

# Exceptional Universal Design: Designing for People with Exceptionalities



An architectural rendering of a modern urban street scene. The scene is viewed from an elevated perspective. In the foreground, a wide street with multiple lanes is shown, with several cars and a bus. A central green space, possibly a park or plaza, is visible, featuring a large green lawn and some trees. The background shows modern buildings with large windows and balconies. The overall atmosphere is bright and clear.

# Exceptional Universal Design: Designing for People with Exceptionalities

HOW CAN UNIVERSAL DESIGN  
PRINCIPLES BE APPLIED IN URBAN  
SETTINGS TO CREATE INCLUSIVE AND  
ACCESSIBLE SPACES FOR PEOPLE WITH  
EXCEPTIONALITIES?

# Who are People with Exceptionalities?

-AMPUTEE

-PHYSICALLY DISABLED

-HEARING IMPAIRED

-CONFINED TO A WHEELCHAIR

-VISUALLY IMPAIRED

-AUTISTIC SPECTRUM



# What is Universal Design?



# Research

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## Institutional Review Board (IRB)

For the protection of human research participants

### NDSU's Commitment

North Dakota State University is committed to protecting the rights, safety and welfare of all individuals participating in NDSU research projects. Research with human subjects is conducted in accordance with regulations of the Dept. of Health & Human Services, Food and Drug Administration, and other applicable agencies (see [NDSU Policy #345](#)). These protections ensure that: risks to participants are minimized, risks are reasonable in relation to benefits, recruitment procedures are fair, subjects are sufficiently informed and able to make a voluntary choice, their privacy and confidentiality are respected, and extra protections are in place for vulnerable groups.



## Creating Interactive Streetscapes, Plazas, and Parks for People with Exceptionalities

This study is being conducted by: Shane Ensz

### Key Information about this study:

This consent form is designed to inform you about the study you are being asked to participate in. Here you will find a brief summary about the study; however you can find more detailed information later on in the form.

- Participant Criteria:
  - 18+ in age
  - Experience in: Plazas, Streetscapes, and Parks
  - A person with Exceptionalities
  - Someone who assists those with exceptionalities
- People with Exceptionalities are:
  - Blind
  - Deaf
  - Physically Disabled
  - Amputee
  - Autistic

### Why am I being asked to take part in this study?

To give feedback as to how Landscapes like Plazas, Streetscapes and Parks can more inclusive and provide more accessibility and interactive for people with exceptionalities

### What will I be asked to do?

You will be asked to be part of an interview where you will talk about your experiences in Plazas, Streetscapes, and Parks as a person with exceptionalities. Questions in the interview are related to finding out your satisfaction with existing standards, accessibility and interactive in said areas.

### Where is the study going to take place, and how long will it take?

Duration may vary depending on the interviewee. Place of Interview preferably would be in person within the Fargo area but may also be online if needed.

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### ⚠️ What are the risks and discomforts?

It is not possible to identify all potential risks in research; however, reasonable safeguards have been taken to minimize known risks. If new findings develop during the course of the research which may change your willingness to participate, we will tell you about these findings."

### 👤 What are the expected benefits of this research?

**Individual Benefits:** If the participant will directly benefit from the research, include a description of the potential benefits here (e.g., "You will receive access to XYZ by participating in this research). Compensation (monetary or other compensation) should NOT be described in this section.

**Societal Benefits:** Describe the expected societal benefits, or the expected scientific advances.

### Do I have to take part in this study?

Your participation in this research is your choice. If you decide to participate in the study, you may change your mind and stop participating at any time without penalty or loss of benefits to which you are already entitled.

Instead of being in this research, you may choose not to participate.

### 📄 How will my information be used?

NOTE: Research collecting identifiable private information and **must** state that:

- Collected data may be given to another investigator for future research without additional consent, OR
- Collected data will not be used or distributed for future research, even if de-identified.

### 🕒 Can my participation in the study end early?

Yes, besides opting of study from your own fruition, Interviews may end early due to outside factors. These outside factors may include physical emergencies or scheduling difficulties.

### ❓ What if I have questions?

Before you decide whether you'd like to participate in this study, please ask any questions that come to mind now. Later, if you have questions about the study, you can contact Shane Ensz at (605)-759-8538 or SENSZ890@gmail.com

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### What are my rights as a research participant?

You have rights as a research participant. All research with human participants is reviewed by a committee called the *Institutional Review Board (IRB)* which works to protect your rights and welfare. If you have questions about your rights, an unresolved question, a concern or complaint about this research you may contact the IRB office at 701.231.8995, toll-free at 855-800-6717 or via email ([ndsuirb@ndsu.edu](mailto:ndsuirb@ndsu.edu)).

### Documentation of Informed Consent:

You are freely making a decision whether to be in this research study. Signing this form means that

1. you have read and understood this consent form
2. you have had your questions answered, and
3. you have decided to be in the study.

You will be given a copy of this consent form to keep.

\_\_\_\_\_  
Your signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Your printed name

\_\_\_\_\_  
Signature of researcher explaining study

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name of researcher explaining study

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# RESEARCH: INTERVIEWS

# ROBSON SQUARE, VANCOUVER:

CORNELIA HAHN OBERLANDER WAS THE LANDSCAPE ARCHITECT FOR ROBSON SQUARE, A PUBLIC PLAZA IN VANCOUVER, CANADA. THE PLAZA WAS DESIGNED TO BE A GATHERING PLACE FOR THE COMMUNITY, WITH A FOCUS ON INCLUSIVITY AND ACCESSIBILITY. THE DESIGN OF THE PLAZA INCORPORATES A NUMBER OF UNIVERSAL DESIGN PRINCIPLES, INCLUDING ACCESSIBLE PATHWAYS, INTEGRATED SEATING AREAS, AND A RANGE OF ACCESSIBLE AMENITIES. THE PLAZA ALSO INCLUDES A LARGE REFLECTING POOL, WHICH SERVES AS A GATHERING PLACE AND A COOLING FEATURE IN THE SUMMER MONTHS. THE DESIGN OF THE PLAZA HAS BEEN WIDELY PRAISED FOR ITS ACCESSIBILITY AND INCLUSIVITY, AND IT CONTINUES TO BE A POPULAR GATHERING PLACE FOR PEOPLE OF ALL AGES AND ABILITIES.



