

West Jefferson Streetscape Revitalization Conceptual Designs



Prepared for the Town of West Jefferson, NC

June 2015

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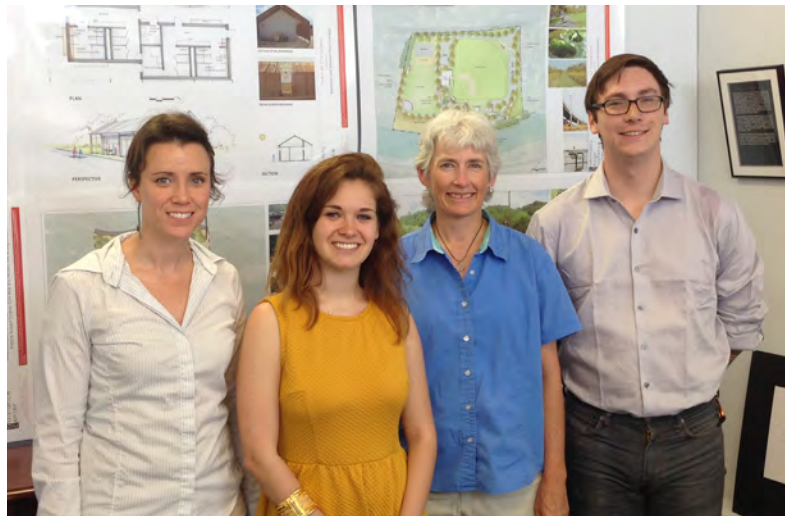
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**The Community Design Assistance Center (CDAC)** is an outreach center in the College of Architecture and Urban Studies at Virginia Tech that assists communities, neighborhood groups, and non-profit organizations in improving the natural and built environments. Assistance is provided in the areas of landscape architecture, architecture, planning, and interior design. Working with communities, the conceptual planning and designs provide communities with a graphic vision of their project that can then be used for grant applications and fundraising for the next steps toward implementation.

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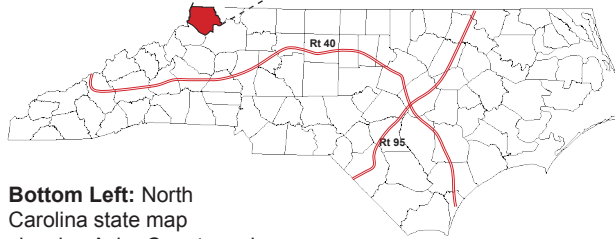
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## West Jefferson Streetscape Revitalization Conceptual Designs

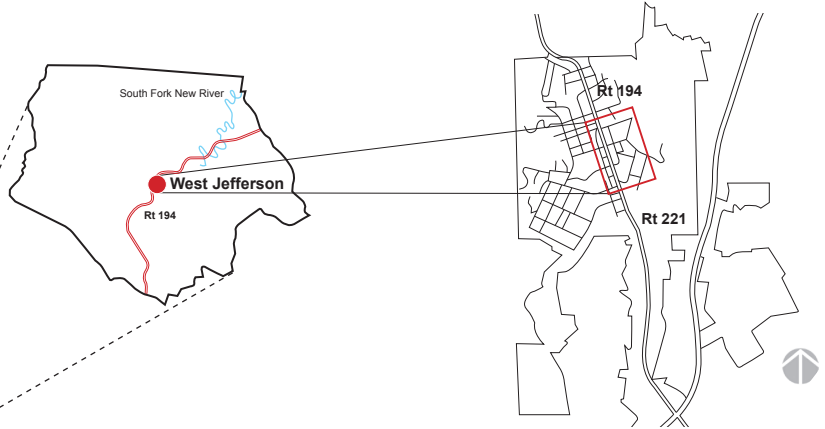
### PROJECT DESCRIPTION

**Top Left:** Ashe County map showing West Jefferson's location along Rt. 194.

**Top Right:** West Jefferson town boundaries showing project area and major roadways.



**Bottom Left:** North Carolina state map showing Ashe County and major interstates.



West Jefferson is a community of approximately 1,299 people located in Ashe County in northwest North Carolina. The town is situated in the Appalachian mountainous region, known as “North Carolina highland country”. Once known as a major stop on the railway lines, West Jefferson has a rich history whose economy is increasingly devoted to tourism. West Jefferson is proud of their community and hopes to utilize its downtown street improvements to promote more tourism and stimulate economic growth.

In 2003, students from North Carolina State’s Landscape Architecture program participated in a design charrette to improve Jefferson Avenue, the town’s primary downtown street. This led to the West Jefferson Pedestrian Plan in 2010, which outlined the community’s commitment for a more pedestrian friendly revitalized downtown environment.

In 2015, the Community Design Assistance Center (CDAC) was tasked with developing conceptual designs for revitalizing the existing streetscapes of West Jefferson focusing on Main Street, Backstreet, and the Second Street traffic gateway. In this process, the team also explored other areas of opportunity that could link together the multiple focus areas, including alleyways, open green spaces, and empty lots. CDAC worked closely with the stakeholders and community to develop these concepts which are discussed in further detail in this report.

# PART 1



## West Jefferson Streetscape Revitalization Conceptual Designs

### DESIGN PROCESS

The design process began with an initial site visit to West Jefferson in January 2015. The CDAC team was introduced to West Jefferson by watching multiple presentations in town hall which illustrated existing development efforts, tourism campaigns, and community programming. The team explored the town through a walking tour which pointed out potential streets/areas for redevelopment. It was apparent from the walk that West Jefferson had already done a number of community improvements through public art and murals, however there were ample opportunities to build upon the town's existing efforts to bring art and greenery downtown. By gathering on-site data, documenting existing conditions, and taking soil samples, the team was able to understand the opportunities and constraints of each major streetscape and accompanying sites. This analysis would later influence the design concepts.

In March 2015, the CDAC team had the opportunity to meet again with stakeholders to discuss concerns and desires for the project. After careful consideration of the site analysis, inventory, and case studies, a set of multiple preliminary concept designs were developed for each area. The team worked closely with the stakeholders group to better understand their vision for the community while presenting initial concepts for each target area. After receiving stakeholder comments, the design alternatives were then revised and combined into a final conceptual master plan including focus areas of each major streetscape and site designs. These designs were presented at a community meeting on May 11th, 2015, where they were reviewed and commented on by community members.

On the next page is the overall conceptual master plan followed by description and designs for Main Street, Backstreet, and the Second Street Gateway, and focus areas.



The CDAC team meeting with community members.



The CDAC team member Ashlee Wells and Lara Browning participating in a walking tour of West Jefferson.







## FINAL DESIGN: MAIN STREET

### Main Street Master Plan

It was a goal of the CDAC team to draw upon West Jefferson's existing artistic culture as inspiration for rejuvenating a sense of community back into the streetscape. The final conceptual design for West Jefferson's Main Street combines the major strengths of a more "pedestrian-friendly" streetscape, while incorporating planting areas for stormwater management. This was accomplished by widening the existing sidewalk into a promenade, allowing for the addition of social spaces and urban greenery.

The form of the final design was based on the initial idea of proposing widening the sidewalks to 14 feet. The original sidewalk (8 feet) then becomes dedicated to pedestrian circulation, while the additional 6 feet alternates between planting beds and brick seating areas. The geometry of these spaces is defined through running brick paving bands, giving a materialistic embellishment to the walkway. This style is exaggerated where the promenade and alley entrances intersect by colored "brick quilt squares" within the pavement. Other artistic elements in the streetscape include 3D sculptural bike racks, brick paved crosswalks, and painted benches. Within each planting bed on the promenade is a small street tree, lining Main Street with urban greenery. The combination of a more pedestrian friendly walkway with tree lined streets helps reinforce Main Street as a primary commercial/tourist destination within the West Jefferson community.

Stormwater retention was incorporated into the Main Street design through sidewalk bump-outs, which are planted curb extensions into the roadway. Additionally, these are used for traffic calming. Constructed as "rain gardens", the bump-outs trap stormwater from the streetscape through the use of aesthetic plantings. This is primarily seen in the intersection of Main Street and Third Avenue. The CDAC team believes that West Jefferson can be a regional leader by applying sustainable stormwater management techniques through urban greenery.

While the grass field at the intersection of Main Street and Sixth Avenue is private property, the final concept proposes a simple pergola and seating area. If the property ownership were to change in the future, this land could become another park space for the community. The incorporation of large planted trees would buffer the park space from an existing parking lot, making the space ideal for an open multi-purpose field.



## FINAL DESIGN: MAIN STREET

In addition, the CDAC team sought to revitalize Main Street's alleys and make them an asset to the community by creating a mural walk based on "the timeline of West Jefferson." Assigned numbers 1-7, each alley (including Third Avenue) highlights an important historic time period within the development of West Jefferson. The themes come to life through painted murals that correspond to each historical time period. The physical design of each alley incorporates various materials that were inspired by historical characteristics. In an analysis of connections to other streets, the CDAC team believes West Jefferson should focus primarily on the designs of alley's 1, 2, and 6 as most important (see page 17).

The Main Street master plan, perspective, and focus areas can be found on the following pages.

Main Street Master Plan



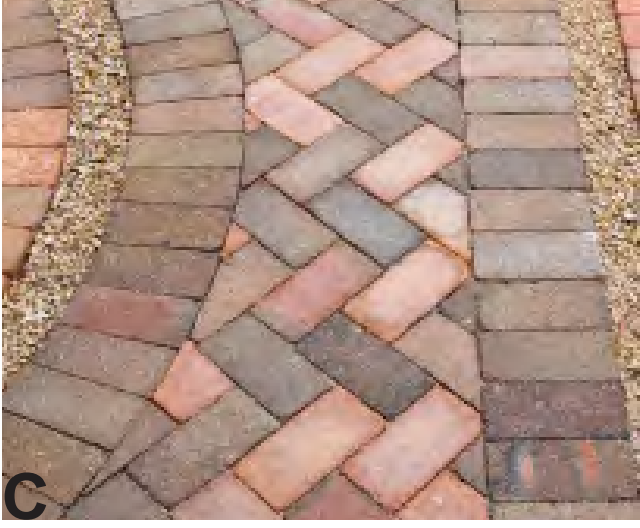




**East Main Street Perspective,  
with a possible street fair**



Main Street Focus Areas





Main Street Focus Areas



## FINAL DESIGN: MAIN STREET

### Alley Revitalization

In addition to the revitalization of Main Street, the CDAC team believes the associated alleyways were a critical area of design concentration. As West Jefferson wishes to continue increasing the number of tourists to their community, alleyway design can enhance the overall streetscape aesthetic while resulting in more pedestrian friendly connections. Alley revitalization provides West Jefferson with an amazing opportunity to showcase their artistic culture through the creative design of unused spaces.

Themes for West Jefferson East Main Street Include:

1. Centennial Theme  
Celebrating West Jefferson's history, culture, and development over the past 100 years
2. West Jefferson Culture Theme  
Celebrating West Jefferson's value of culture and spirit through representing community arts
3. Revolutionary War Theme  
The beginning of West Jefferson's establishment during the post-revolutionary era
4. Town Founding 1916 Theme  
The commemoration of the founding of West Jefferson in 1916; a "new town's beginning"
5. Virginia Creeper Theme  
Highlighting the importance of the first railroad to West Jefferson, the Virginia Creeper
6. Railroad Industry Theme  
The associated lumber, industrial, and cheese businesses that the railroad brought to West Jefferson
7. West Jefferson Landscape Theme  
Symbolic of the natural beauty in West Jefferson's mountainous landscape

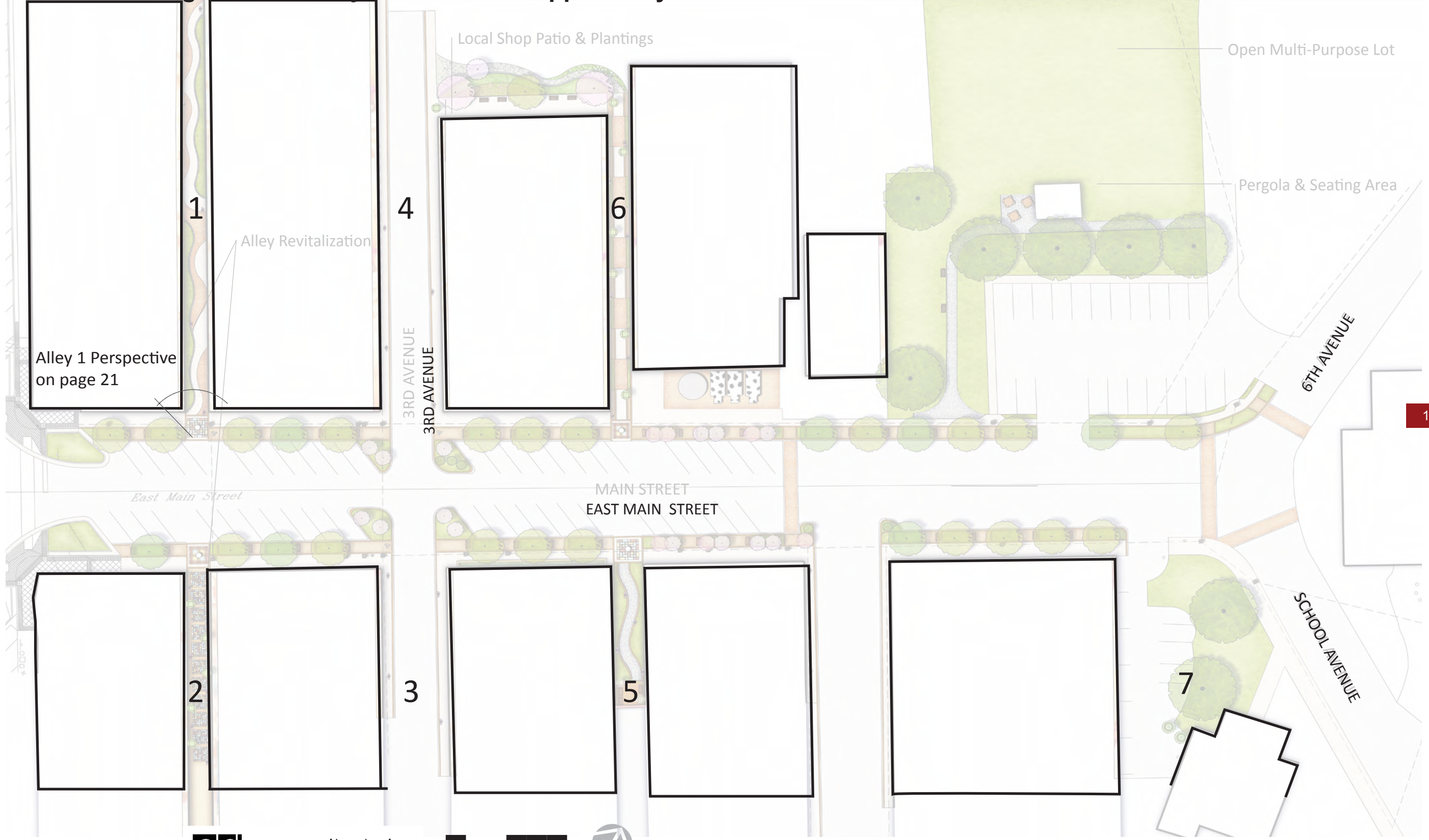


**FINAL DESIGN: MAIN STREET**

The following pages include a map locating each of the alleys as well as plans, perspectives, and other images relating to each alley.

