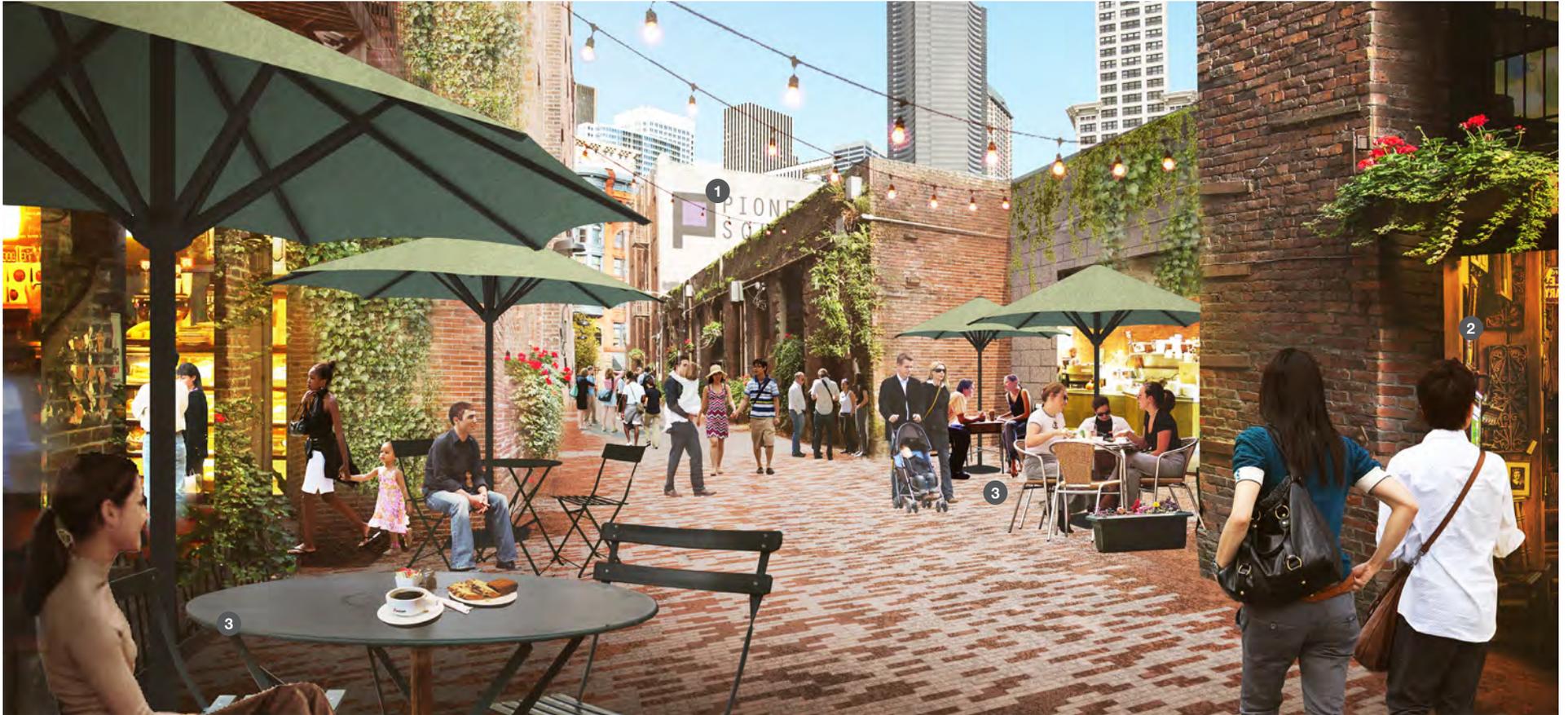
Design teams should make a concerted, comprehensive inventory of these existing architectural features in order to develop a customized alley response that still works within the paving strategies described below.

### 2 Emphasize building entries.

Often, boarded-up building openings have the potential to become more transparent and engage the alley.

### 3 Consider opportunities for alley rooms.

It's also important to understand where buildings setback from the right-of-way line. Often these conditions provide an ideal setting for a community gathering space where people can linger and the alley can morph into a gathering space.



Pioneers Passage Alley: new condition (artist's rendering by Olson Kundig Architects)

- 1 Conduit
- 2 Brick Corbel
- 3 Wood "Infill" Storefront / Back

- 4 Electrical Junction Box
- 5 Alley Garden
- 6 Fire Escape

- 7 Vent Window
- 8 Modern Chain-link Security Gate
- 9 Seismic Renovation Rosettes

- 10 Art
- 11 Gutter Guard
- 12 Fire Alarm
- 13 Concrete Dolphin



Due to their zero lot line condition, many buildings also have various utilities entering the alley surface, often protected by a concrete dolphin—or protective bumpout—that extends into the public right-of-way. These may intrude into or obstruct the paths of travel through the alleys, create grading challenges or be significant architectural features that deserve

further preservation. While these private pipes encroach upon public property, the design team and client should work with the City to discuss the wisdom of retaining or removing as these protective dolphins; if the decision is made to remove them, care should be so as not to damage utilities or the adjacent buildings.