**RESEARCH:  
CASE STUDIES**

# PIONEER COURTHOUSE SQUARE, PORTLAND, OREGON:

PIONEER COURTHOUSE SQUARE, ALSO KNOWN AS "PORTLAND'S LIVING ROOM," IS A PUBLIC PLAZA IN DOWNTOWN PORTLAND. THE SQUARE WAS DESIGNED WITH UNIVERSAL DESIGN PRINCIPLES IN MIND, INCLUDING ACCESSIBLE PATHWAYS, INTEGRATED SEATING AREAS, AND A RANGE OF ACCESSIBLE AMENITIES. THE SQUARE ALSO INCLUDES A RANGE OF CULTURAL AND PERFORMANCE SPACES, WHICH ARE DESIGNED TO BE ACCESSIBLE TO PEOPLE WITH DISABILITIES. THESE FEATURES HELP TO CREATE AN INCLUSIVE AND WELCOMING SPACE FOR ALL VISITORS, INCLUDING THOSE WITH EXCEPTIONALITIES.



**RESEARCH:  
CASE STUDIES**

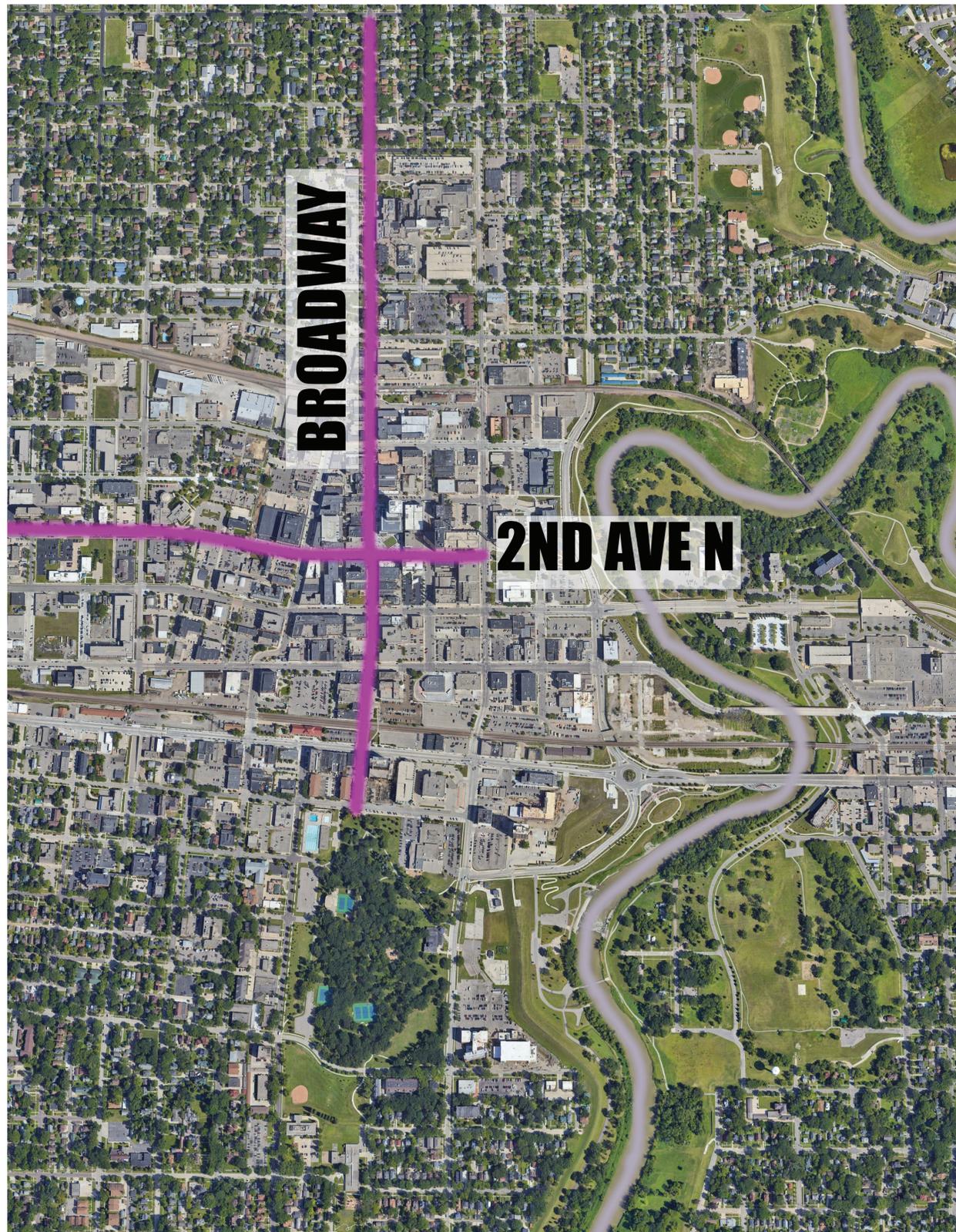
# UNION SQUARE, SAN FRANCISCO:

UNION SQUARE IS A PUBLIC PLAZA IN DOWNTOWN SAN FRANCISCO THAT WAS RECENTLY RENOVATED WITH A FOCUS ON ACCESSIBILITY AND INCLUSIVITY. THE PLAZA NOW INCLUDES A NUMBER OF UNIVERSAL DESIGN FEATURES, INCLUDING ACCESSIBLE PATHWAYS, INTEGRATED SEATING AREAS, AND A RANGE OF ACCESSIBLE AMENITIES. THE DESIGN OF THE PLAZA ALSO INCORPORATES A RANGE OF SUSTAINABLE FEATURES, SUCH AS RAINWATER HARVESTING AND SOLAR PANELS. THESE FEATURES HELP TO CREATE A WELCOMING AND INCLUSIVE SPACE FOR ALL VISITORS, REGARDLESS OF THEIR MOBILITY OR DISABILITY STATUS.