Alley Revitalization Locator Map	18
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Number Assignment of Alleys/Streets with Opportunity



Alley 1 Perspective on page 21

Alley Revitalization

Local Shop Patio & Plantings

Open Multi-Purpose Lot

Pergola & Seating Area

East Main Street

MAIN STREET EAST MAIN STREET

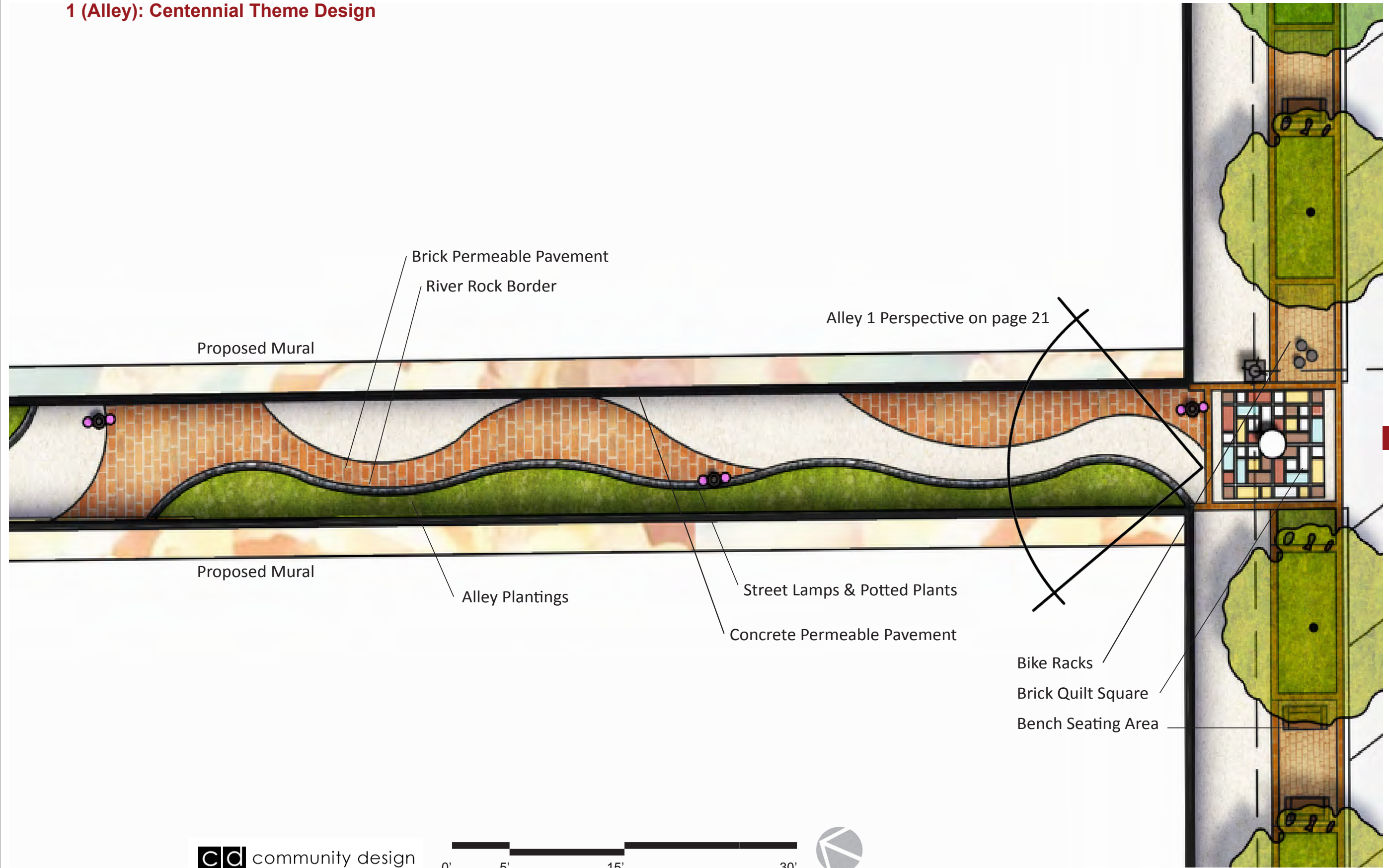
6TH AVENUE

SCHOOL AVENUE





### 1 (Alley): Centennial Theme Design





1 (Alley): Centennial Theme Idea Images

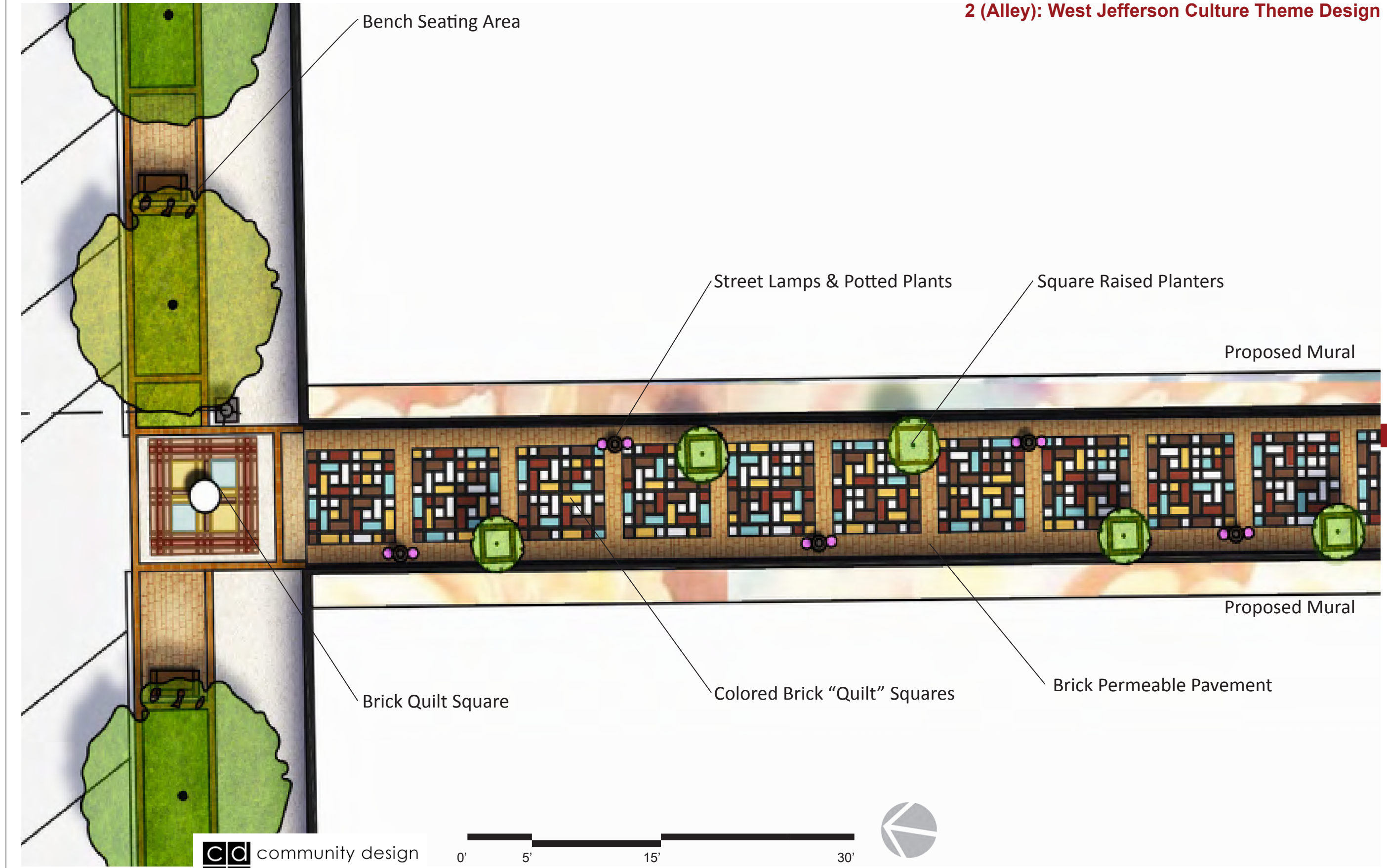






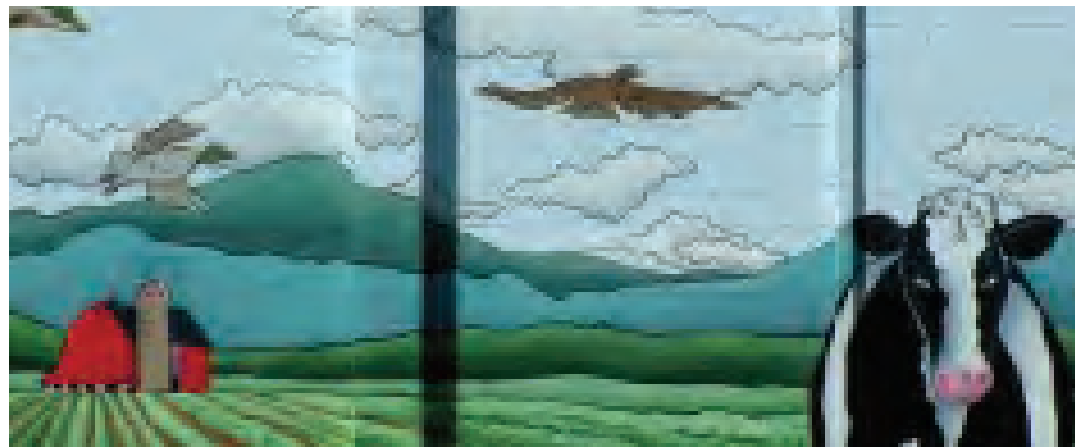
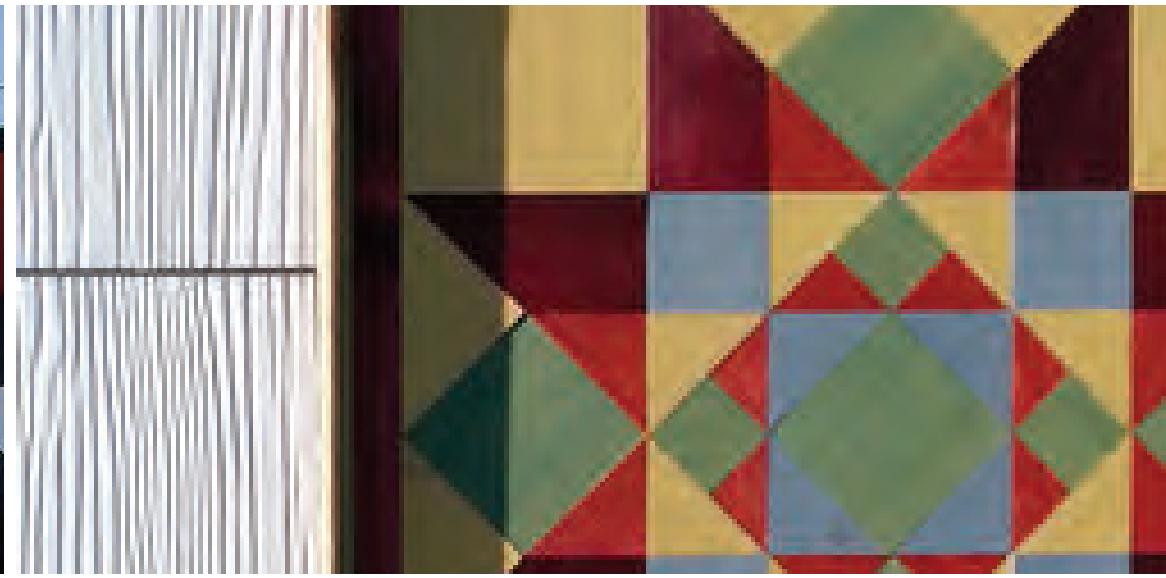


2 (Alley): West Jefferson Culture Theme Design



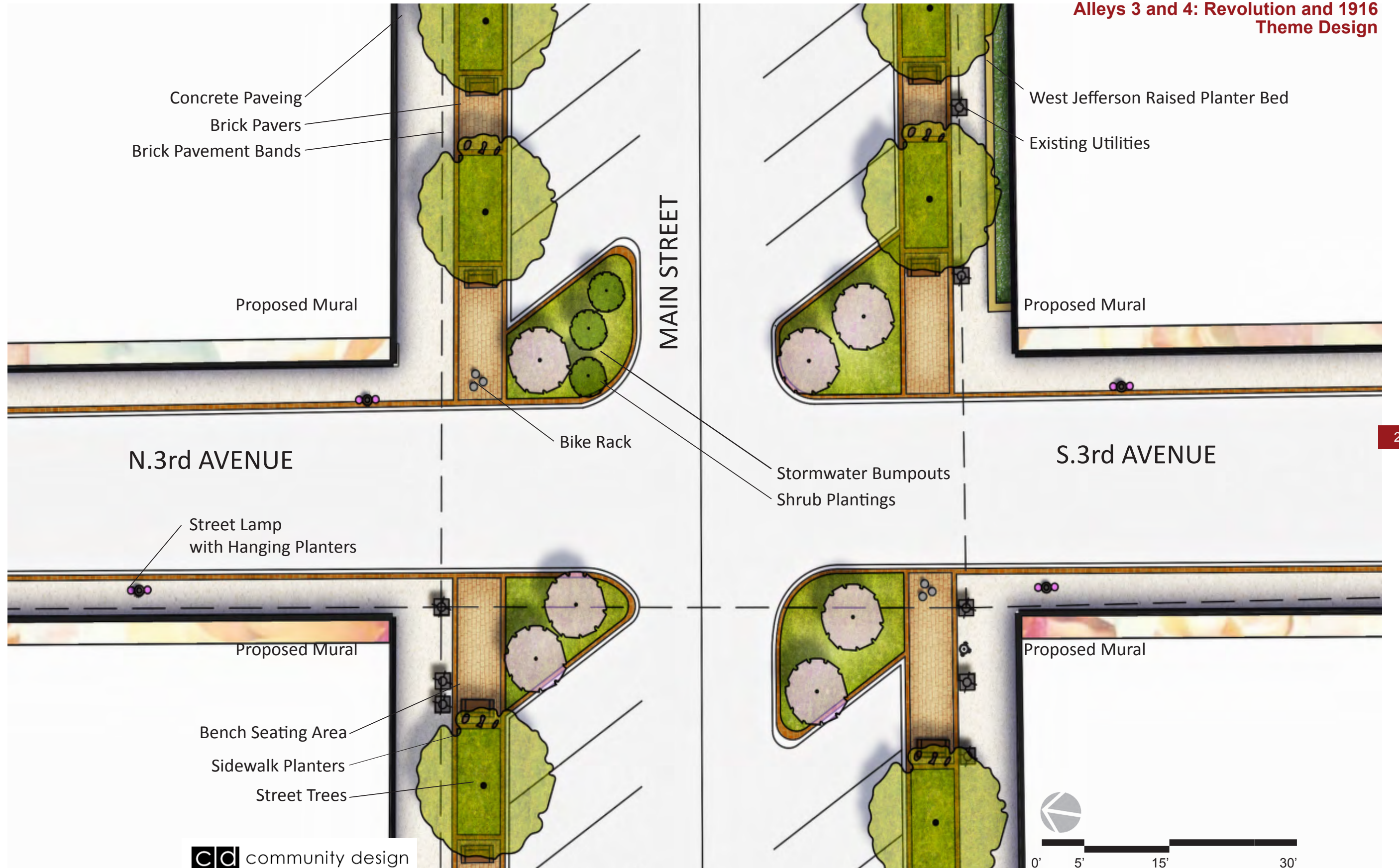


2 (Alley): West Jefferson Culture Theme Idea Images



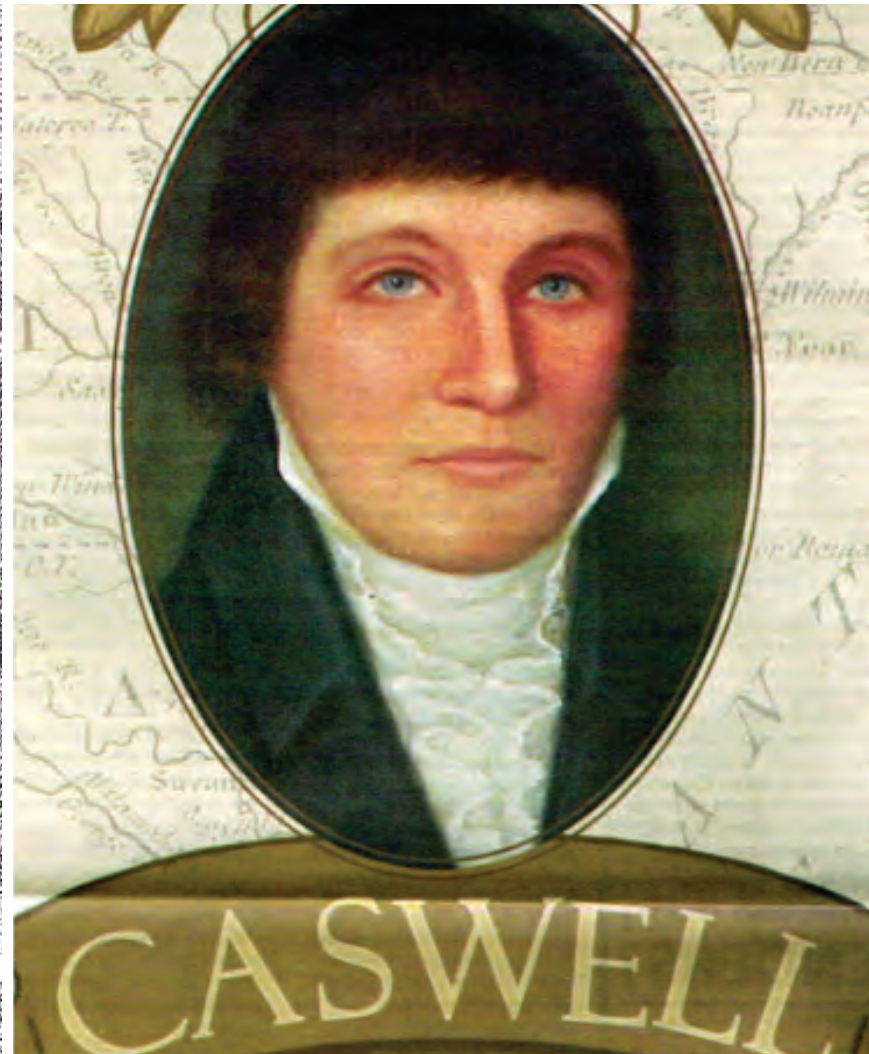
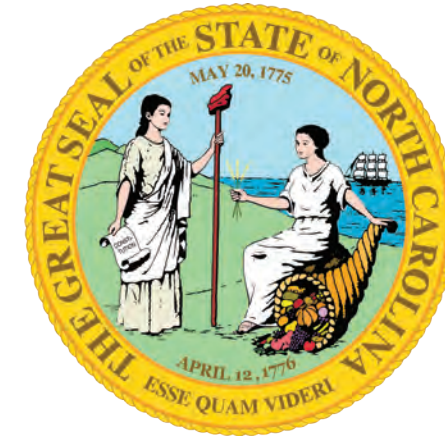