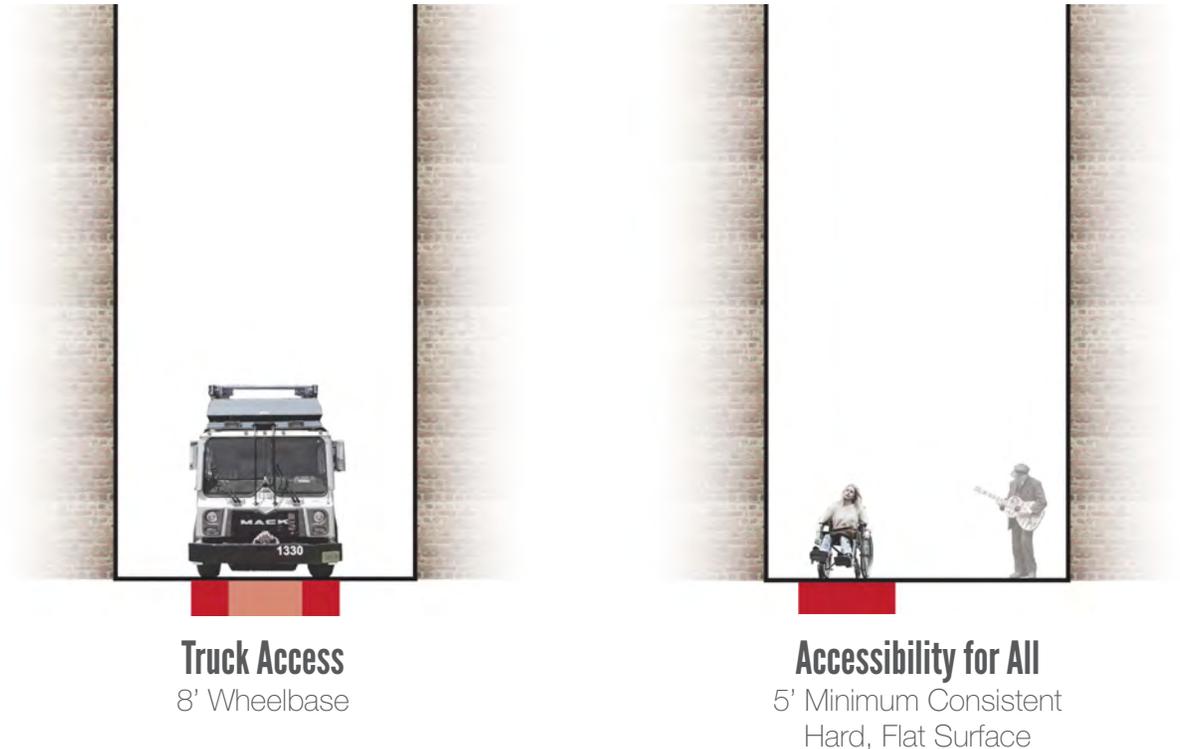
Access down the alley for different user groups

## PAVING APPROACH

As described in the PSPB's district rules, alley paving must consist of a unit paving material, but beyond that broad statement there is no further guidance provided. The PSPB also has a keen interest in seeing historic materials reused, including the worn, edge-set clay bricks found in many of the district's alleyways.

However simply resetting the bricks is problematic under accessibility standards. The existing pavers do not meet current ADA guidance for smoothness and cannot be used as an accessible surfacing material.

Therefore, in consultation with the City's review team, a blended approach—mixing contemporary and historic materials—makes sense to accommodate all users while also placing the historic alley materials in appropriate areas of the alley.



## Salvaging Historic Bricks

Whenever any historic alley paving bricks are encountered during design and construction, they should be salvaged and stored so that this one-of-a-kind resource is retained. In some cases, this will mean removing debris from the brick surfaces, but more often it will simply mean palletizing, and labeling the historic bricks. If needed, the material should be provided to SDOT for storage within one of their materials storage yards, or boneyards. If more bricks are removed from a given alley than are needed to resurface it, then those bricks should remain within the storage yard for use on future Pioneer Square alleys. Under no circumstances should existing historic brick pavers be discarded as construction waste.

Contractors should take care not to break or damage any bricks, and contract documents should refer to penalties for damages to bricks. Other historic materials encountered should also be salvaged, with the exception of asphalt and concrete.