**RESEARCH:  
CASE STUDIES**

# Site



# Analysis: Project Objectives

An architectural rendering of a modern building courtyard. The building has a glass facade and a central courtyard with a green lawn, trees, and a seating area with red tables and chairs. A blue and white bus is parked on the street in the foreground, and a pedestrian is walking on the sidewalk. The scene is set in a city environment with other buildings in the background.

## ACCESSIBILITY

ABILITY TO ACCESS THE SITE AND NAVIGATE IT WITH RELATIVE EASE.

## ACTIVITY

USING DIFFERENT SENSES TO INTERACT WITH THE SITE AND COULD PARTICIPATE IN ACTIVITIES.

## ADAPTABILITY

ABILITY TO DESIGN AND CHANGE THE SITE REGARDS TO TIME AND COST AND WITHOUT COMPLETE RECONSTRUCTION.

# ACCESSIBILITY

ABILITY TO ACCESS THE SITE AND NAVIGATE IT WITH RELATIVE EASE.

**MATERIAL:** DOES THE MATERIAL LEND ITSELF TO A GOOD TEXTURE, AND TACTILE WHILE REMAINING SMOOTH?

**PATH WIDTH:** MINIMUM AND MAXIMUM WIDTH OF CIRCULATION AREA

**PATH CONSTANT:** HOW CONSISTENT IS THE PATH, DOES IT CHANGE DIRECTION AND WIDTH?

**CONDITION:** HOW WELL MAINTAINED IS THE SITE, DOES IT HAVE SUBSTANTIAL PROBLEMS?



**ANALYSIS:  
ACCESSABILITY**



# ACTIVITY

USING DIFFERENT SENSES TO INTERACT WITH THE SITE AND COULD PARTICIPATE IN ACTIVITIES.