**Alleys 3 and 4: Revolution and 1916 Theme Design**



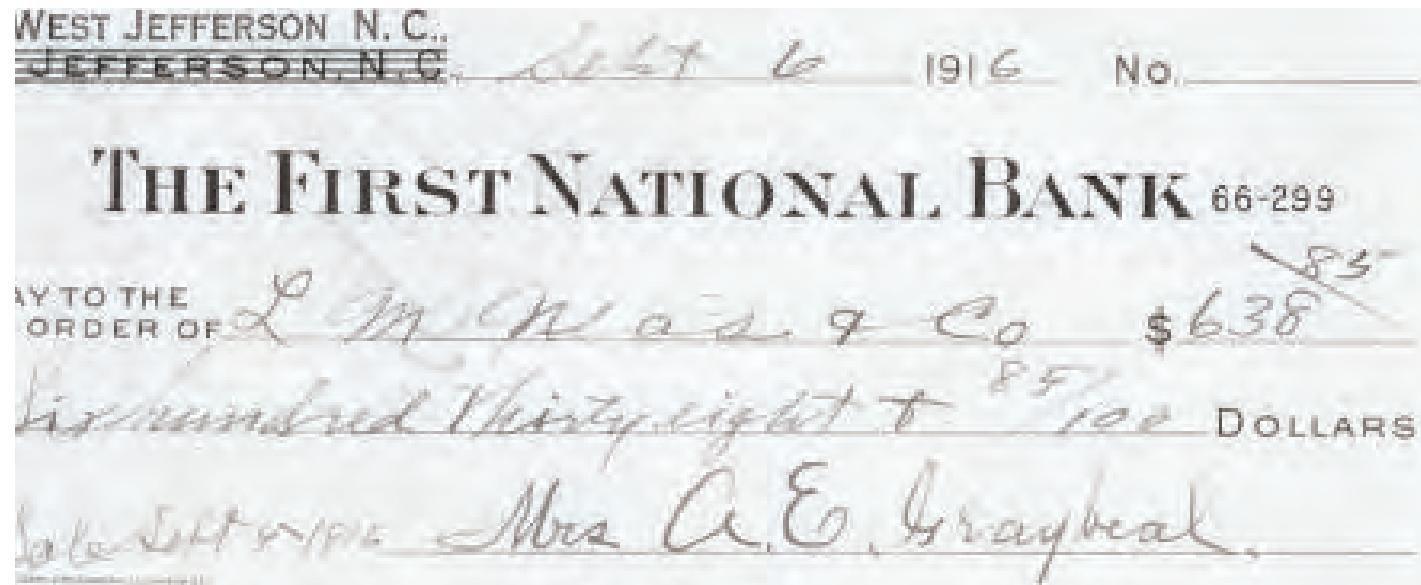


**Alley 3 (Third Avenue South): Revolution Theme Idea Images**



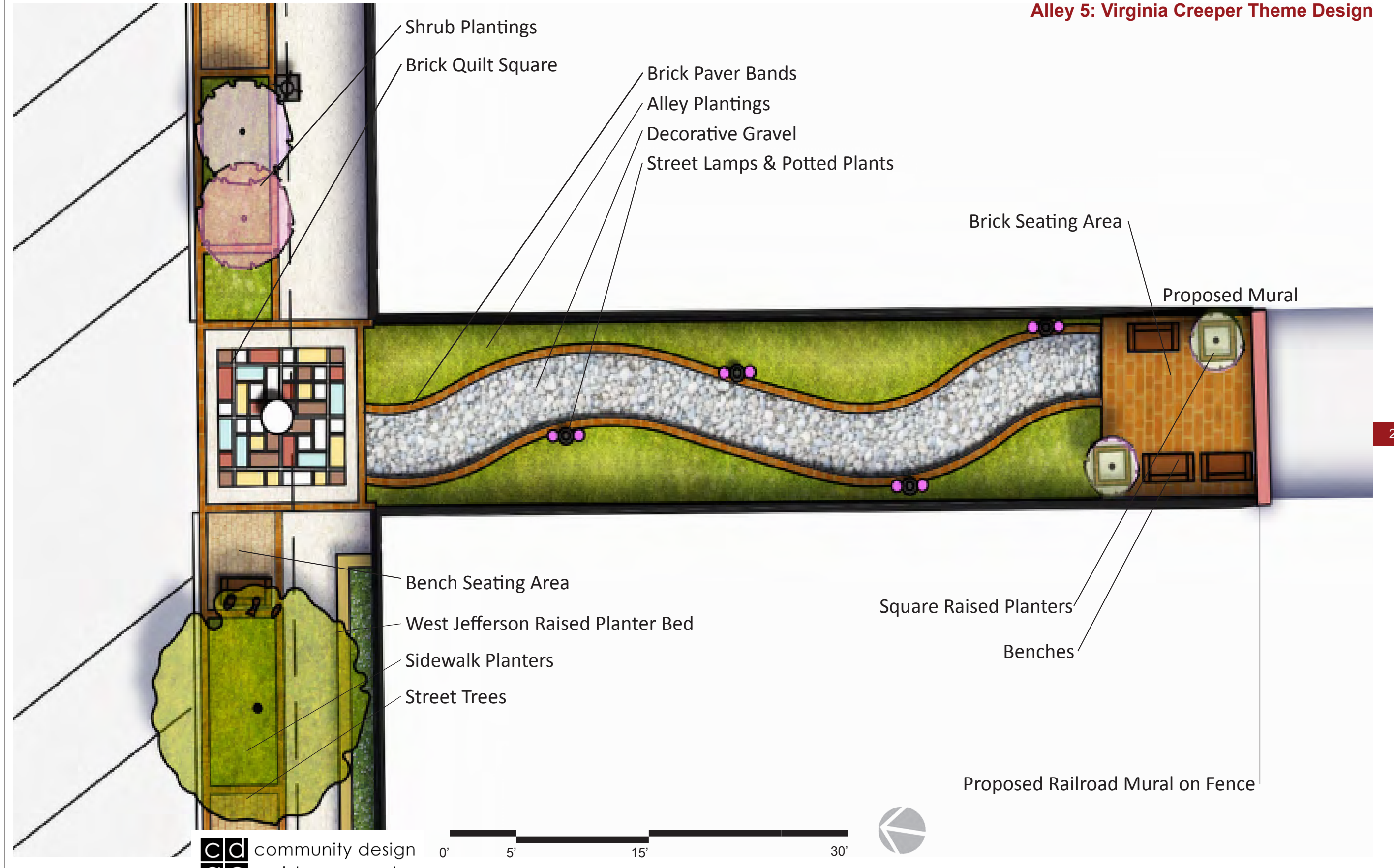


**Alley 4 (Third Avenue North): 1916 Theme Idea Images**





**Alley 5: Virginia Creeper Theme Design**



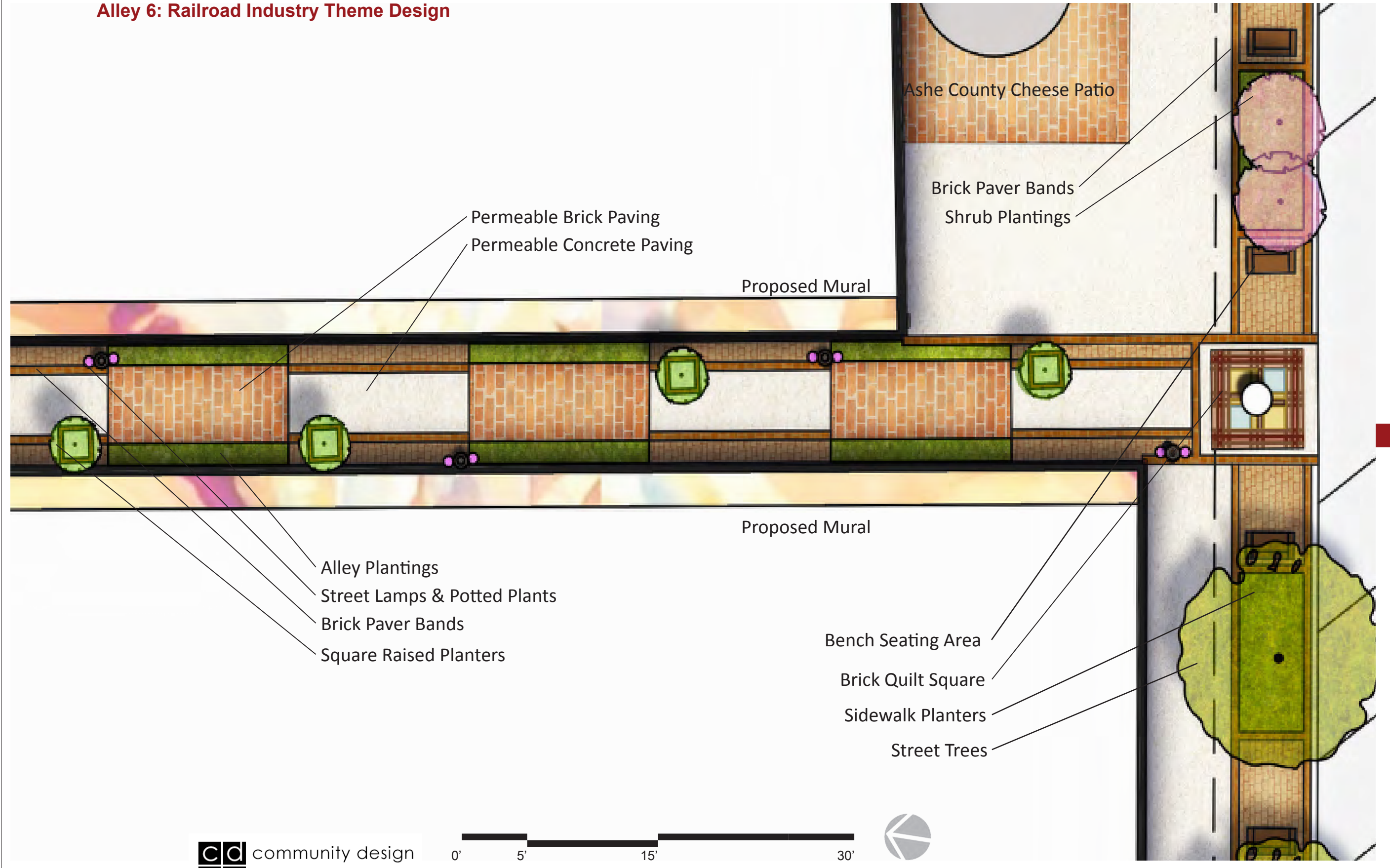


**Alley 5: Virginia Creeper Theme Idea Images**





### Alley 6: Railroad Industry Theme Design



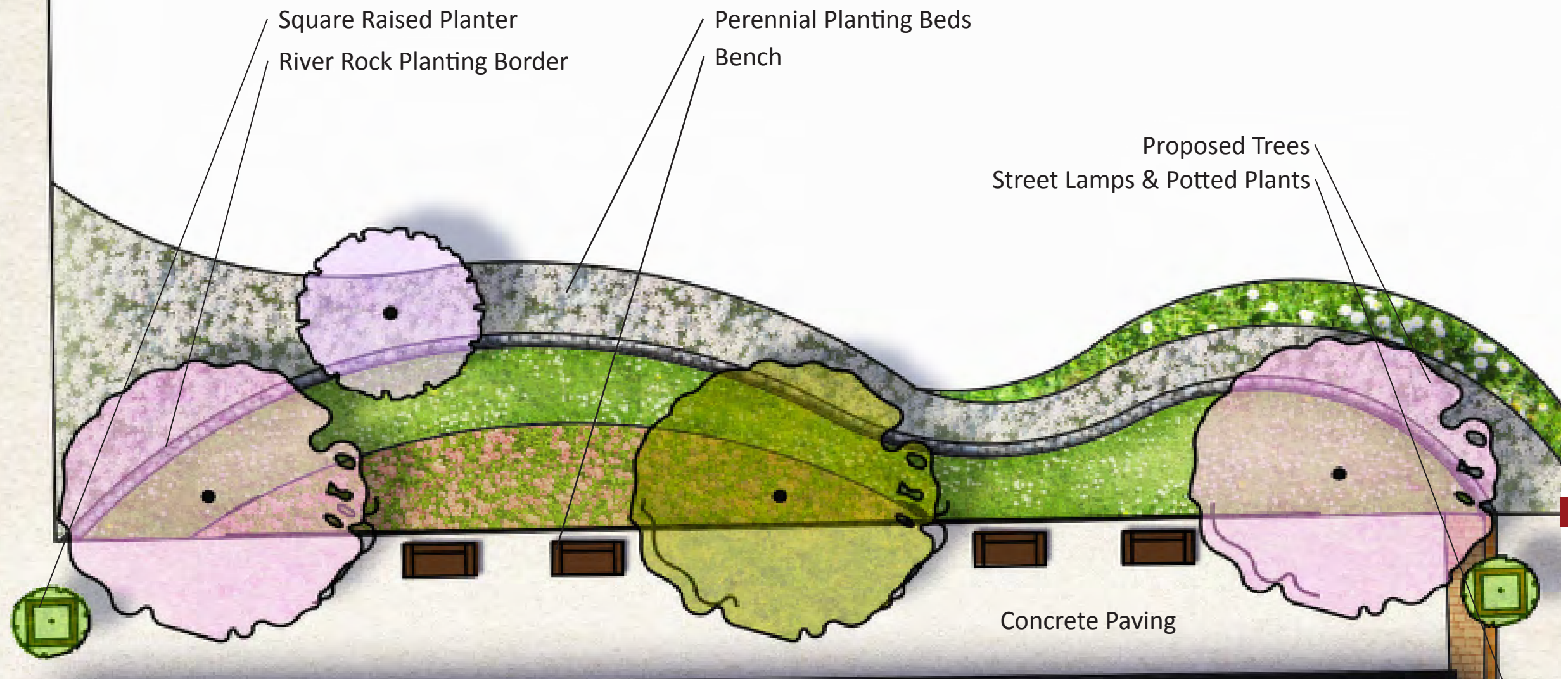


**Alley 6: Railroad Industry Theme Idea Images**





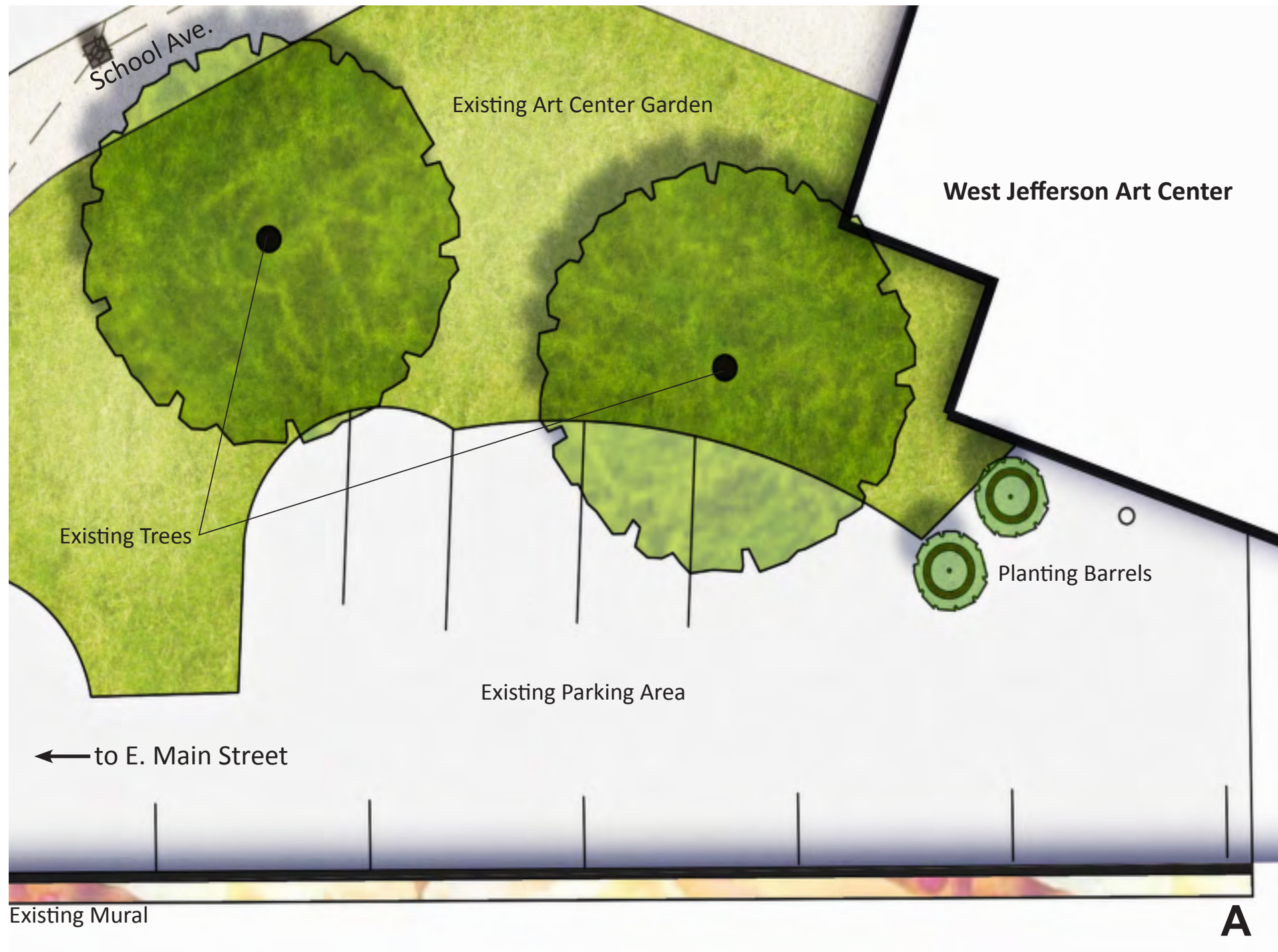
**Alley 6 Continued: Honey Shop Seating Area Design**



Proposed Mural + Shop Entrance



**Alley 7: West Jefferson Landscape Theme Design**



**Existing Mural: Restore?**





**Alley 7: West Jefferson Landscape Theme Idea Images**





## FINAL DESIGN: BACKSTREET

Much like the design for Main Street, it was the goal of the CDAC team to rejuvenate the Backstreet streetscape. This final concept for West Jefferson's Backstreet provides more places for the community and visitors to gather and enjoy the existing farmers market as well as allow for easy, safe, and pleasant walks across town. The incorporation of urban greenery and rain gardens was essential for the creation of functional yet aesthetic design throughout Backstreet. These goals were achieved through creating gathering areas near the farmers market and local church, providing walkways down the entirety of Backstreet, and the removal of unneeded paved surfaces.

One of the main design features include the transformation of a degrading existing road into a pedestrian walk. This walk would be planted with an allée of trees and would act as a connection from the farmers market to the pavilion where concerts are held. In addition, the walk has the ability to become an extension of the existing farmers market that continues to grow. This walkway would be accompanied with the addition of two new gathering and seating areas. These two spaces were created by changing the existing intersection of Backstreet and 2nd street, which was confusing to visitors and unsafe for pedestrians, into a cleaner and more pedestrian friendly intersection. The seating area is located across the street from the farmers market and would allow the vendors, church-goers, and visitors to enjoy sitting in the sun and be near local shops and events that may be happening.