City of Seattle "boneyard" (salvage storage yard)

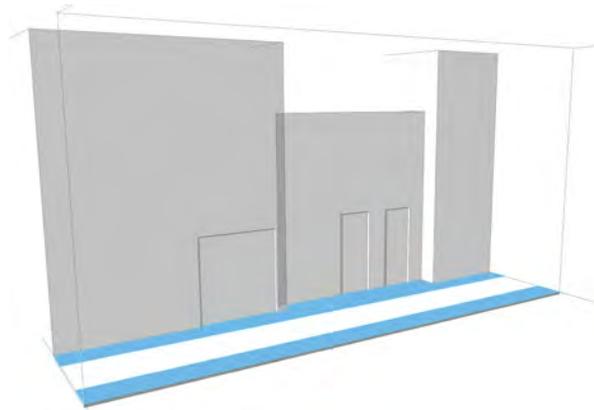


Palleted bricks ready for storage

## SPATIAL DEFINITION WITH PAVING MATERIALS

Each alley is unique. Some opportunities may not present themselves as easily as in other alleys. Paving materials are the primary way to define various rooms and encourage new functions within Pioneer Square's alleys. While other strategies, e.g., planting areas, were explored during the Nord Alley and Pioneer Passage design process, these solutions were not favored by the community because they were seen as not being able to withstand the wear and tear of Pioneer Square's many demands.

Over the following pages, we explore the strategies used to define a unique paving solution that is tough and durable, mixing spatial

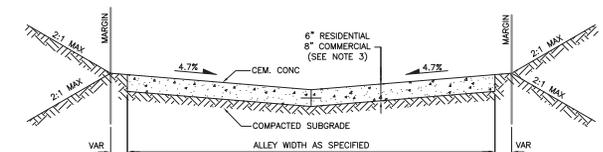
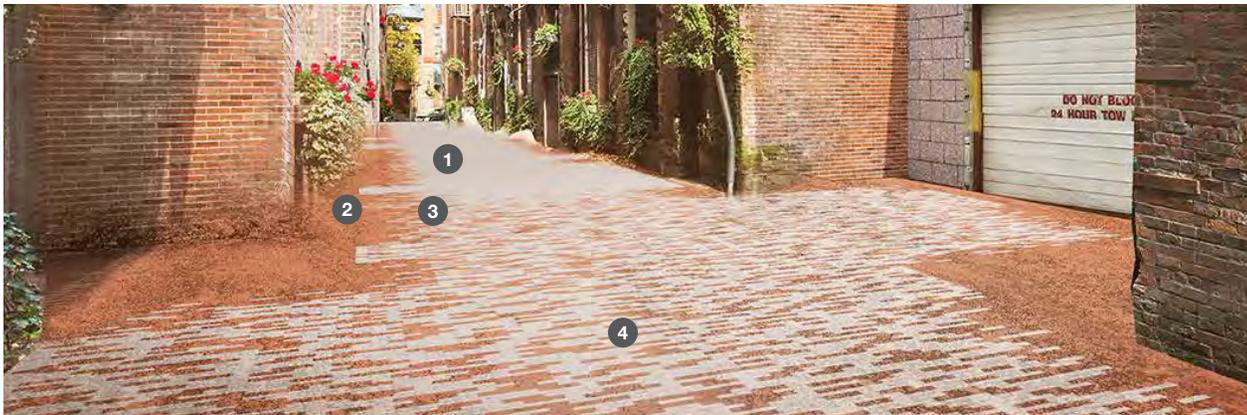


### 1 Define the accessible drive aisle.

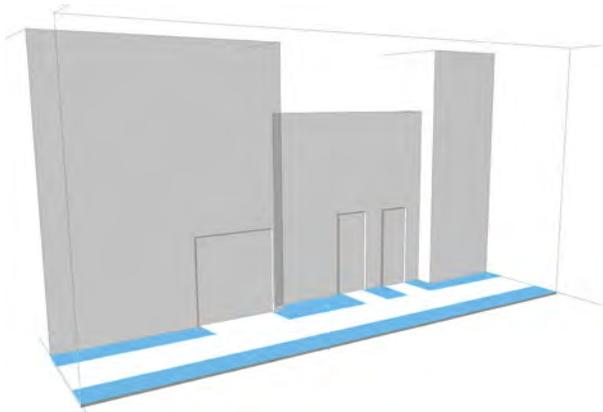
One of the most important distinctions is the definition of the drive aisle for trucks and vehicles traversing Pioneer Square's alleys. This stone-

surfaced area provides clear spatial definition regarding which areas are to be routinely driven on and which are deliberately flexible and ambiguous. Significantly, this drive aisle also serves as the accessible path of travel for people with mobility impairments.

In order to accommodate accessible travel, SDOT has allowed for a modified alley pavement section. The SDOT standard alley paving detail shows an alley graded towards the center at 4%, forming a rather steep V, making travelling along the alley more difficult for people using wheelchairs and walkers. With the goal of having the drive aisle double as the ADA path of travel, SDOT has allowed the cross-slopes in this zone to have only a 2% cross slope. Outside of the drive aisle, slopes can be steeper leading to doorway entries and/or matching existing grade, but even in these conditions, designers should strive to keep cross-sectional slopes below 5%.