**SIGHT:** (FOR THOSE WHO CAN PARTICIPATE) IS THE PURPOSE/FUNCTION OF THE SITE UNDERSTANDABLE THROUGH SIGHT?

**TOUCH:** DOES THE SITE HAVE TACTILE AND REACHABLE MATERIALS/STRUCTURES? DO THEY ENCOURAGE PARTICIPATION FROM EVERYONE?

**SOUND:** ARE THE SOUNDS WELL HEARD BUT NOT OVERBEARING? DO THEY HELP PEOPLE USE THE SPACE OR ARE THEY JUST NOISE?



**ANALYSIS:  
ACTIVITY**

# ADAPTABILITY

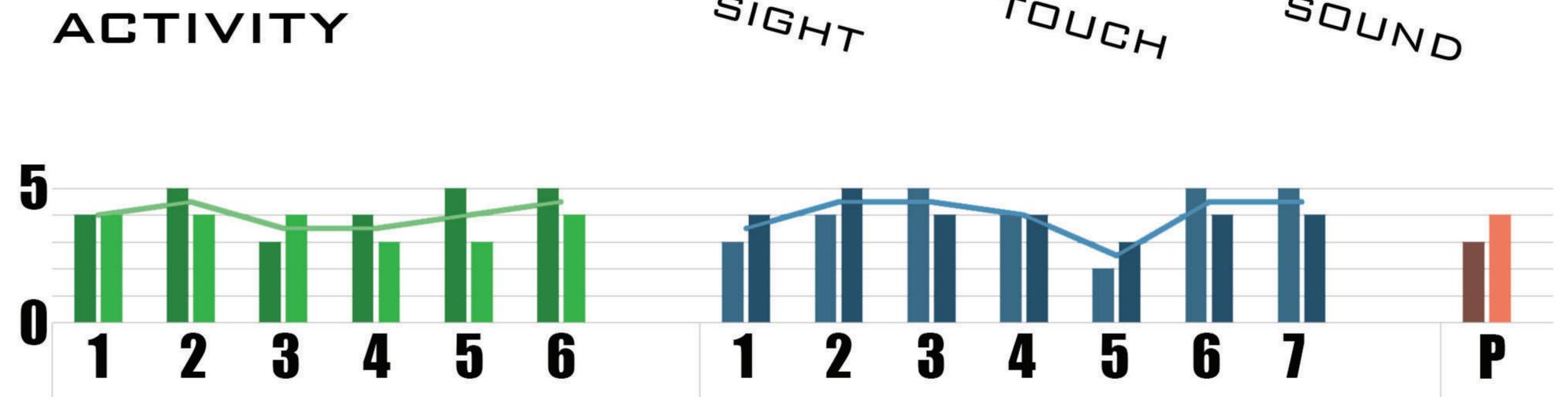
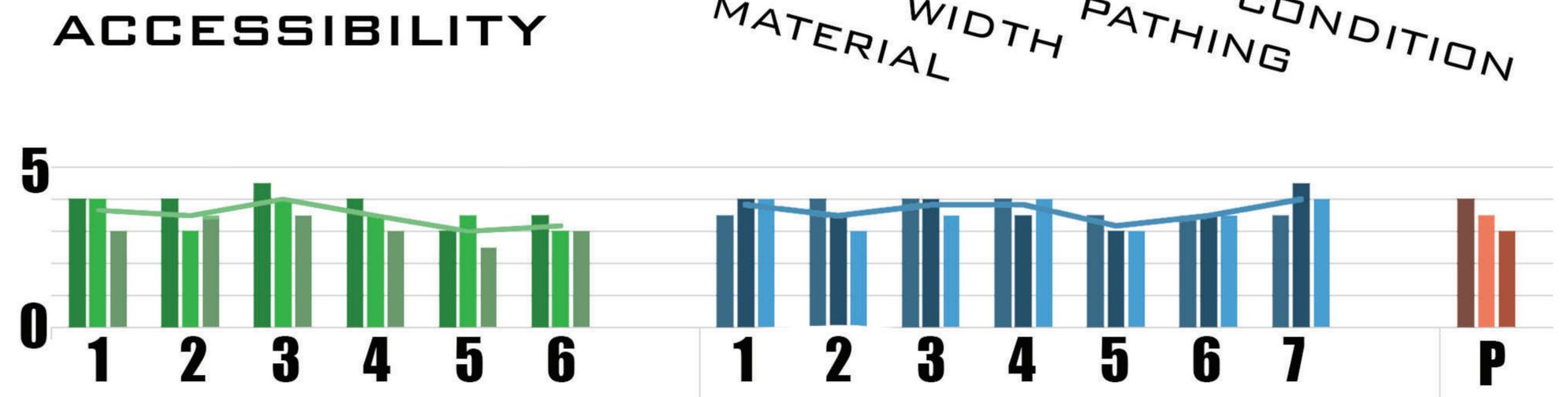
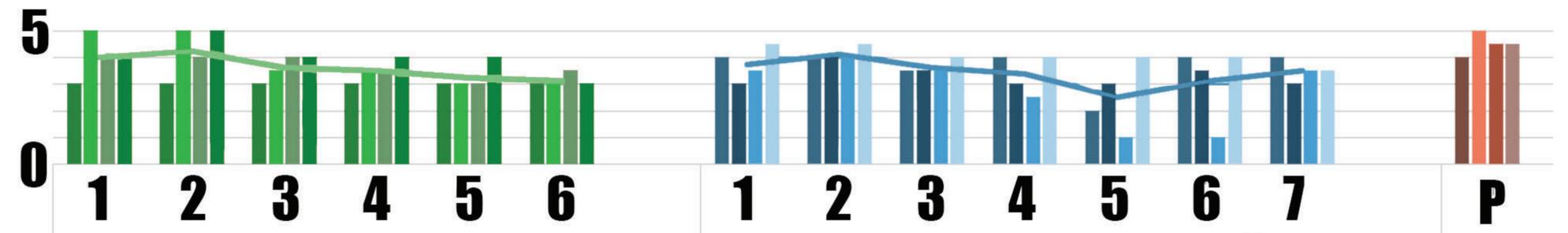
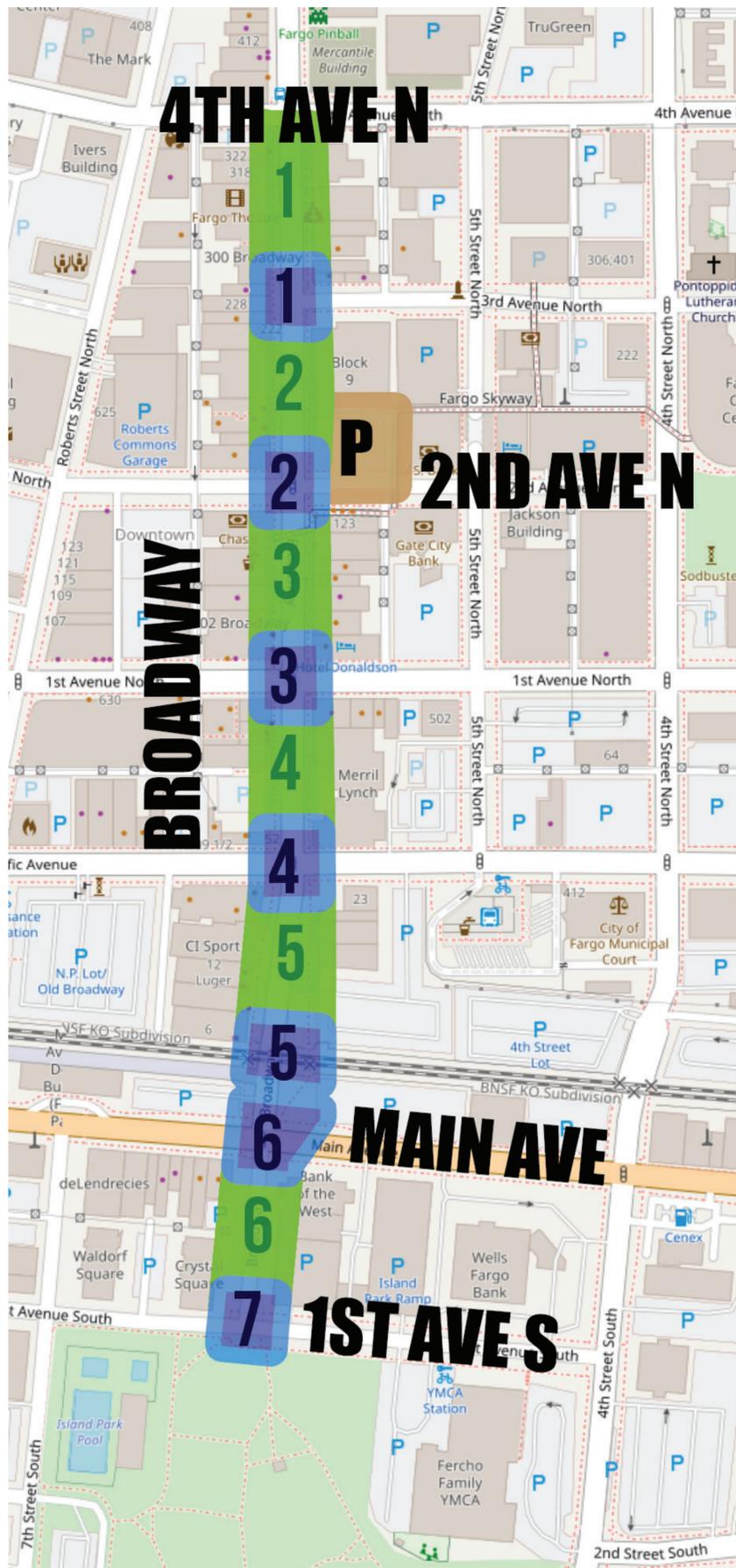
ABILITY TO DESIGN AND CHANGE THE SITE REGARDS TO TIME AND COST AND WITHOUT COMPLETE RECONSTRUCTION.