In early community meetings, the CDAC team was informed that a small lot off of Jefferson Avenue was going to be used for the creation of a public restroom and pocket park. This intimate space would provide a much needed utility to the town of West Jefferson and so was brought into the Backstreet design. While the lot's main function was a restroom, the goal was to make it an enjoyable place to sit and rest on a nice day. A description of this design can be found on page 38.

As with Main Street, the use of bump-outs that act as stormwater retention was brought to most intersections along Backstreet. These bump-outs are planted rain gardens that help capture and slow stormwater while still being an aesthetic addition the streetscape of West Jefferson.

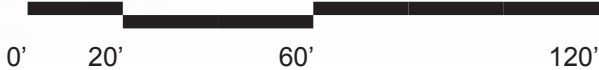
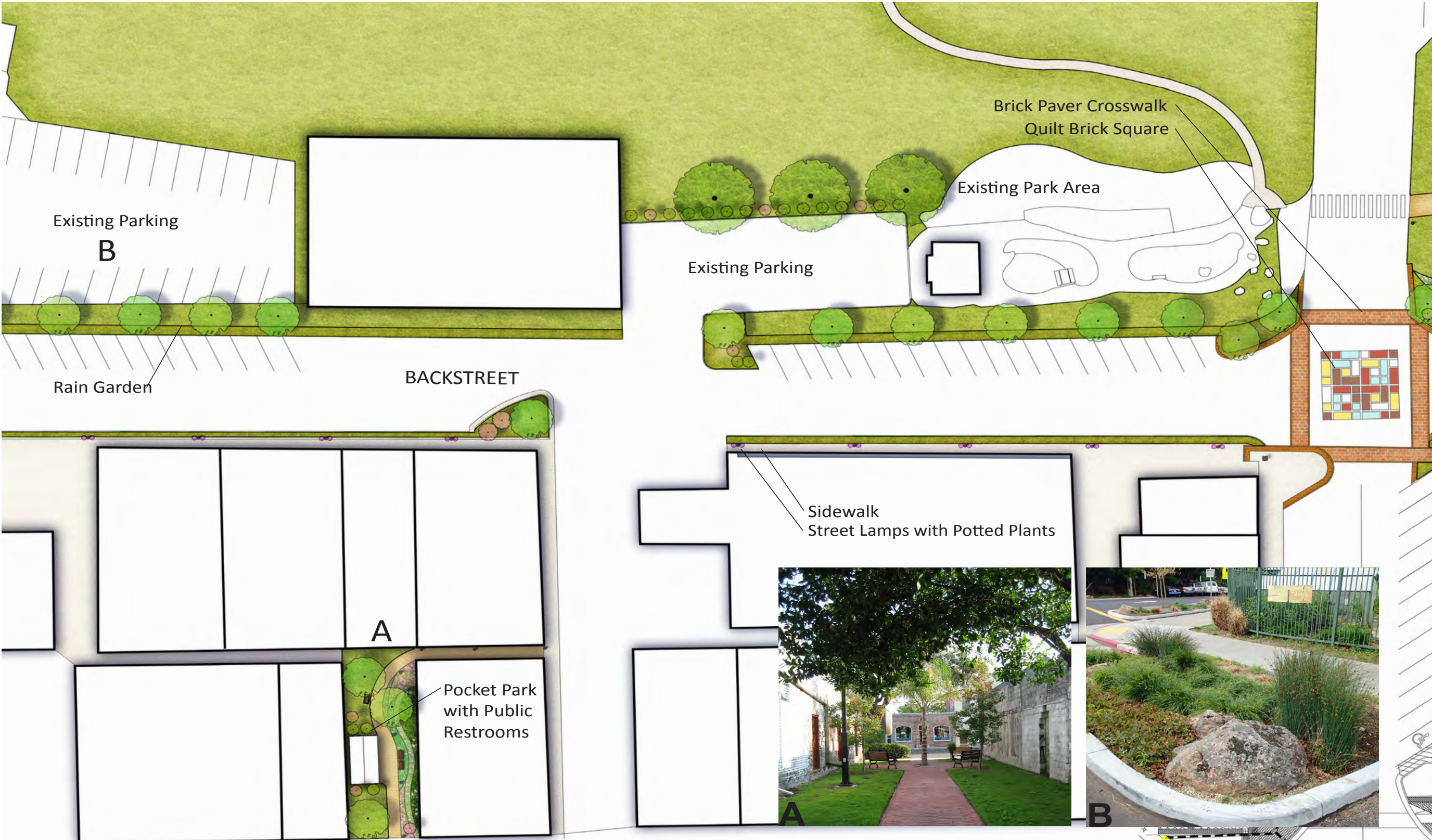
The final design plans for Backstreet are found on pages 35-37. A perspective of the outdoor seating area can be found on page 38.



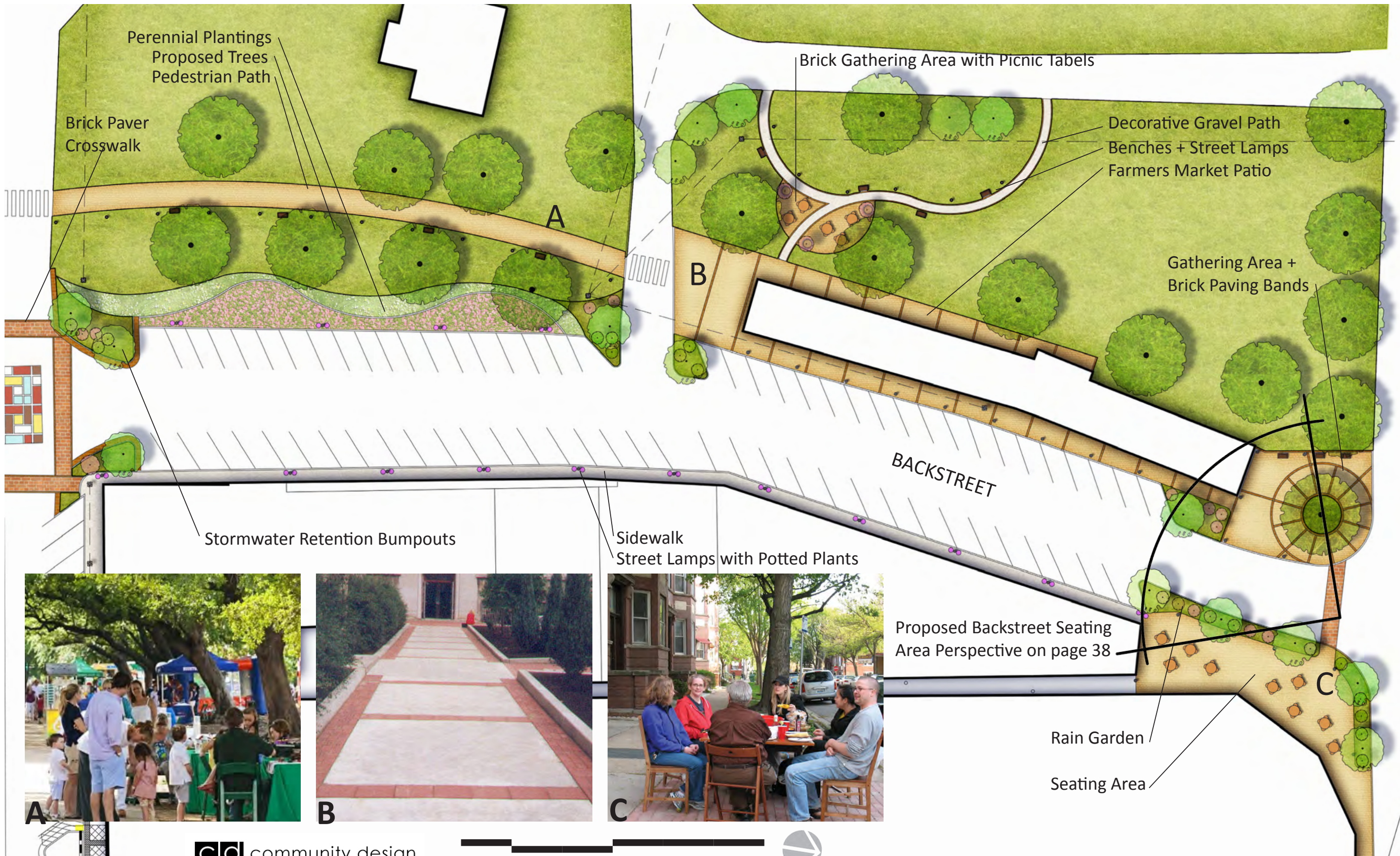




Backstreet Focus Areas











**Proposed Backstreet Seating Area Perspective,  
at the corner of Backstreet and Second Street**



## FINAL DESIGN: BACKSTREET

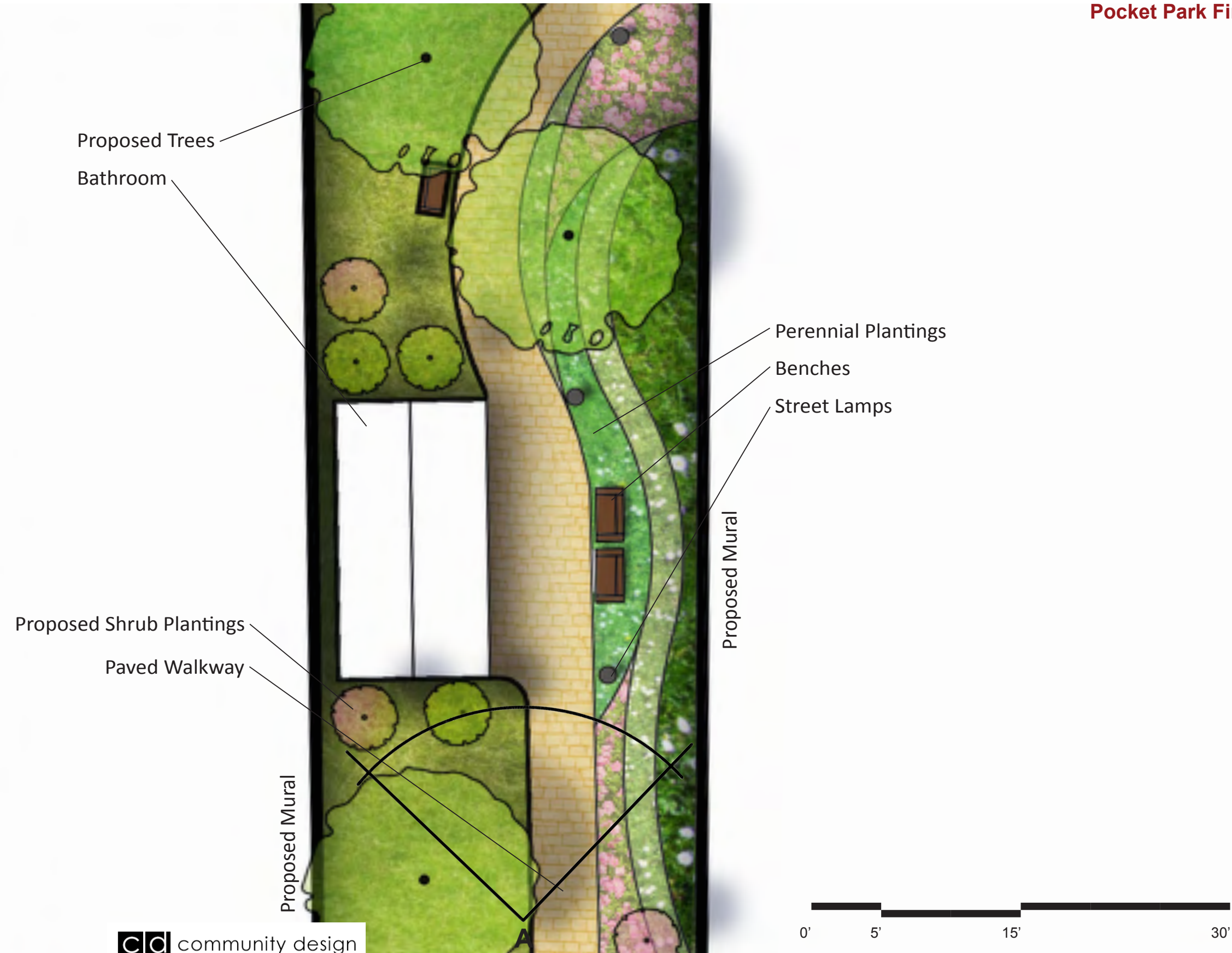
### **Pocket Park**

As mentioned on page 34, this lot along Jefferson Avenue was chosen to become the location for the new public restroom for the town by the community members. The CDAC team wanted to make this location more than just a place to use the restroom and to create a pleasant pocket park for the community and tourists alike. This was accomplished through several simple design decisions, such as adding seating, planting, and artistic interventions.

The vision for this small lot was to provide seating under the shade of planted trees that can look onto the perennial beds planted across from the restroom. These plantings blend into the proposed mural bringing in the liveliness West Jefferson has to offer. The pocket park would be well lit to ensure guests feel safe any time of the day. The pocket park off of Jefferson Avenue would provide a much needed utility, but still become a beautiful addition to the town.

The following pages include the design plans and a perspective for the pocket park.











## FINAL DESIGN: SCHOOL AVENUE STORMWATER GARDEN

With the completion of the School Street parking lot, the West Jefferson community has provided plenty of parking for the expected tourists. Directly adjacent to the parking lot is a small green space that has a direct view of the stream. Unfortunately this area was severely damaged from the incoming stormwater, construction materials during the creation of the parking lot, and lack of care for the site. During the second community meeting, the CDAC team suggested that some of the parking lot be removed in order to create a new first impression of West Jefferson's reach towards environmentally friendly design.

Because the site has so much water entering it during any rainfall, the goal was to make this a storm garden that could be functional, visually appealing and experiential. With a decorative gravel path leading down to seating by the stream, the user could enjoy the calming sounds of running water. The planting of trees, grasses, and shrubs that are tolerant of large amounts of water and provide a visually unique experience. In addition, this garden can aid in the removal of pollutants before entering the stream and reduce erosion with root systems. The garden becomes a first impression for visitors that West Jefferson is making strides towards caring for their town's natural recourses.

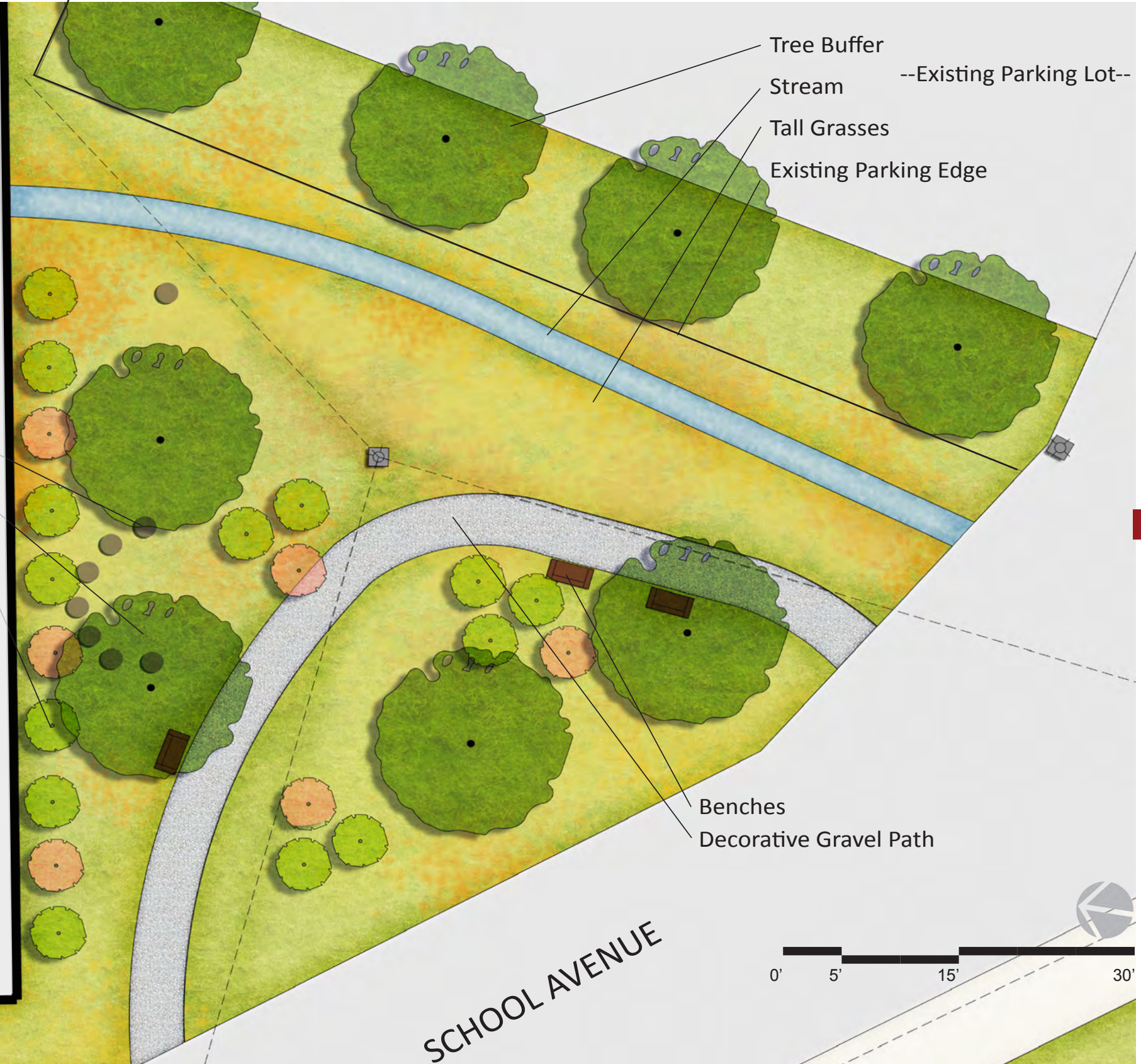
The following page demonstrates the ideas presented.