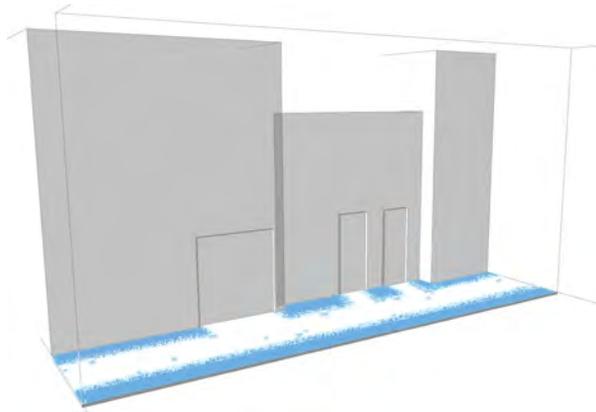


Top: City of Seattle Standard Alley Cross Section  
Bottom: Proposed Alley Cross Section



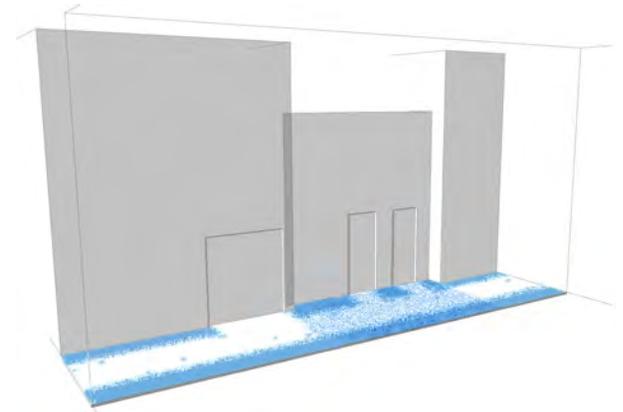
## 2 Define building entries and eddies.

Whether or not buildings entries are currently being used, an important function of the paving pattern is to invite new users and uses into the alleys. Therefore, the same accessible contemporary paving as used in the drive aisles is used to highlight and define the existing building entries, regardless whether they are currently being used. Between the entries, historic clay bricks provide contrast with the contemporary paving materials at the entries. These are the eddies in the alley, which can be used as places of respite, places to store garbage, display art, flowers or murals, or a variety of other uses.



## 3 Blur the edges.

Inherent in alleys is a lack of strict modal delineation and rigid separation of uses and modes. Alleys are flexible spaces and so the paving design should blur the lines between uses and materials to give a richer sense of the possibilities within this “overlooked” urban spaces.



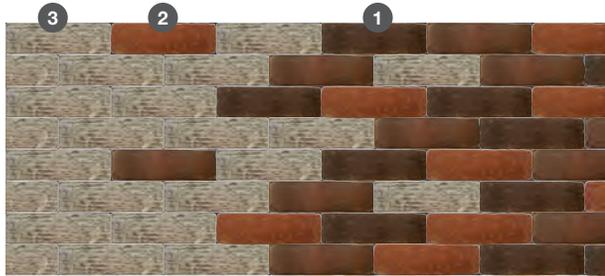
## 4 Define alley rooms.

Where buildings setback from the alley, use these opportunities to define rooms. These are the natural spaces within the alley where people might gather together to host events and create a stronger sense of community with alley residents and businesses.

## Paving Design

The pavement design balances historical appropriateness, modern day demands and cost effectiveness to develop a compromise paving approach. There are three primary pavement materials that are used to restore Pioneer Square's alleys. The most important is the (1) extant historic clay brick pavers that are salvaged from the alleys within the district. These bricks have an invaluable time-worn patina that cannot be replicated or replaced.

Supplementing the historic bricks are contemporary materials: (2) a clay brick and



- 1 salvaged brick from alleys when it is present and salvage is technically feasible
- 2 contemporary clay brick custom roman clay paver by mutualmaterials company (mauna loa color) or approved equal.
- 3 contemporary cut stone unit pavers: Grey Pearl Limestone (0214-L122) by Yellow Mountain Stone Works or approved equal.



The use of stone and brick together is common on the historic building facades of Pioneer Square.

(3) stone pavers that are used for their historic associations. Both clay and stone masonry can be seen throughout Pioneer Square buildings, though typically facing major streets and avenues.

The contemporary materials also pay another important function: they provide flexibility. By integrating a contemporary brick with the historic clay bricks, the district has options in the future if the historic bricks are no longer available for reuse at some point. The new contemporary material can be used in their stead.



Each paver should be dimensioned exactly the same with tolerances of no greater than 3/32". As is currently the case in the historic alley paving, pavers should be set on their narrow edge (approximately 2" by 8") so that a narrow running bond pattern is visible on the finished alley surface. This reproduces the historic pattern of brick pavers within the alleys.