**TIME:** HOW MUCH TIME WOULD IT TAKE TO REDESIGN AND RECONSTRUCT THE SITE TO BETTER SERVER PEOPLE WITH EXPTIONALITIES? ARE THERE FACTORS THAT WOULD SLOW THE PROCESS? (DIFFERENT LAND OWNERS, EASEMENTS, ETC.)

**COST:** DOES THE COST OF CONSTRUCTING AND ADAPTING THE SITE FOR BETTER USE COST MORE THAN THE CHANGE IS PERSEVERINGLY WORTH, OR IS THE COST 'MINIMAL'? WOULD FUNDING BE POSSIBLE?



**ANALYSIS:  
ADAPTABILITY**



**ANALYSIS:  
RESULTS**

# Enhancements

## PLAZA

### ENHANCEMENTS:

- 1** -FURNITURE ZONE
- 2** ACTIVE BOUNDARY
- 3** -FURNITURE TOPS
- 4** -CURB BOUNDARY

## CROSSING

### ENHANCEMENTS:

- 1** -ALIGNMENT
- 2** CROSSWALK
- 3** -TACTILE PAD
- 4** -LANDING

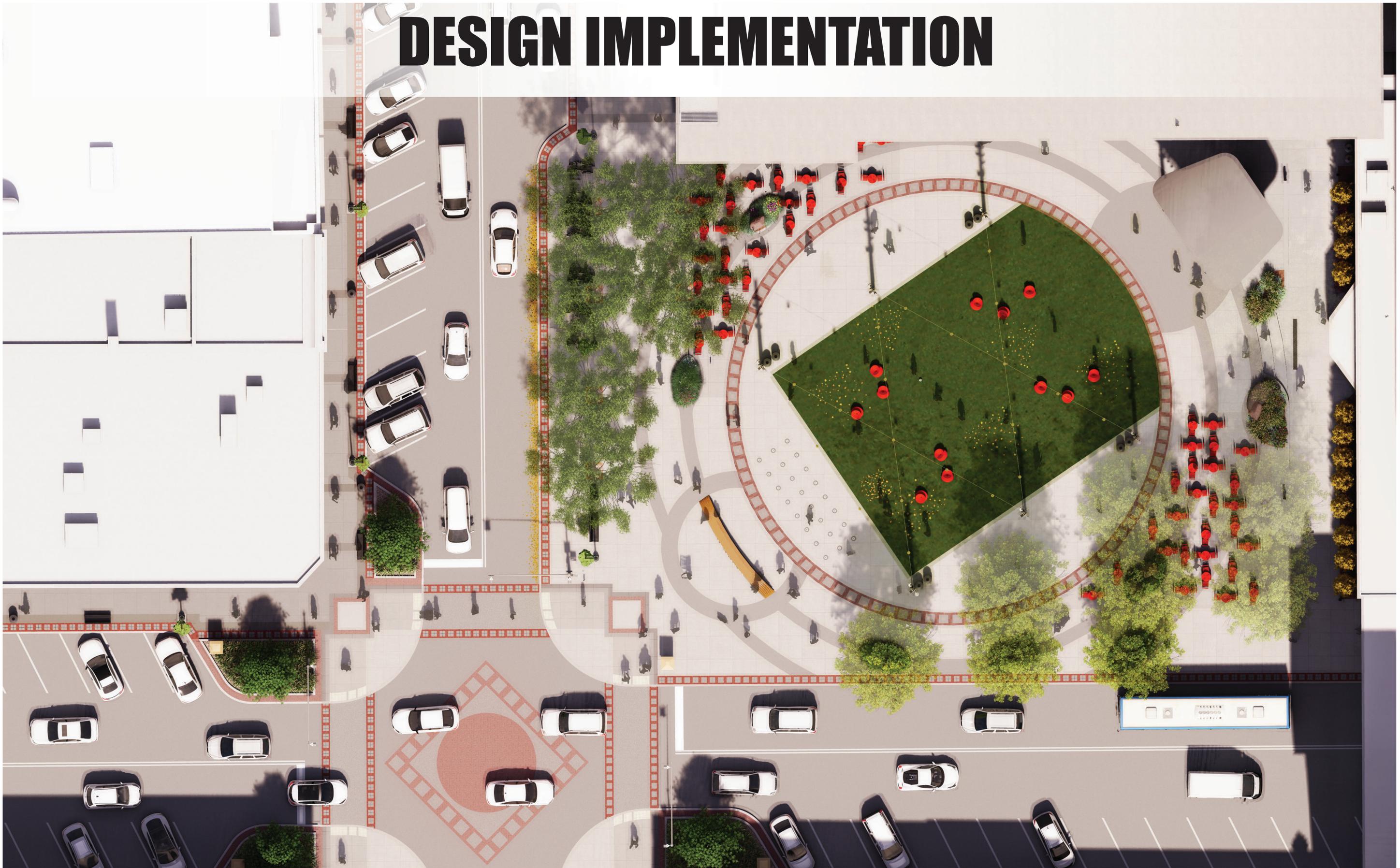
## SIDEWALK

### ENHANCEMENTS:

- 1** -ENTRY MARKER
- 2** AMENITIES ZONE
- 3** -AMENITY MARKER
- 4** CONSISTENT PATH



# DESIGN IMPLEMENTATION



# PLAZA



## PLAZA ENHANCEMENTS:

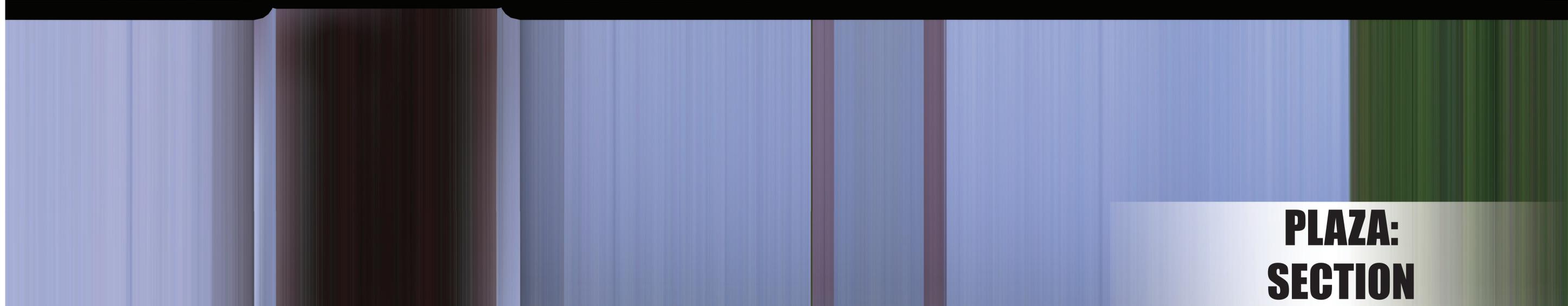
- 1** - FURNITURE ZONE
- 2** - ACTIVE BOUNDARY
- 3** - FURNITURE TOPS
- 4** - CURB BOUNDARY