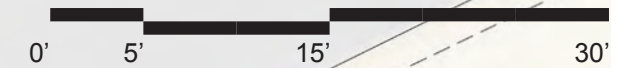
### School Avenue Stormwater Garden Design Concept



Bollards  
Proposed Trees  
Proposed Shrub Plantings



--Badger's Funeral Home Building--





## West Jefferson Streetscape Revitalization Conceptual Designs

### **FINAL DESIGN: GATEWAY, SIGNAGE, AND BRANDING**

As one of the primary entrances into West Jefferson, the CDAC team saw great opportunity in improving the vehicular gateway at the intersection of Second Street and Sixth Avenue. However, at the preliminary community meeting, we learned that the primary gateway is off of highway 221 on Jefferson Avenue. This information resulted in an opportunity to design branding/signage within West Jefferson that can be utilized in multiple locations. The various colored bands of perennials and low rise shrubbery was an attractive option to the community members.

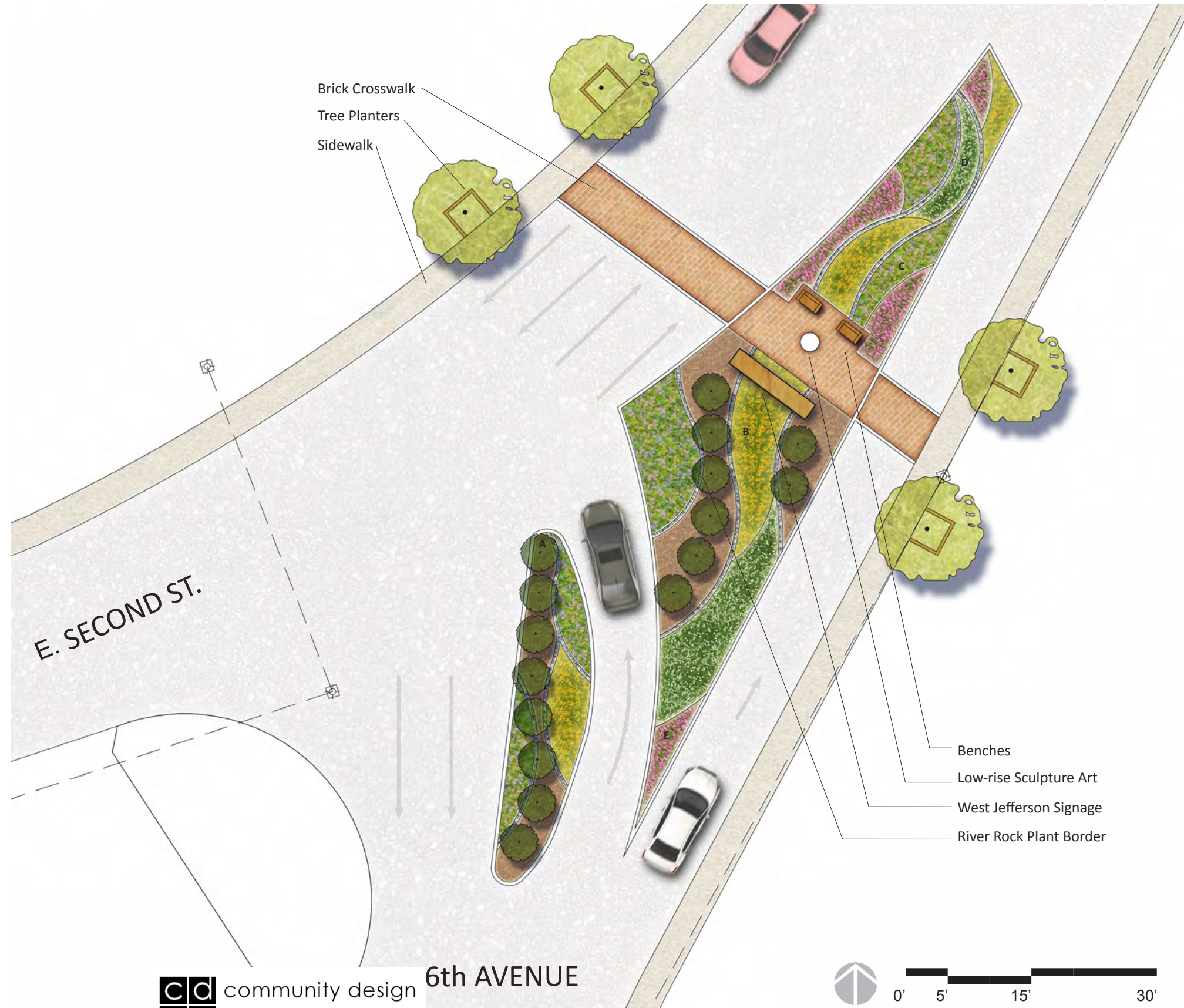
The final concept provides pedestrian accessibility by connecting the planted gateway median to sidewalks on both sides of the street. This is accomplished through a wide, paved brick crosswalk. Linked through a seating area, pedestrians have the option of stopping to rest while crossing the street. Design elements in this central space include proximity to West Jefferson signage, a small low-rise piece of sculpture art, and two wooden benches. Streaks of colored perennials lined with river rock borders encompass the pedestrian with naturalistic scenery. The chosen perennials were selected by bloom period in order to ensure flower color at all times of the year. The river rock also ensures that the planting beds have a defined geometry throughout all seasons.

The CDAC team is also proposing a series of signage options for West Jefferson. The design inspiration for many of these iterations included North Carolina highland mountains, spruce trees, quilt squares, and the cheese cows. As requested, concepts for the physical signs are a traditional form, however multiple options for the material have been provided. The team also focused on ideas for a town logo. It is hoped that West Jefferson can build upon our ideas in successfully creating a branding identity for their community. There is additional opportunity for these concepts to become incorporated into wayfinding signage throughout the town.

These final concepts can be found on the following pages.



Gateway Final Design Concept and Planting Palette



A: Inkberry Bush



B: Black-Eyed Susans & Daffodil



C: Geranium 'Rozanne' & Darwin Tulip



D: Penstemon 'Husker Red'



E: Sedum 'Autumn Joy' & Crocus





Sign Option #1



Sign Option #2

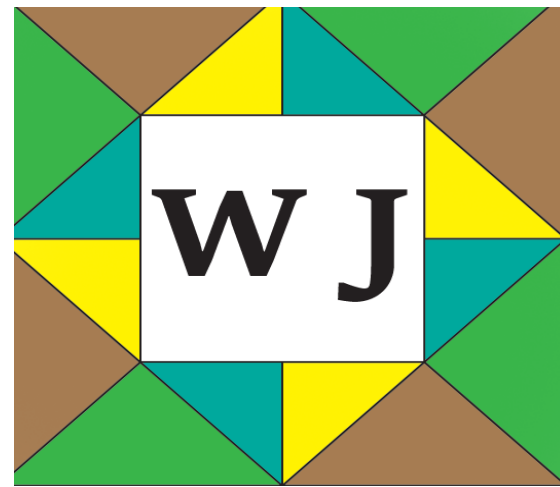


Sign Option #3

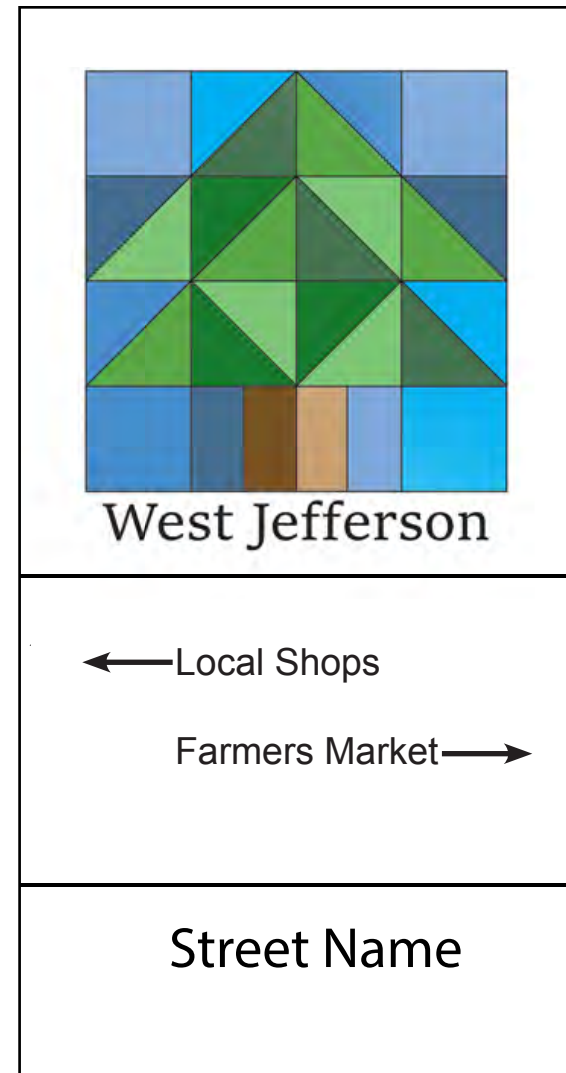


Sign Option #4

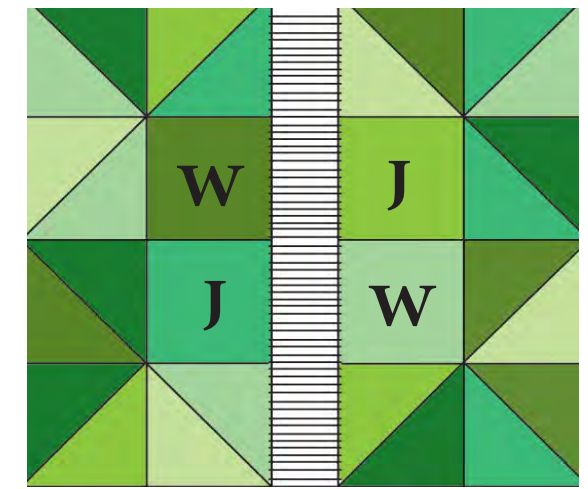




Branding Option #1



Wayfinding/Branding option #2



Branding Option #3



# PART 2



## West Jefferson Streetscape Revitalization Conceptual Designs

### SITE INVENTORY AND ANALYSIS

During the first site visit to West Jefferson, the CDAC team was introduced to the town through a walking tour. It was during this time the team could observe and study existing streetscape characteristics and conditions, identify design focus areas, measure streetscape elements, and take soil samples.

Main Street, Backstreet, and the Gateway served as primary focus areas. Secondary focus areas included the grass field behind the farmers market, school parking lot/stream, Jefferson Avenue pocket park, as well as an empty private property on Main Street.



Location of primary and secondary design focus areas

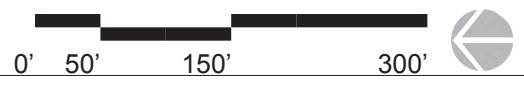
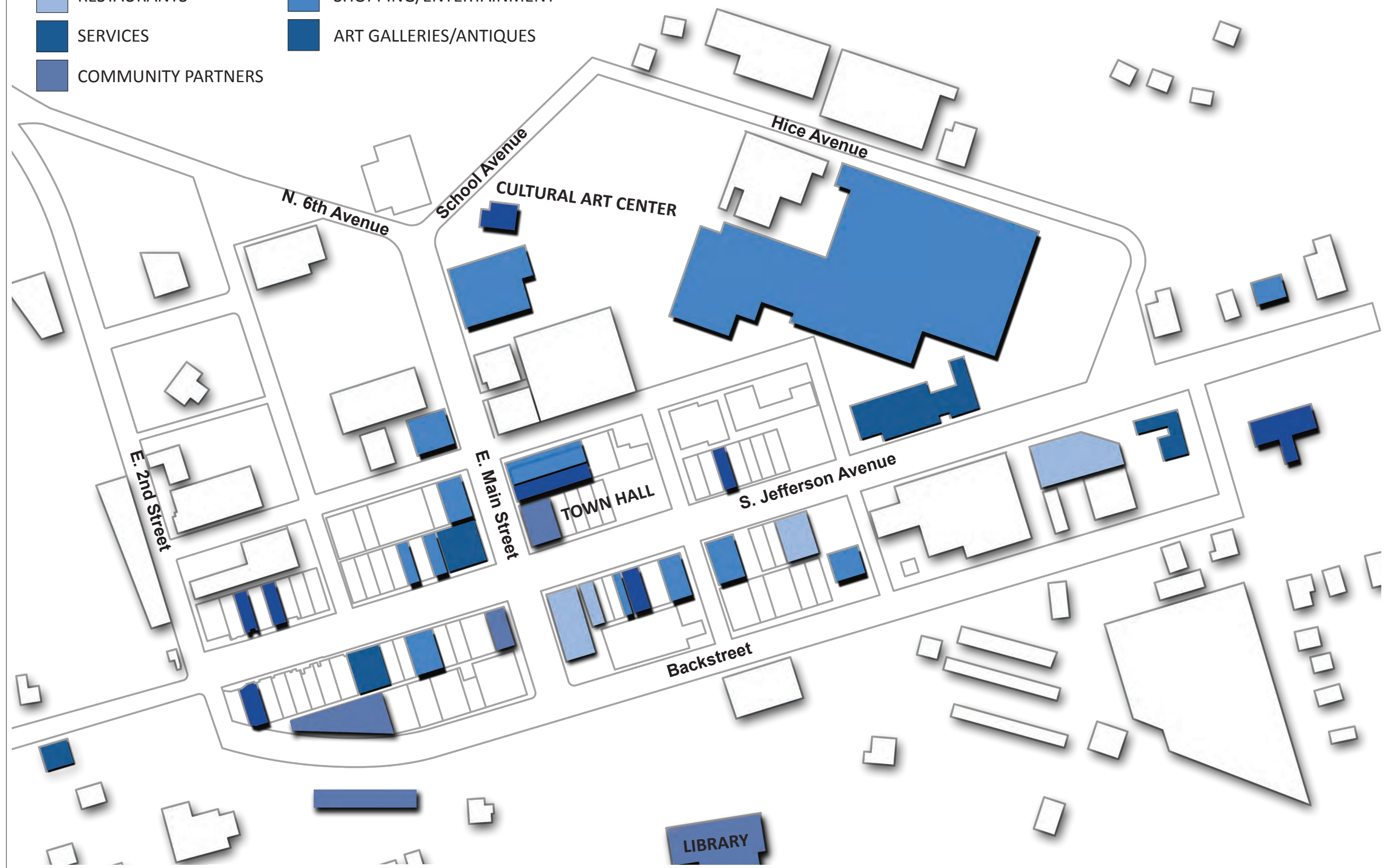
Through the information gathered on the walking tour, the CDAC team completed an inventory and site analysis of the project area. This phase started with an inventory of all murals, public art, existing utilities, or other streetscape elements. From the inventory, the team was better able to understand the culture of West Jefferson. Through the site visit inventory measurements, the CDAC team was able to create a base map that accurately represented the locations of these elements. For the analysis, the team focused efforts on understanding the opportunities and constraints of each major area, including general streetscape connectivity, traffic patterns, and overall physical conditions. In particular, the team largely focused on slope and hydrologic flow to determine which streetscapes are suffering from sheet flow. From this analysis the team was able to synthesize which areas of focus would benefit most from stormwater management practices.

Inventory and site analysis boards can be found on the following pages.