For the paver layout, the design team has developed two templates to apply to the alleys. The first is the "Alley Corridor Paving Pattern," and second is the "Mixing Zone Paving Pattern." See the next page for a diagram of these patterns.

## Alley Corridor Paving Pattern

This is the primary pattern used throughout the district's alleys. In the center of the alley, the 8 foot travel lane mixes 90% stone pavers with 10% new brick pavers.

At the outside edges of the alley, the reused historic bricks are placed in the eddies where their rougher finish does not conflict with the ADA path of travel.

Starting between 18 inches to 4 feet away from the face of the buildings, a 4 foot blending zone uses a mix of new brick pavers, stone pavers and historic pavers to blur and bridge between the two zones described above. The blending zone should be comprised of 33% of each paving type, randomly blended.

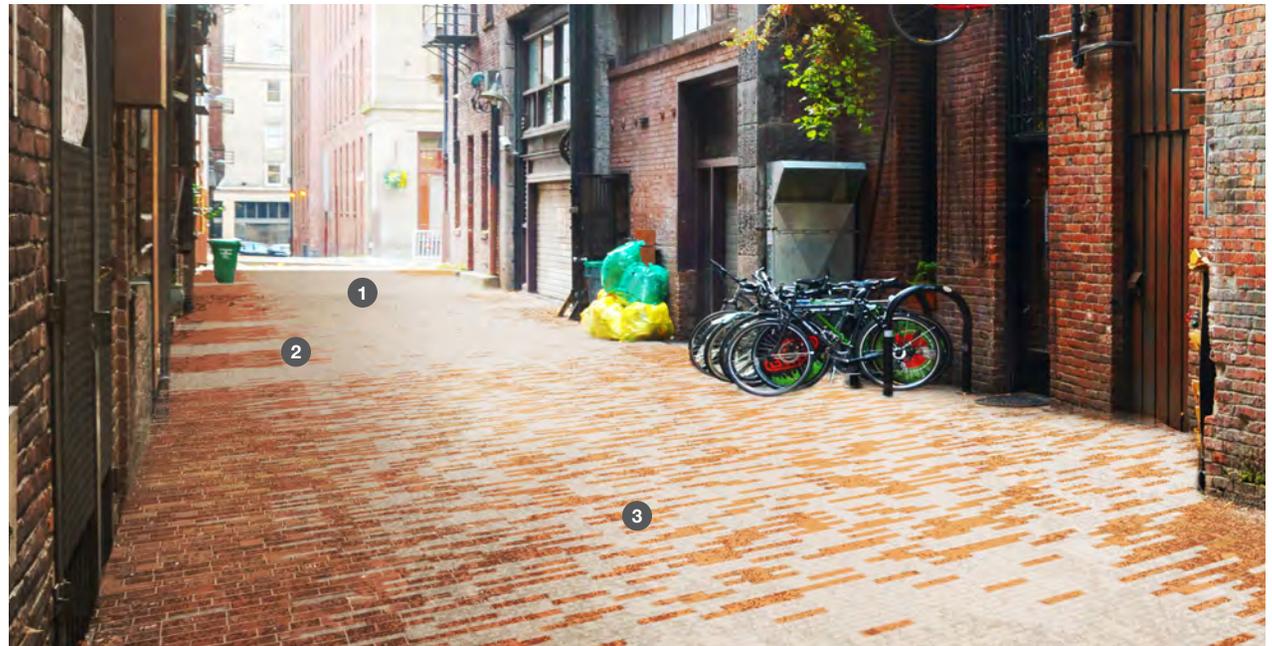
- 1 Alley Corridor Paving Pattern
  - 90% stone, 10% new brick (drive aisle)
  - 100% historic alley brick (edges)
- 2 Blending Zone
  - 33% stone, 33% new brick, 33% historic alley brick
- 3 Mixing Zone Paving Pattern
  - 50% new stone, 50% new brick (drive aisle)
  - 50% historic alley brick, 50% new brick (edges)