**PLAZA:  
CURB BOUNDARY**



**PLAZA:  
ACTIVE BOUNDARY**



**PLAZA:  
SECTION**



**PLAZA:  
FURNITURE ZONE**

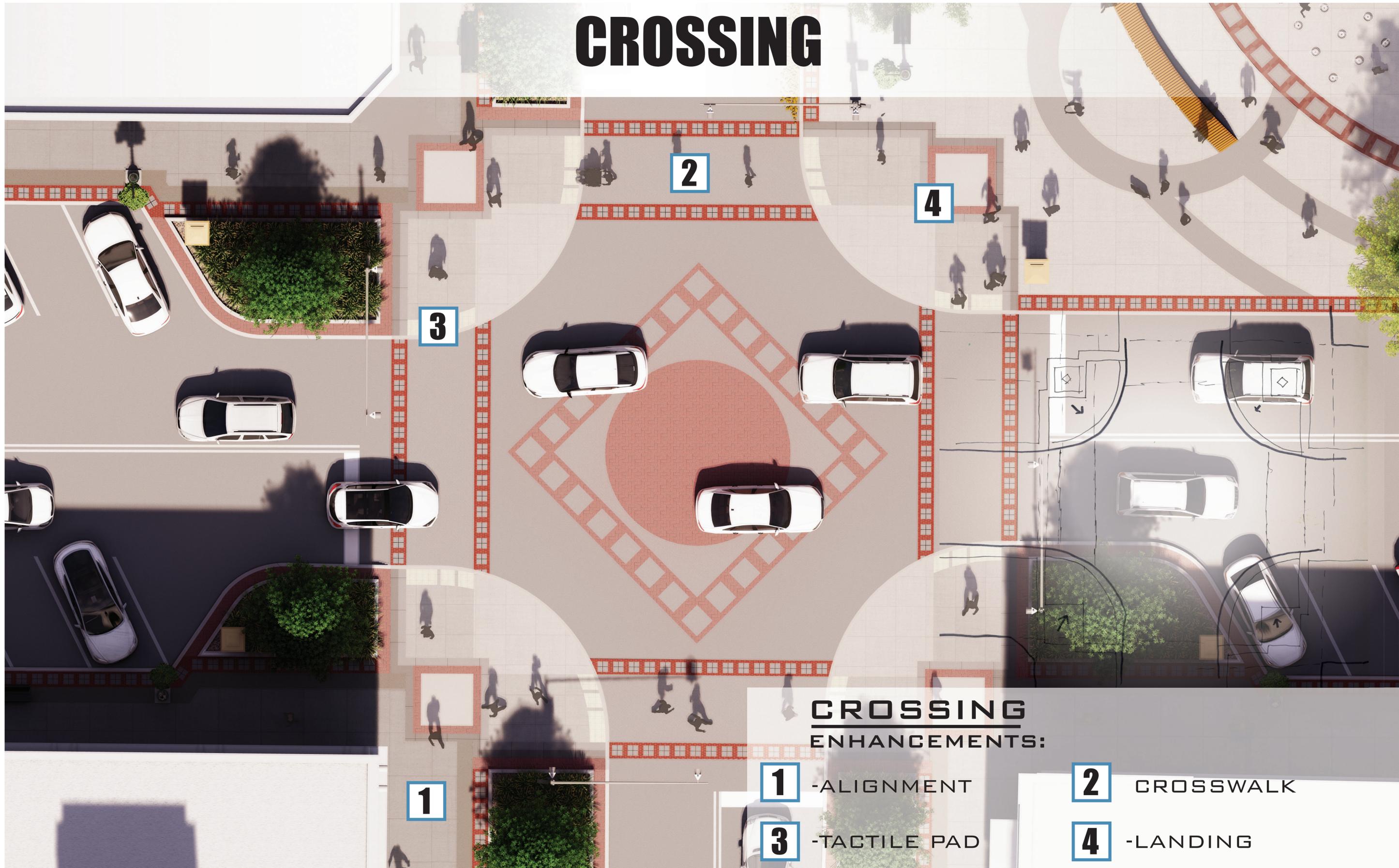


**PLAZA:  
FURNITURE ZONE**



**PLAZA:  
FURNITURE**

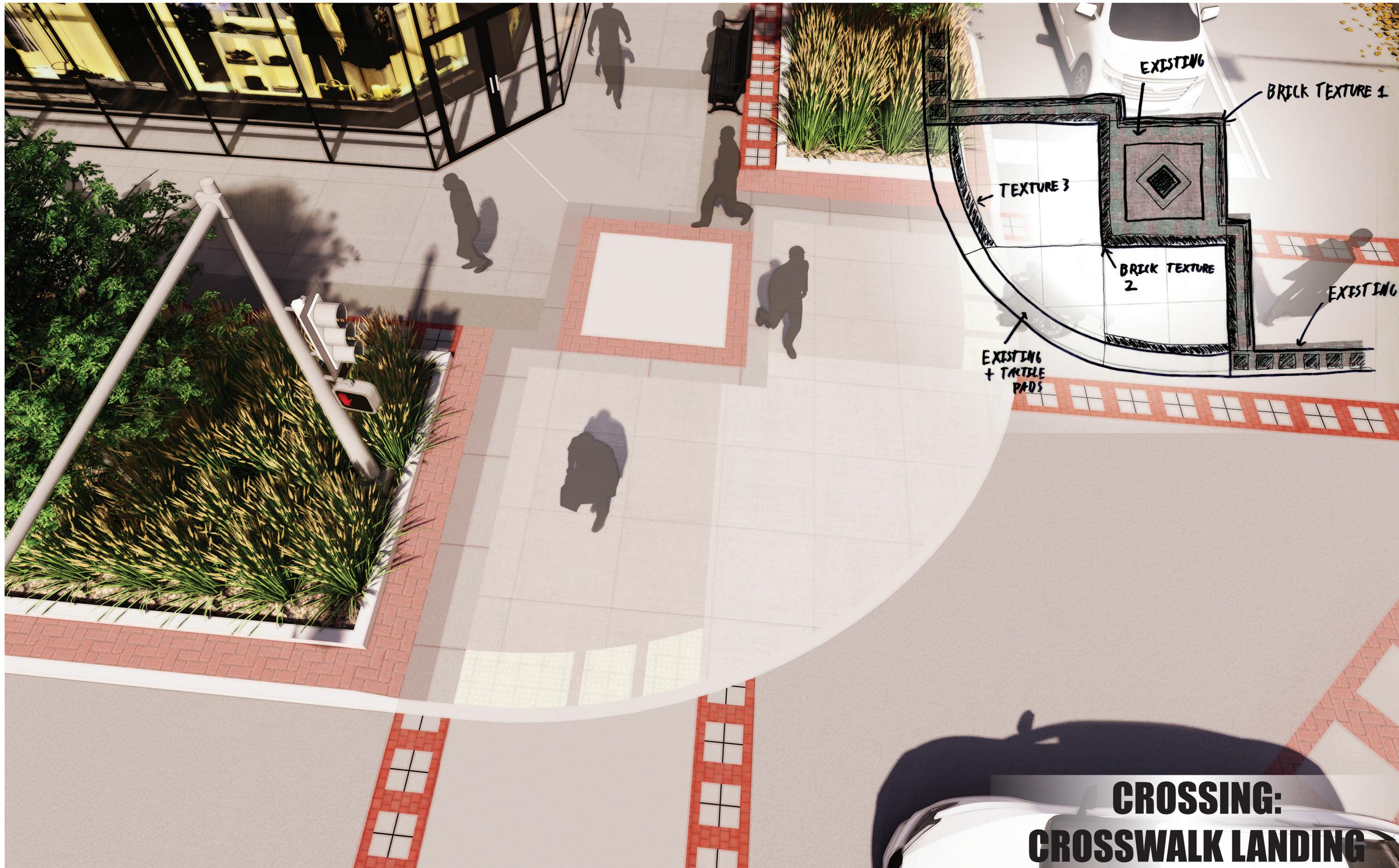
# CROSSING



## CROSSING ENHANCEMENTS:

- 1** -ALIGNMENT