KEY

- RESTAURANTS
- SHOPPING/ENTERTAINMENT
- SERVICES
- ART GALLERIES/ANTIQUES
- COMMUNITY PARTNERS





**Inventory:  
Opportunities for  
Improvement**

Abundance of Pavement



Lack of Pedestrian Accessibility



Degraded Open Space

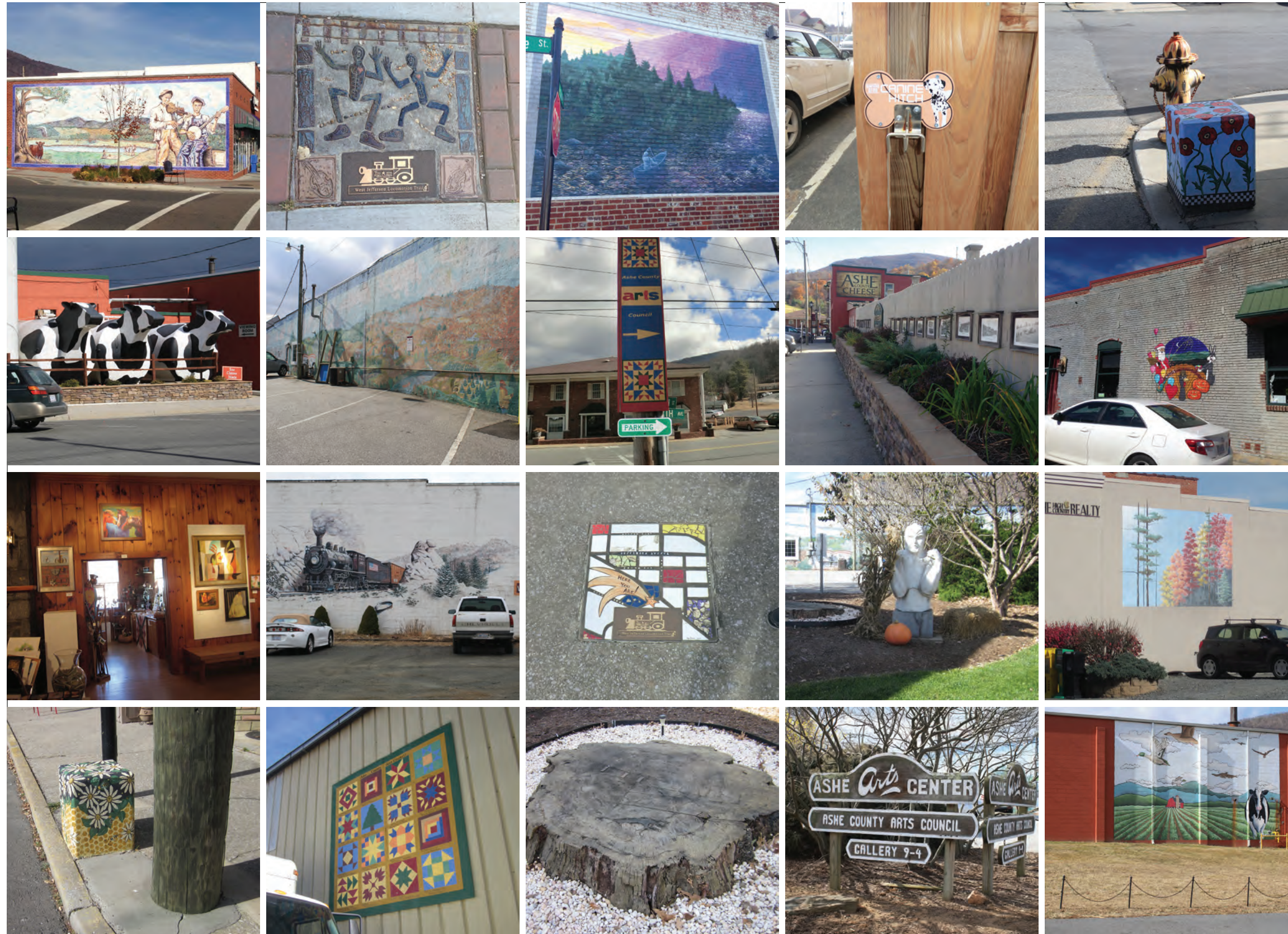


Poor Alley Conditions





**Inventory:**  
**Place Assets and Opportunities**





Inventory:  
Community  
Character



QUILTING



MOUNTAIN LANDSCAPE



CHRISTMAS IN JULY



SCOTCH/IRISH HERITAGE



THE RURAL AESTHETIC



ANTIQUES



BLUEGRASS



OLD RAILROADS



BREWERIES



NORTH CAROLINA HIGH COUNTRY



SPIRIT OF FOLK MUSIC



NORTH CAROLINA BBQ



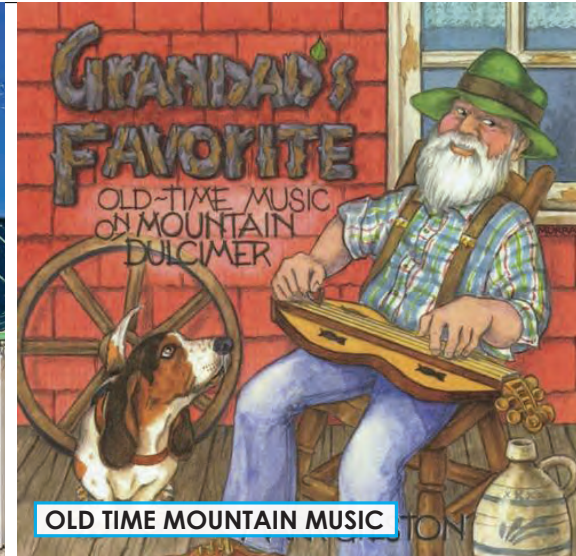
Inventory:  
Community  
Character



CHRISTMAS TREES



FARMERS MARKET



OLD TIME MOUNTAIN MUSIC



AMERICAN PRIDE



THE RURAL AESTHETIC



POTTERY



ART & CULTURE



STREET FESTIVALS



MOUNTAIN VIEWS



TRADITIONAL MUSIC



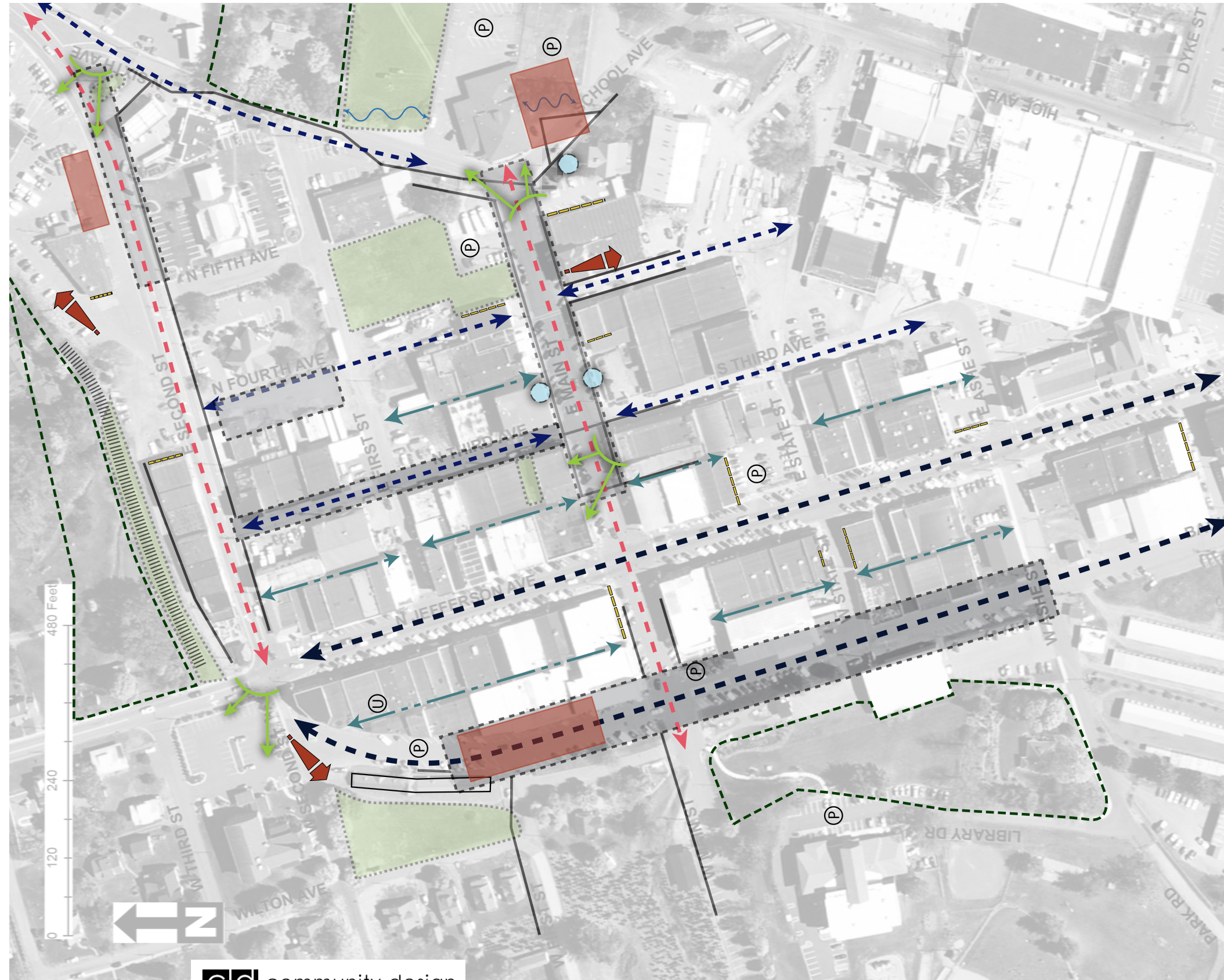
COMMUNITY SPIRIT



NATURE & RECREATION



Site Analysis



**A STREETS**  
 Main Commercial/Community Activity  
 Known as "Event Streets"  
 Street Width Larger/More Vehicular Activity

**B STREETS**  
 Commercial Activity  
 Inner "Main" Streets/30' Width  
 Opportunity for More Pedestrian Accessibility

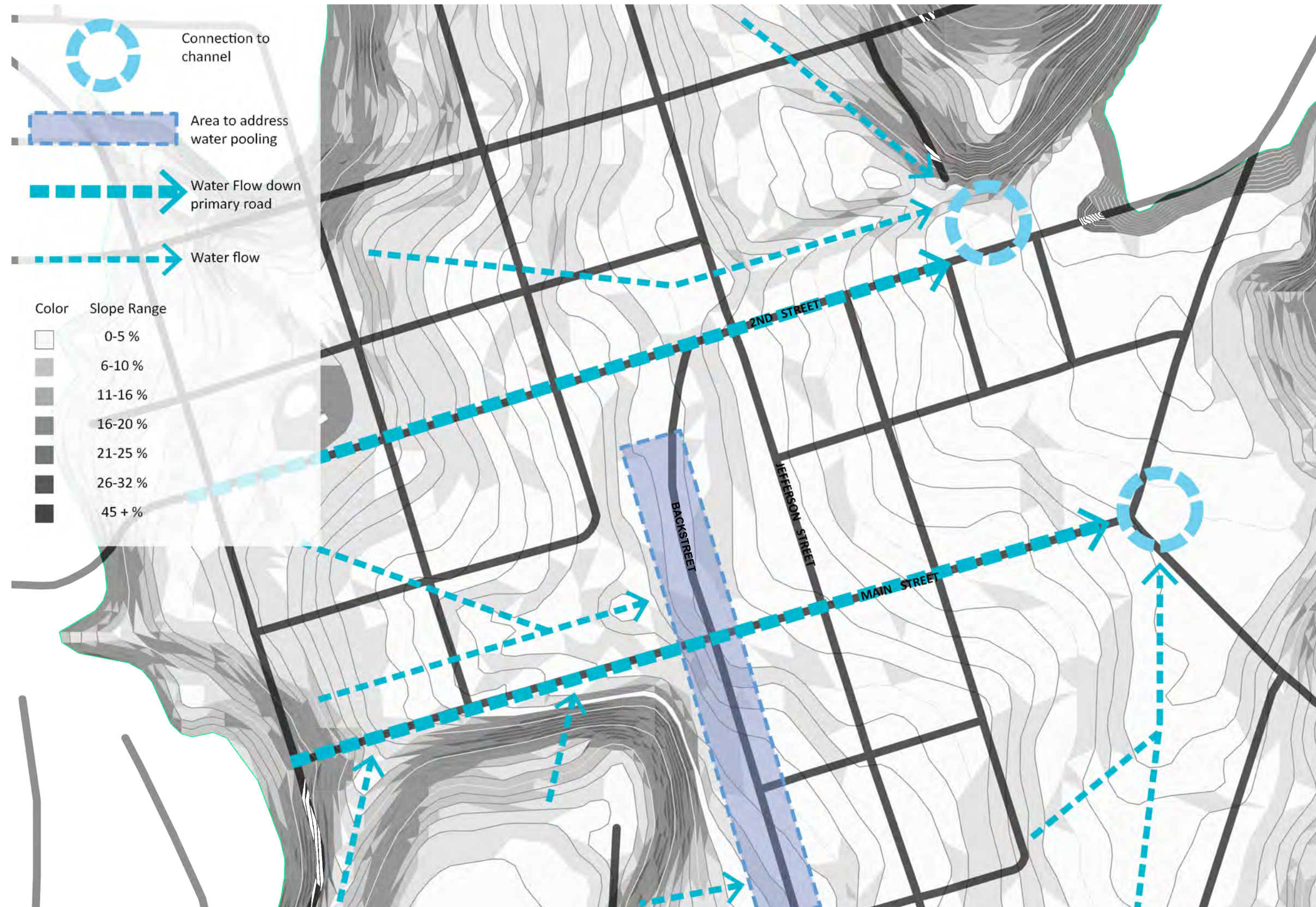
**C STREETS**  
 Side/Back Streets  
 Secondary Pedestrian/Vehicular Access  
 Opportunity for Street Improvements

**INVENTORY AND ANALYSIS**

	Areas of water gathering where storm water remediation options should be considered		PUBLIC ART
	Poor road conditions: Either because of speeding traffic, degrading street conditions or lack of sidewalks, these areas are in most need of urban greenery		PARKING
	NATURAL AREA		MANY UTILITIES
	OPEN LAWN		VIEWSHED
	FARMERS MARKET		RAILROAD
	ALLEY		POWERLINES
	MURALS		POOR STREET
	STREAM		



Site Analysis:  
Hydrology Analysis





## West Jefferson Streetscape Revitalization Conceptual Designs

### PRELIMINARY CONCEPTS

Each student developed one design concept for the Main Street, Backstreet, and gateway streetscapes utilizing different themes. The first concept focused on a “stormwater management theme” while the other was based on a “community arts theme.” This resulted in two very different preliminary concepts, each focusing on different aspects of design interests within West Jefferson.

The following pages discuss the preliminary design concepts for each area in more detail.



CDAC team members Ashlee Wells (left) and Payton Villescas (right) presenting preliminary concepts at initial community meeting.



## PRELIMINARY CONCEPTS

### **Concept 1: The Stormwater Theme**

West Jefferson is full of culture and life but much of its streetscape is in need of repair because of damage from the intense water flow during storms. To address this issue, Concept 1 was geared towards collecting and treating the stormwater through a series of bump-outs, rain gardens, and the use of pervious materials wherever possible. The treatment of stormwater is vital to the longevity of West Jefferson, but it was also treated as an opportunity to educate and attractively revitalize the streetscape.

The following drawings convey the preliminary designs for Concept 1.



**Concept 1: The Stormwater Theme, Backstreet**





Concept 1: The Stormwater Theme, Backstreet



A Pedestrian Gathering/Event Space



B Brick Band Pavers



C Outdoor Seating for Local Shops



Concept 1: The Stormwater Theme, Backstreet

Rain Garden





**Concept 1: The Stormwater Theme, Main Street**





**Concept 1: The Stormwater Theme, Main Street**



Rain Gardens





**Concept 1: The Stormwater Theme, Main Street**



**A:**  
Open Multi-Purpose Field



**B:**  
Covered Picnic Area



**C:**  
Brick Paver Detail



## PRELIMINARY CONCEPTS

### **Concept 2: The Community Theme**

The community theme focused on highlighting the artistic culture of West Jefferson through streetscape elements. This was done by incorporating a lot of detail through various material choices, colorful urban greenery, and art-based site decorations/furnishings. This theme introduced many artistic elements found within case studies, such as interactive art, murals, 3d bike racks, and colored pavement. Within the secondary focus areas, Concept 2 incorporated more community driven social areas such as a dog park for Main Street and a community garden behind the farmers market. The vision for this concept was to design an aesthetic streetscape that promoted social interaction among its inhabitants.

The following drawings convey the preliminary design for Concept 2.