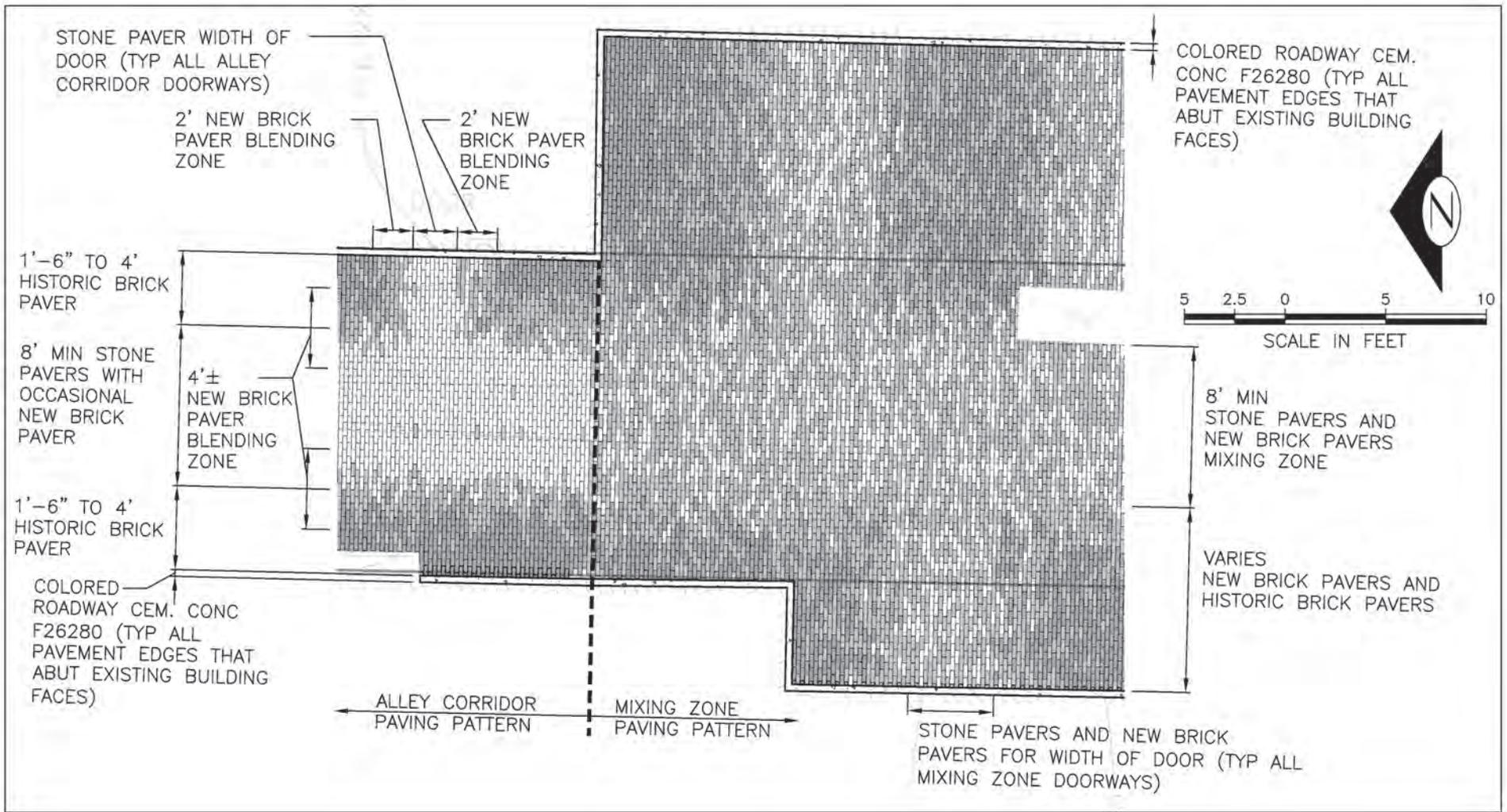
Where there are existing building entries, stone pavers with a 10% mix of new brick pavers (similar to the drive aisle) defines the alley entries. The width of this paving should be defined by the width of the adjacent doorway. Two feet to either side of the doorway a 33% mix of new stone, new brick and historic alley bricks are used to blend between entry and eddy.

## Mixing Zone Paving Pattern

Mixing zone areas use a 50/50 mix of new clay and new stone pavers within the drive aisle and the doorway entries.

Within the eddies—which maintain the same alignment as within the Alley Corridor Paving Pattern—historic bricks and contemporary bricks mix at an even 50/50 paving pattern. When mixed, the pavers should appear completely randomized.