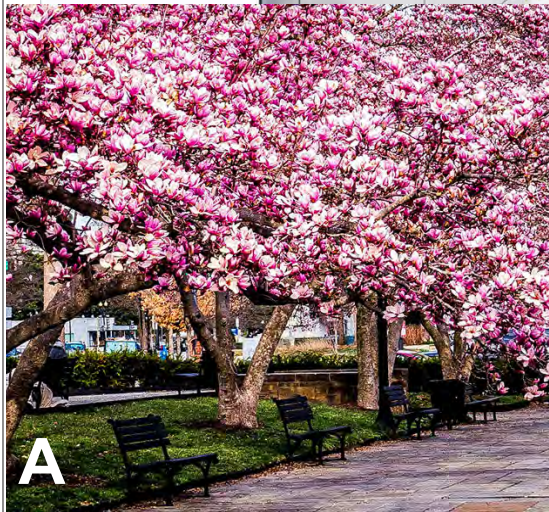


**Concept 2: The Community Theme, Backstreet**



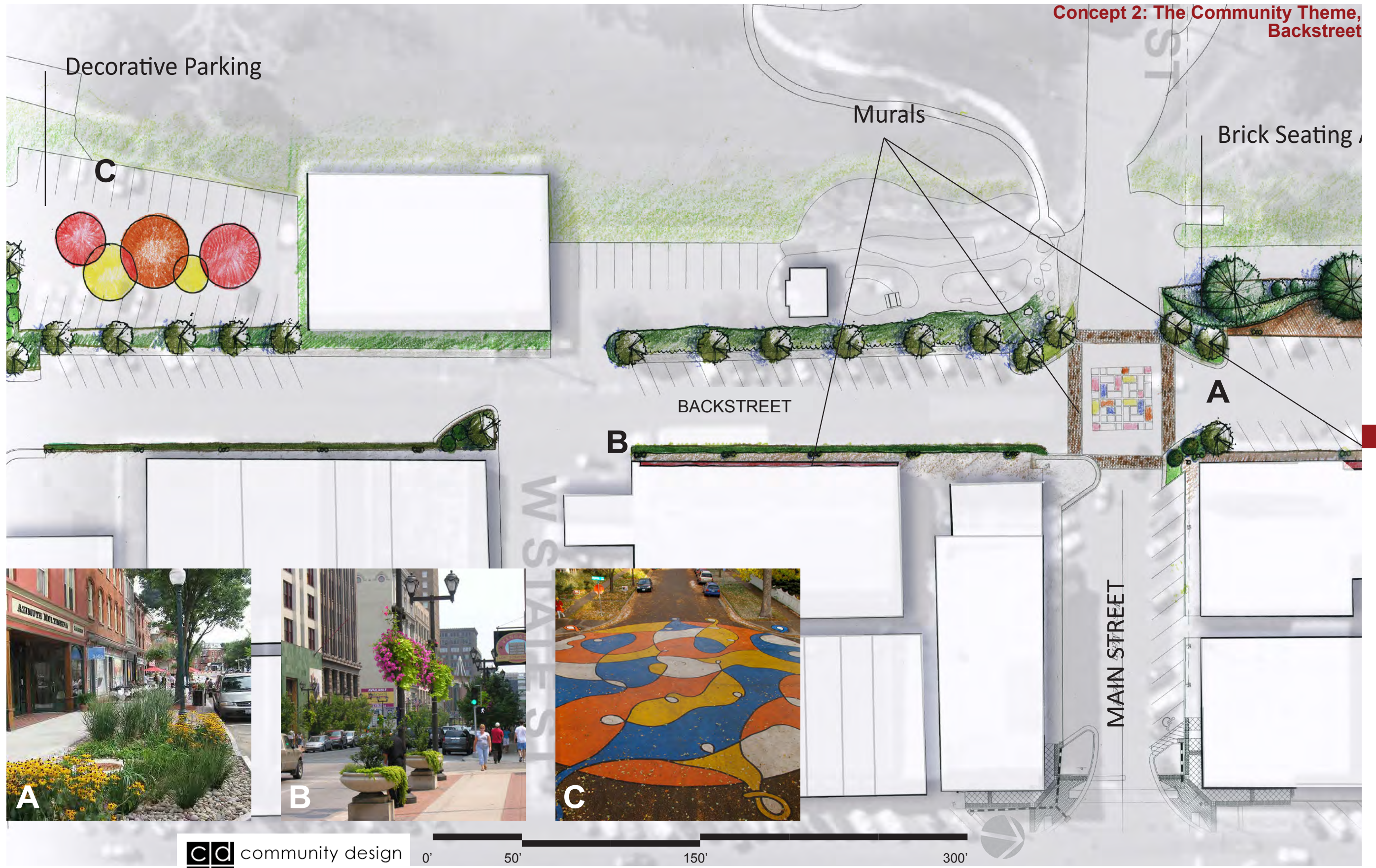


Concept 2: The Community Theme, Backstreet





Concept 2: The Community Theme, Backstreet





**Concept 2: The Community Theme,  
Main Street**



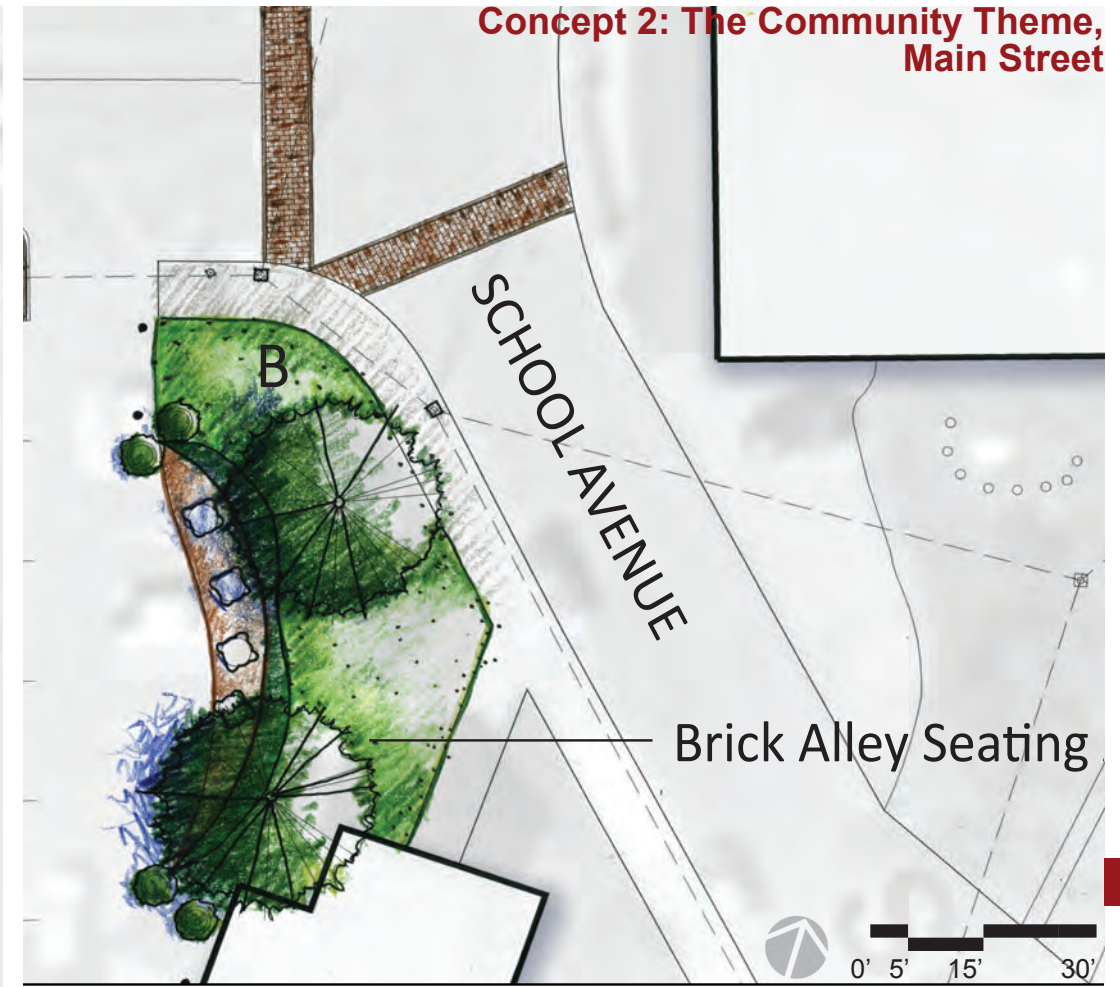
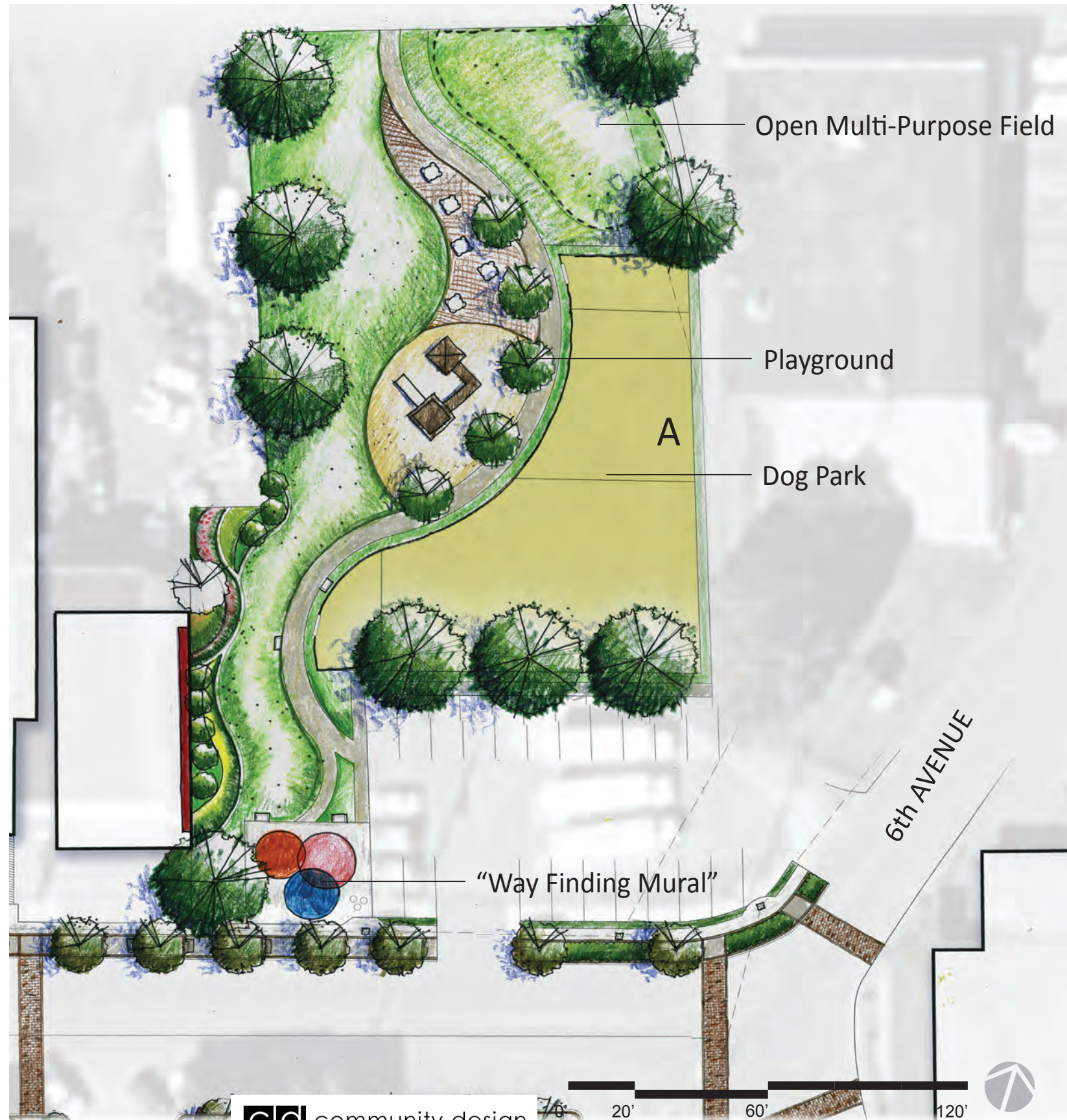


Concept 2: The Community Theme, Main Street





Concept 2: The Community Theme, Main Street





## West Jefferson Streetscape Revitalization Conceptual Designs

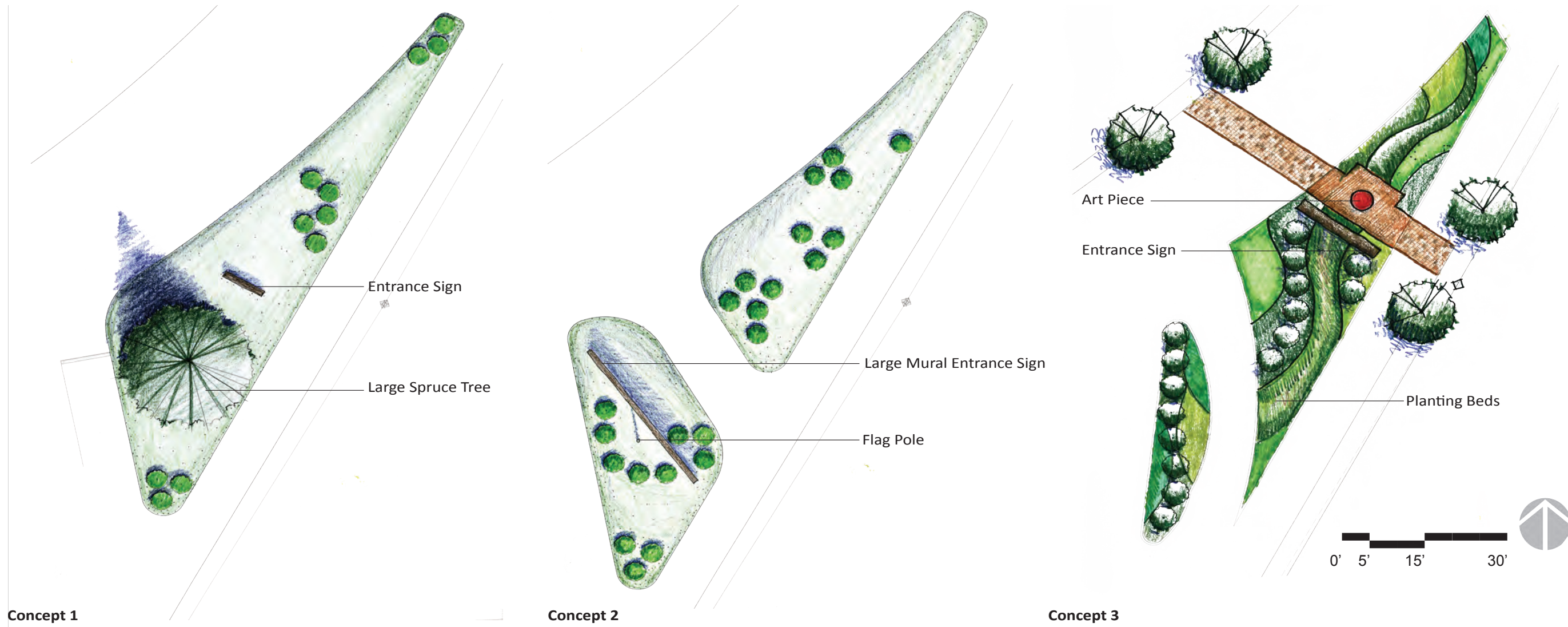
### **PRELIMINARY GATEWAY AND SIGNAGE CONCEPTS**

As the CDAC team entered West Jefferson from Second Street, a large amount of paving was observed. This area had the opportunity to become an attractive entrance into the town. For the preliminary designs of the gateway, the team tried a few different approaches that incorporated some of the artistic and cultural qualities West Jefferson has to offer. The concepts aimed to slow down traffic and provide the opportunity to cross this busy street. In all of the preliminary concepts the incorporation of a distinct sign to welcome tourists was suggested and well-liked by the community members.

The following drawings convey the preliminary designs for the gateway.



Preliminary Gateway and Signage Concepts





## CONCLUSION

In collaboration with stakeholders and community input, the CDAC team worked to create concepts that will help improve many qualities of the West Jefferson streetscape. Using the town's love for art, community, and music, the final concept captures the spirit of West Jefferson to help bring more tourists to their growing town. The incorporation of stormwater management and artistic elements into the streetscape brings new life into the streets and alleyways. The focus areas decided upon through community meetings include: Main Street, Backstreet, a new restroom/pocket park on Jefferson Avenue, and finally, an entrance into the town through 2nd Street.

The Main Street proposal brings a promenade to the town of West Jefferson with a new walkway and planter seating along the shop fronts. At some of the streets intersections rain garden bump-outs were installed to slow and treat water as well as calm traffic. The most unique design quality the new Main Street would have is complete use of their alleyways for pedestrian use. With a blend of gravel and pavers, there is also a reduction of stormwater flowing into the streets.

The Backstreet redesign aimed to connect all of the existing entertainment (the farmers market, concert pavilion, library, and proposed restroom) with a pedestrian friendly walk. This area also incorporated rain gardens to capture water and slow traffic. This additionally brought urban greenery to a currently industrial feeling street. By providing safer and cleaner intersections more space is allocated to provide gathering and seating spaces that would allow more people to enjoy the farmers market and festivals that take place.

In close proximity to Backstreet is the proposed pocket park with a public restroom for tourists. The goal was to create a location to stop and rest, as the perennials and murals suggest. The small lot becomes a wonderful moment to stop and sit under the shade of a tree. The final gateway concept followed a similar idea to the pocket park by bringing in perennial planting, a place to rest, and the artistic culture West Jefferson has cultivated.

The final concept is a linkage across the town so the pedestrian, local or visitor, can feel safe enjoying everything the town has to offer. Rather than a series of locations, the final concept is a continuous experience through West Jefferson that brings its small time charm to life through highland mountain culture, an expanding artistic community, and the ecologic improvement of West Jefferson.



# PART 3



## APPENDIX

### Preliminary Community Response

At the initial design presentation, the community expressed a desire to combine elements of both design concepts into a final design. The feedback was as follows

#### Backstreet:

- They like Concept 1 Seating Area
- Larger Trees with band along Farmers Market
- Smaller trees where could be removed
- Bumpouts for traffic calming
- Instead of “dog park” think about “dog areas”
- Savanah “doggy bags”
- They like Concept 1’s continuation of the market area
- Likes the idea of a brick pattern for farmers market vs. brick dedication squares
- Consider backing of vendors with farmers market
- Consider storm water retention on right side of Farmers Market
- They like natural area behind Farmers Market better than community garden
- Maybe for back space having a pavilion, lawn, trees, do not include parking in concept
- Although the church has mentioned putting parking \*will be discussed
- Hardscape to expand for vendors
- They like the artistic quilt square crosswalks, bumpouts + sidewalks
- They like artwalk in alleys vs. parking
- Would like wayfinding (beginning of alley) & history (interior) murals

#### Main St:

- They want the alleys to be for “pedestrian traffic”
- They like narrowing of street
- Wayfinding
- No plaza behind art area
- Riparian Improvement
- Consider parking + connectivity
- Would want a “alley hierarchy” from Main St to Jefferson Avenue
- Wayfinding into the alleys
- Consider “live wall” maybe grown like a quilt
- Permeability in alleys is important
- Pay attention to utilities
- Concept 1 for park
- Concept 2 for streets with the retention
- Would like to see signage + wayfinding
- Look at the parking by the library for next time
- Also consider land behind the library, for dog park or for connection
- They want something behind the parking
- “Dog friendly art”

#### Gateway:

- True “gateway” is where route 221 & 163 meet, by the McDonalds on Jefferson Avenue
- They like Concept 2 and the idea of putting sidewalks
- Evergreen sign example/uniform
- Consider the “coolest corner” of West Jefferson
- Maybe put 3d bike racks?
- Sculptural/Artistic consistency with the arts in WJ







**APPENDIX**

**Soil Sample Results**

Soil Samples Correspond with Map on Previous Page.  
See Following Page for an Explanation of Soil Tests.

Sample ID	pH	BpH	P ppm	K ppm	Ca ppm	Mg ppm	Zn ppm	Mn ppm
WJ1	6.8	6.51	21	83	1685	391	60	23.5
WJ2	5.5	6.08	9	109	868	173	25.6	8.8
WJ3	5.82	6.23	10	95	828	162	9.3	12.5
WJ4	6.46	6.4	11	165	1272	225	99.9	25
WJ5	6.99	N/A	17	66	1032	205	31.5	25.6
WJ6	6.51	6.4	25	80	726	181	11.2	9.3
WJ7	7.08	N/A	15	55	817	186	10.5	20.8
WJ8	6.14	6.34	6	57	517	169	4.2	9.4

Sample ID	Cu ppm	Fe ppm	B ppm	mg/100g	% Acidity	% Base Sat	% Ca Sat	% Mg Sat	% K Sat
WJ1	3.9	17.9	0.6	11.9	0.3	99.7	70.8	27.1	1.8
WJ2	2.4	16.5	0.4	7.9	24	76	54.6	17.9	3.5
WJ3	3.8	25.3	0.3	6.7	15	85	61.5	19.9	3.6
WJ4	90.6	31.4	0.3	8.7	0.7	99.3	73.1	21.3	4.8
WJ5	13.1	48.2	0.5	7	N/A	100	73.5	24.1	2.4
WJ6	3	22	0.3	5.4	1.1	98.9	67.4	27.7	3.8
WJ7	5.6	36.3	0.4	5.8	N/A	100	70.9	26.6	2.4
WJ8	1.8	22.6	0.2	4.5	8	92	57.7	31.1	3.2

Sample ID	P Rating	K Rating	Ca Rating	Mg Rating
WJ1	H-	M+	VH	VH
WJ2	M-	H	H	VH
WJ3	M-	H-	H-	VH
WJ4	M	VH	VH	VH
WJ5	M+	M	H+	VH
WJ6	H-	M+	H-	VH
WJ7	M	M	H-	VH
WJ8	L+	M	M	VH



## Virginia Cooperative Extension

PUBLICATION 452-701

## Explanation of Soil Tests

*Rory Maguire, Extension Nutrient Management Specialist, Virginia Tech**Steve Heckendorn, Soil Test Laboratory Manager, Virginia Tech*

The accompanying Soil Test Report (and supplemental Soil Test Notes, when provided) will help you assess your plant's need for fertilizer and lime.