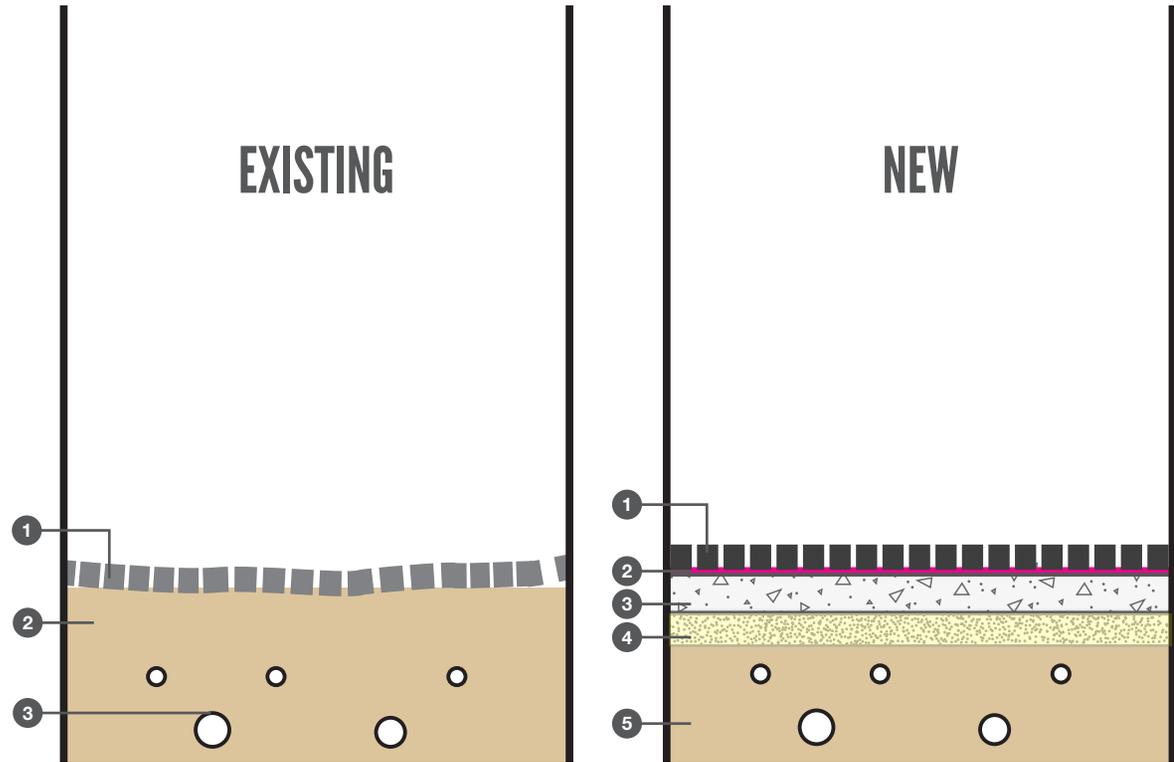


## THE PAVING SECTION

The SDOT standard section in many ways, is used as a starting point for the design of the alley paving.

After excavating to the recommended depth to establish a stable subbase, an aggregate base course is placed to provide support for an 8-inch concrete slab, which is typical for SDOT's alley paving projects. The slab should be graded to accept an even wearing course above it, and the concrete should be panelized to allow for easy removal of sections should providers need to access underlying infrastructure. At the outer edges of the slab, a 4-inch-wide dark-colored, concrete, flush curb is added above to retain the edges of the unit paver system. Above the 8 inch concrete slab a neoprene asphalt adhesive is applied. This viscous material adheres to both the concrete slab and the new pavers by providing a uniformly thick surface that the contractor can apply the pavers to. A bituminous sand is swept into the joints between the pavers to lock them together as a paving system.

Above the mastic, a mix of historic clay, contemporary clay and contemporary stone pavers are applied in the pattern described previously.



- ① Failing paving surface (various materials)
- ② Existing fill (various materials)
- ③ Existing Utilities

- ① New unit paving
- ② Neoprene asphalt adhesive
- ③ Concrete slab
- ④ Aggregate base
- ⑤ Suitable subbase

## PROJECT EXTENTS AND INTEGRATION WITH EXISTING ALLEYS

The owner and design team should consult the current Right-of-Way Improvement Manual (ROWIM) to determine how far and how much of an alley needs to be reconstructed for a given project. SDOT Directors Rule 5-2009 requires: “The minimum restoration requirement for openings one hundred (100) linear feet or greater is full-lane width restoration for all lanes affected.” Due to the requirements of the Pioneer Square Preservation Board, this restoration should be done in accordance to this manual or other PSPB-approved treatment. Take care to ensure that the transition between the new alley section and the existing condition is accessible for all users. A relatively low-cost transition material should be used to allow for future improvements to the remainder of the alley.

## COORDINATED PROCESS

Pioneer Square’s alleys are not often reconstructed. The opportunity to access long-buried underlying infrastructure should be harnessed during alley construction. Utility owners may include: Seattle City Light, Seattle Public Utilities, Centurylink, Comcast and private side sewers. Many new tenants may need infrastructure upgrades like high-speed Internet or additional electrical service. These conditions offer the opportunity to bring new clients online, or at the very least, place conduit runs for future service buildouts.

As the alleys are being reconstructed, the design team should coordinate across these various entities to ensure that infrastructure is repaired and replaced while the alley surface is open. This coordinated process will make it easier to gain a Certificate of Approval from the PSPB and a SDOT SIP Permit.

During construction care should be taken to coordinate between adjacent property uses. For example, access to parking garages should be carefully coordinated, or alternate arrangements provided for residents who wish to park their cars’ off of the alley. Garbage pick up will also need to have alternate arrangements during alley reconstruction.

# TECHNICAL ISSUES

- Geotechnical Conditions (24)
- Utilities (24)
- Accessibility ADA Compliance (25)
- Drainage (25)
- Approval (26)

Careful and thoughtful consideration of these conditions early on in the design process will result in a more successful, more streamlined design process and a better product in the long run.



Old utility lines exposed while trenching on a city street

## GEOTECHNICAL CONDITIONS

Any construction in Pioneer Square should carefully assess underlying geotechnical conditions. Careful research and documentation of subsurface conditions within each alley will help design teams successfully navigate geotechnical challenges unique to Pioneer Square. Archival research, geotechnical borings and analysis, and reports consultation with a structural engineer, a geotechnician and/or archaeological investigations will aid in this process.

## UTILITIES

Various utility providers may have assets within the alley right-of-way or may want to install utilities within the right-of-way. Coordinating across these various entities will help the design teams provide a coordinated design and construction response. In some cases, this may also result in a cost-sharing opportunities reducing the burden for any one agency.

At the very least, additional conduit runs should be placed in the alleys to give future utility providers access to run new technologies into the adjacent buildings.

One specific detail for the paving system should be noted: coordinate with utility providers to develop appropriate access riser details to accommodate the paver system.

## ACCESSIBILITY AND ADA COMPLIANCE

Notably different than many of Seattle's alleys, Pioneer Square's reconfigured alleys are meant to be accessible to visitors using wheelchairs, walkers and other mobility assistance devices, as well as vehicles. As this work is done within the context of a historic retrofit, design teams should review their accessibility approach with SDOT's ADA specialist during concept development, both with regards to travelling along the alley and with accessible approaches into the alley from perpendicular sidewalks.



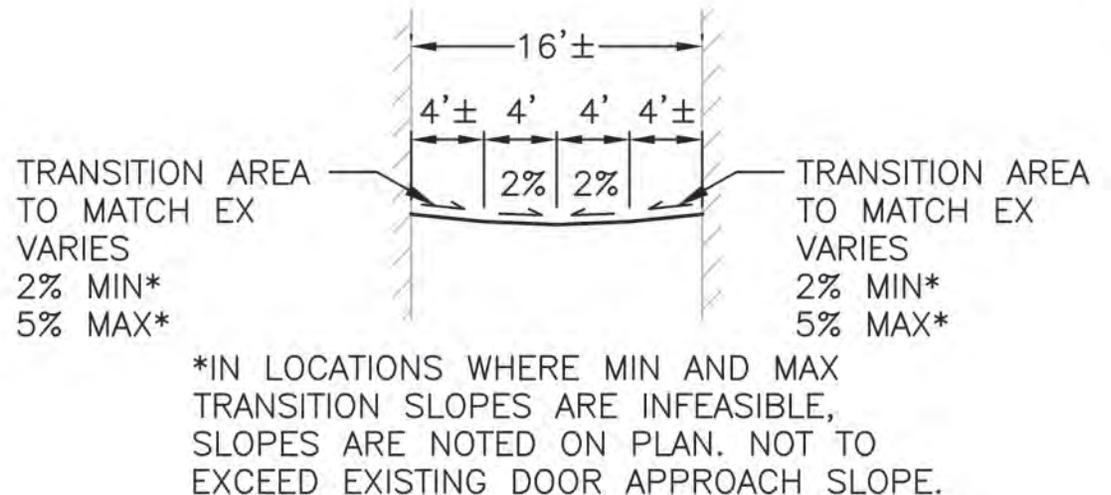
Steep cross-slopes are not ADA compliant

Achieving this goal is complicated when only a portion of an alley is being repaved or repaired. Work with SDOT during early SIP guidance to develop an adequate and appropriate ADA transition from the existing alley surface to the restored paving condition.

## DRAINAGE

The City of Seattle's standards for alleys have surface water flowing to one end of the alley. Due to Pioneer Square's zero lot-line conditions and legacy drainage infrastructure, this standardized approach is often infeasible.

Early in the process, the design team should work with SDOT and SPU to develop a workable surface water design approach in coordination with the project's grading design.



Proposed Alley Cross Section

## APPROVAL

All work with in Pioneer Square's alleys need to be approved by at least two City agencies and possibly several others. The first is the Pioneer Square Preservation Board and the second is SDOT, as part of their SIP process.

Depending on the project other permits maybe may also be required, including grading, shoring, master use, side sewer, water and/or a building permit.

Early briefings and guidance from the Pioneer Square Preservation Board can help design team's be successful in securing their Certificate(s) of Approval. Certificates of Approval are typically secured after SDOT has reviewed and approved the 60% SIP plan sets. SDOT plan reviewers will require Pioneer Square Preservations Board's Certificate of Approval prior to giving final sign off of the SIP permit. By following these alley design guidelines, applicants will be quicker in securing the Certificate of Approval.