The "History of Sampled Area" section restates the information you filled in on the Soil Sample Information Sheet you submitted with the soil sample.

The "Lab Test Results" section shows the relative availability of nutrients numerically and if appropriate, as a rating. The rating may be interpreted as follows: L=Low, M=Medium, H=High, VH=Very High, EH=Excessively High (soluble salt test only), DEF=Deficient, or SUFF=Sufficient, and sometimes a "+" or "-" When soils test Low, plants almost always respond to fertilizer. When soils test Medium, plants sometimes respond to fertilizer and a moderate amount of fertilizer is typically recommended to maintain fertility. When soils test High to Very High, plants usually do not respond to fertilizer. If there is no rating for a nutrient, the adequacy of that nutrient in the soil for the plant you specified has not been determined.

The following is an explanation of the symbols and abbreviation used in the report:

**Report Symbols and Abbreviations**

P = phosphorus	K = potassium
Ca = calcium	Mg = magnesium
Zn = zinc	Mn = manganese
Cu = copper	Fe = iron
B = boron	SS = soluble salts
lb/A = pounds per acre	ppm = parts per million
meq = milliequivalent	g = gram
pH = acidity	Sat. = saturation
N = nitrogen	P <sub>2</sub> O <sub>5</sub> = phosphate
K <sub>2</sub> O = potash	% = percent
Est-CEC = estimated cation exchange capacity	
AG = agricultural limestone (dolomitic or calcitic)	

**Fertilizer Recommendation**

The fertilizer recommendations may be used for the same crop for two to three years. After this time, it is advisable to retest the soil to determine if significant changes have occurred in nutrient levels. When the soil tests Very High for phosphorus or potassium and no fertilizer for these nutrients is recommended, you should retest the following year to determine if fertilizer will be needed. Due to the variability associated with sampling, fertilizer application rates may be varied by a plus or minus 10 percent.

No soil test is performed for **nitrogen** because this element is too mobile in the soil for laboratory results to be useful. Nitrogen fertilizer recommendations are based on the crop/plant to be grown, the previous crop, and when applicable, the soil's yield potential. Comments on the report and other enclosed Notes, if any, will have further information regarding nitrogen.

**Lime Recommendation**

If needed, a lime recommendation is given to neutralize soil acidity and should last two to three years. After that time, you should have the soil retested. The measured soil test levels of calcium and magnesium are used to determine the appropriate type of limestone to apply. If neither dolomitic nor calcitic lime is mentioned, or "Ag" type or "agricultural" limestone is stated on the report, then it does not matter which type is used. When no information on the Soil Sample Information Sheet was provided regarding the last lime application, the lab assumed you have not applied lime in the past 18 months. If this is not correct, contact your Extension agent for advice on adjusting the lime recommendation to take into consideration recent lime applications. Do not over lime! Too much lime can be as harmful as too little. For best results, apply lime, when possible, several months ahead of the crop/plant to be planted to allow time for more complete soil reaction.



## APPENDIX

**Methods and Meanings**

For more detail on the lab procedures used, visit [www.soiltest.vt.edu](http://www.soiltest.vt.edu) and click on “Laboratory Procedures.”

**Soil pH** (or soil reaction) measures the “active” acidity in the soil’s water (or hydrogen ion activity in the soil solution), which affects the availability of nutrients to plants. It is determined on a mixed suspension of 1:1, volume to volume ratio of soil material to distilled water.

Virginia soils naturally become acidic, and limestone periodically needs to be applied to neutralize some of this acidity. A slightly acid soil is where the majority of nutrients become the most available to plants, and where soil organisms that decompose organic matter and contribute to the “overall health” of soils are the most active. When a soil is strongly acidic (< 5.0-5.5), many herbicides lose effectiveness and plant growth is limited by aluminum toxicity. When soils are over-limed and become alkaline (> 7.0), micronutrients, such as manganese and zinc, become less available to plants.

For most agronomic crops and landscaping plants, lime recommendations are provided to raise the soil pH to a slightly acid level of between 5.8 and 6.8. Blueberries and acid-loving ornamentals generally prefer a 4.5 to 5.5 pH, and an application of liming material is suggested when the soil pH drops below 5.0. For the majority of other plants, lime may be suggested before the pH gets below 6.0. This is to keep the soil pH from dropping below the ideal range, since lime is slow to react and affects only a fraction of an inch of soil per year when the lime is not incorporated into the soil. If the soil pH is above the plant’s target pH, then no lime is recommended. If the pH is well above the ideal range, then sometimes an application of sulfur is recommended to help lower the pH faster; however, most of the time, one can just let the soil pH drop on its own.

A Mehlich buffer solution is used to determine the **Buffer Index** to provide an indication of the soil’s total (active + reserve) acidity and ability to resist a change in pH. This buffer measurement is the major factor in determining the amount of lime to apply. The Buffer Index starts at 6.60 and goes lower as the soil’s total acidity increases and more lime is needed to raise the soil pH. A sandy soil and a clayey soil can have the same soil pH; however, the clayey soil will have greater reserve acidity (and a lower Buffer Index) as compared to the sandy soil, and the clayey soil will require a greater quantity of lime to be applied in order to raise the soil pH the same amount as the sandy soil. A reported

Buffer Index of “N/A” means that it was not measured since the soil (water) pH was either neutral or alkaline and not acidic (soil pH  $\geq$  7.0) and therefore requires no lime.

**Nutrients** that are available for plant uptake are extracted from the soil with a Mehlich 1 solution using a 1:5 vol:vol soil to extractant ratio, and are then analyzed on an ICP-AES instrument. An extractable Mehlich 1 level of phosphorus from 12 to 35 pounds per acre (lb/A) is rated as medium or optimum. A medium level of potassium is from 76 to 175 lb/A. Medium levels of calcium and magnesium are 721 to 1440 and 73 to 144 lb/A, respectively. Calcium and magnesium are normally added to the soil through the application of limestone. It is rare for very high fertility levels of P, K, Ca and Mg to cause a reduction in crop yield or plant growth. Levels of micronutrients (Zn, Mn, Cu, Fe and B) are typically present in the soil at adequate levels for plants if the soil pH is in its proper range. See Soil Test Note 4, at [www.soiltest.vt.edu/stnotes](http://www.soiltest.vt.edu/stnotes), for documented micronutrient deficiencies in Virginia.

Soluble Salts (**S.Salts**) or fertilizer salts are estimated by measuring the electrical conductivity of a 1:2, vol:vol ratio of soil material to distilled water. Injury to plants may start at a soluble salts level above 844 ppm when grown in natural soil, especially under dry conditions and to germinating seeds and seedlings. Established plants will begin to look wilted and show signs related to drought. This test is used primarily for greenhouse, nursery and home garden soils where very high application rates of fertilizer may have led to an excessive buildup of soluble salts.

Soil **Organic Matter** (SOM) is the percentage by weight of the soil that consist of decomposed plant and animal residues, and is estimated by using either the weight Loss-On-Ignition (LOI method) from 150° to 360°C, or a modified Walkley-Black method. Generally, the greater the organic matter level, the better the overall soil tilth or soil quality, as nutrient and water holding capacities are greater, and improved aeration and soil structure enhance root growth. The percent of organic matter in a soil can affect the application rate of some herbicides. Soil organic matter levels from 0.5% to 2.5% are ordinary for natural, well-drained Virginia soils. A soil organic matter greater than 3% would be considered very high for a cultivated field on a farm, but can be beneficial. Due to relatively large amounts of organic materials being commonly added to gardens, the soil organic matter in garden soils can be raised into the range of 5% to 10%.



## APPENDIX

**The remaining values that are reported under the “Lab Test Results” section are calculated from the previous measured values and are of little use to most growers.**

Estimated Cation Exchange Capacity (**Est-CEC**) gives an indication of a soil’s ability to hold some nutrients against leaching. Natural soils in Virginia usually range in CEC from 1 to 12 meq/100g. A very sandy soil will normally have a CEC of 1 to 3 meq/100g. The CEC value will increase as the amount of clay and organic matter in the soil increases. This reported CEC is an estimation because it is calculated by summing the Mehlich 1 extractable cations (Ca + Mg + K), and the acidity estimated from the Buffer Index and converting to units commonly used for CEC. This is also an Effective CEC since it is the CEC at the current soil pH. This value can be erroneously high when the soil pH or soluble salts level is high.

The percent **Acidity** is a ratio of the amount of acid-generating cations (as measured by the Buffer Index) that occupy soil cation exchange sites to the total CEC sites. The higher this percentage, the higher the amount

of reserve acidity in the soil, and the higher the amount of acidity there will be in the soil solution and the lower the soil pH will be. A reported Acidity% of “N/A” means that a buffer index was not determined, and the acidity is probably less than 1 meq/100g and/or 5%, and the soil pH is alkaline (greater than 7.0).

The percent **Base Saturation** is the ratio of the quantity of non-acid generating cations (i.e., the exchangeable bases, Ca, Mg, and K) that occupy the cation exchange (CEC) sites.

The percent **Ca, Mg, or K Saturation** refers to the relative number of CEC sites that are occupied by that particular nutrient and is a way of evaluating for any gross nutrient imbalance.

### Additional Information

For questions and more information, contact your local Virginia Cooperative Extension (VCE) office or go to [www.ext.vt.edu](http://www.ext.vt.edu). Contact information for your local Extension office appears on the upper left of your soil test report.

### Conversion Factors

(Some Values are Approximate)

1 acre = 43,560 square feet

1 pound of 5-10-5, 5-10-10 or 10-10-10 fertilizer = 2 cups

1 pound of ground limestone or ground dolomitic limestone = 1.5 cups

1 pound of aluminum sulfate or magnesium sulfate = 2.5 cups

1 pound of sulfur = 3.3 cups

1 quart = 2 pints = 4 cups

1 pint = 2 cups = 32 tablespoons

1 tablespoon = 3 teaspoons

1 bushel = 35.24 liters = 1.25 cubic feet

Pounds per 100 square feet x 0.54 = lbs per cubic yard

100 square feet = 5 feet x 20 feet, 10 feet x 10 feet, or 2 feet x 50 feet

1,000 square feet = 50 feet x 20 feet, 10 feet x 100 feet, or 25 feet x 40 feet

Pounds per 100 square feet x 436 = pounds per acre

Pounds per 1,000 square feet x 43.6 = pounds per acre

Pounds per acre x 0.0023 = pounds per 100 square feet

Pounds per acre x 0.023 = pounds per 1,000 square feet



GREENVILLE, KENTUCKY STREET REVITALIZATION



**Pre-Revitalization**

Like many other small rural towns, Greenville was suffering from a deteriorating downtown as development was expanding outside Muhlenberg County, Kentucky

**Issues:**

- Declining Condition of Historic Main Street Facades
- Vacant Storefronts/Declining Business
- Poor Condition of Pedestrian Walkways
- Barren "City Atmosphere" & "Sense of Place"

**Strategies:**

- Redevelopment Plan Leading to 9 New Businesses
- Painting of Building Facades to Original & Uplifting Colors
- Hand Painted Welcome Signs
- Implementation of Lighting and Outdoor Music Speakers
- Construction of 12 acre Nature Park + Trails
- Improvement of Sidewalk Conditions

**Post-Revitalization**

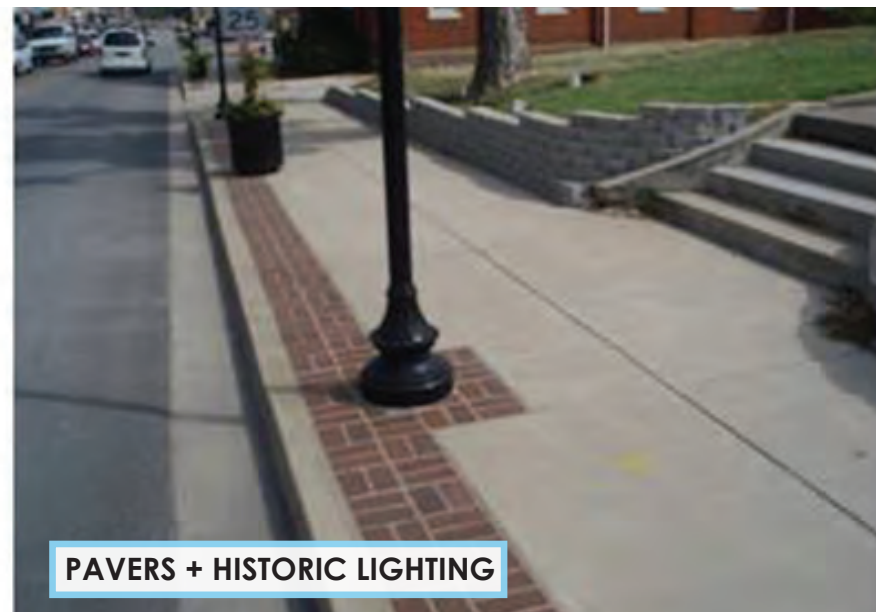
Greenville has become a model for how small communities can work to revive their historic downtowns through community revitalization efforts. After the revitalization of Greenville, the town has become a popular spot for outdoor music festivals, local food stands & a more thriving commerce.

**Application to West Jefferson:**

- Attraction of Visitors at Regional Scale
- Potential for Increase of Economy through Revitalization
- Application of Redevelopment Techniques
- Creating a New "Sense of Place" in Community Efforts



SIDEWALK IMPROVEMENTS



PAVERS + HISTORIC LIGHTING







NEWTON, NORTH CAROLINA STREET REVITALIZATION

PROGRAMMED ART FOR KIDS



BRICK PAVEMENT CROSSWALKS

**Pre Revitalization**

While the city of Newton, North Carolina is fortunate to have some local assets in good condition, deterioration of the downtown Main Street is still a prominent issue. Community members wish to utilize streetscape improvements in order to increase local prosperity & promotion of economic investments for a more vibrant, "business oriented" downtown

**Strategies:**

- Relocate Overhead Utilities/Street Clutter
- Promote Sustainable + Aesthetic Downtown Street Lighting
- Planting of Street Trees, Planters + Hanging Greenery
- Incorporation of Storm Water Control Areas
- Increased Aesthetic of Sidewalks/Crosswalks
- Dedication of Public Art Spaces Within the City
- More Downtown Signage
- Repair Aging Infrastructure

**Plan Results:**

- Planted Curb "Bump Outs" along main sidewalks
- Brick Pavers Used Over Underground Utilities
- Storm Water Planters For Water Treatment + Infiltration
- Replacement of Planter Boxes for "Water Wells"
- Improvement of Plants, Reduction of Maintenance
- Conservation of Water
- Implementation of "Way Finding Plan" through Signage
- Combining Need for Bike as 3D Sculptures
- "Pocket Parks" as Sculpture Gardens

**Application to West Jefferson:**

- Attraction of Visitors at Regional Scale
- Using Improvements for "branding effect" of Identity, History & Town Interests
- Aesthetic/Low Maintenance Street Storm Water Management Techniques
- "Way Finding Welcome Signage" Beneficial for Town Gateways and Entrances
- Goal for Promotion of Town Through Streetscape Plans + Economic Boost
- Establishment of "Pocket Parks" for Town Open Space Plan



STREETSCAPE PLANTINGS & RETENTION



WAYFINDING STREET SIGNS



3D SCULPTURE ART



SIDEWALK PLANTING BUMPOUTS

















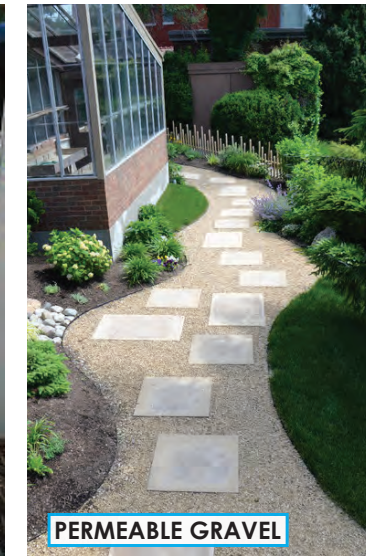
STONE GARDEN



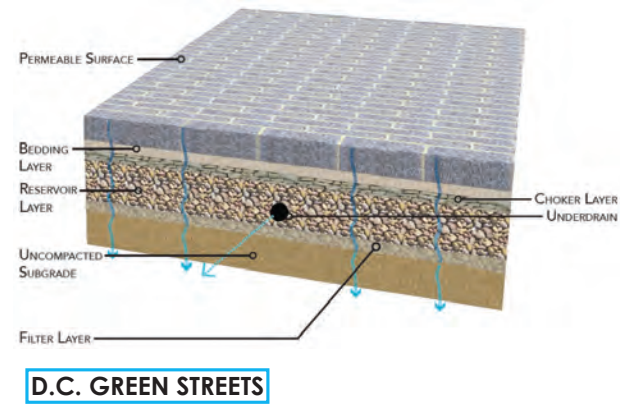
LARGE PAVERS



PATTERNED PAVING



PERMEABLE GRAVEL



D.C. GREEN STREETS



BRICK SIZED WALL LIGHTING



RUSTIC WALL LAMPS



DRY LAY FLAGSTONE



WOODEN PLANTERS



CHICAGO PLANTER INSTALLATION



BARREL PLANTING



**APPENDIX**

**Reference Materials**

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