- 3** -TACTILE PAD

- 2** CROSSWALK
- 4** -LANDING



**CROSSING:  
CROSSWALK LANDING**



**CROSSING:  
ENLARGED**

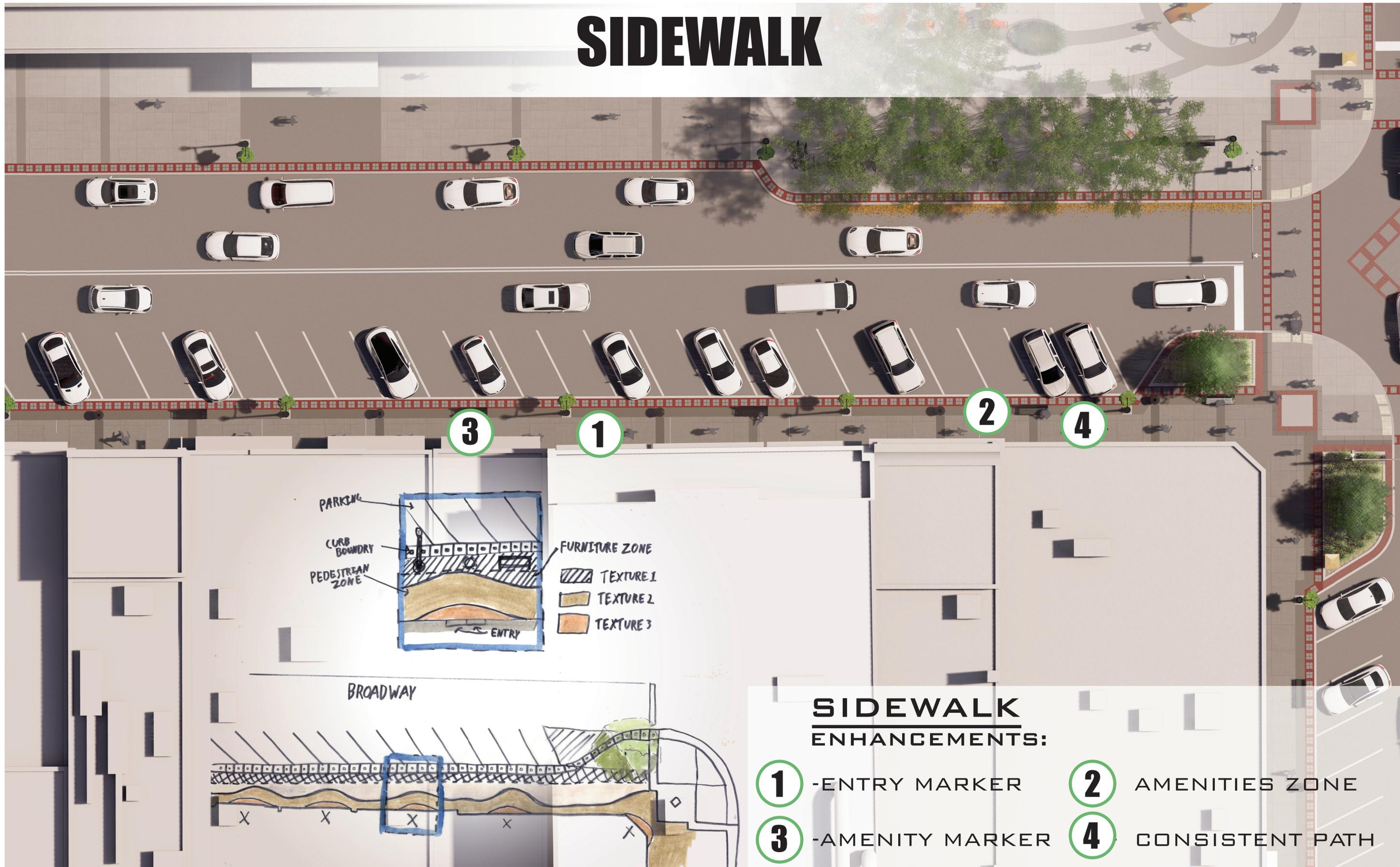


**CROSSING:  
TACTILE PAD**



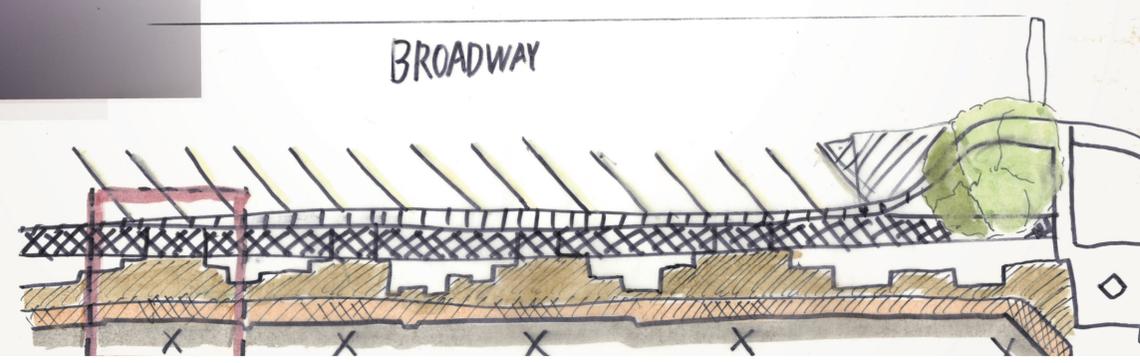
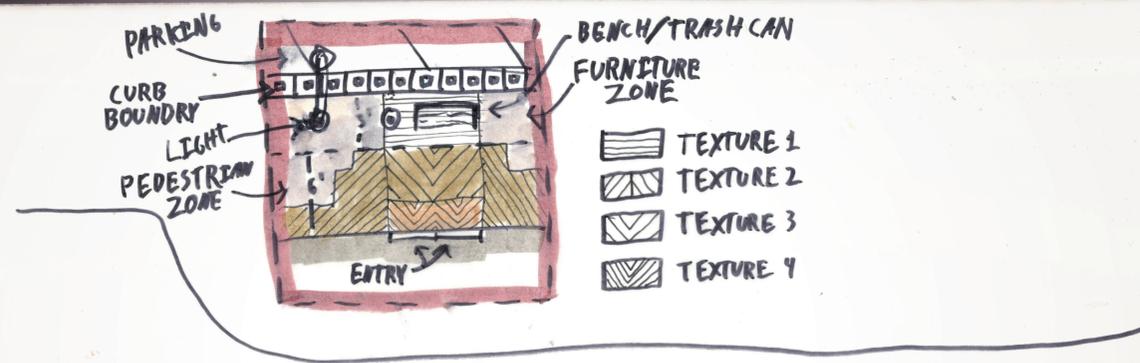
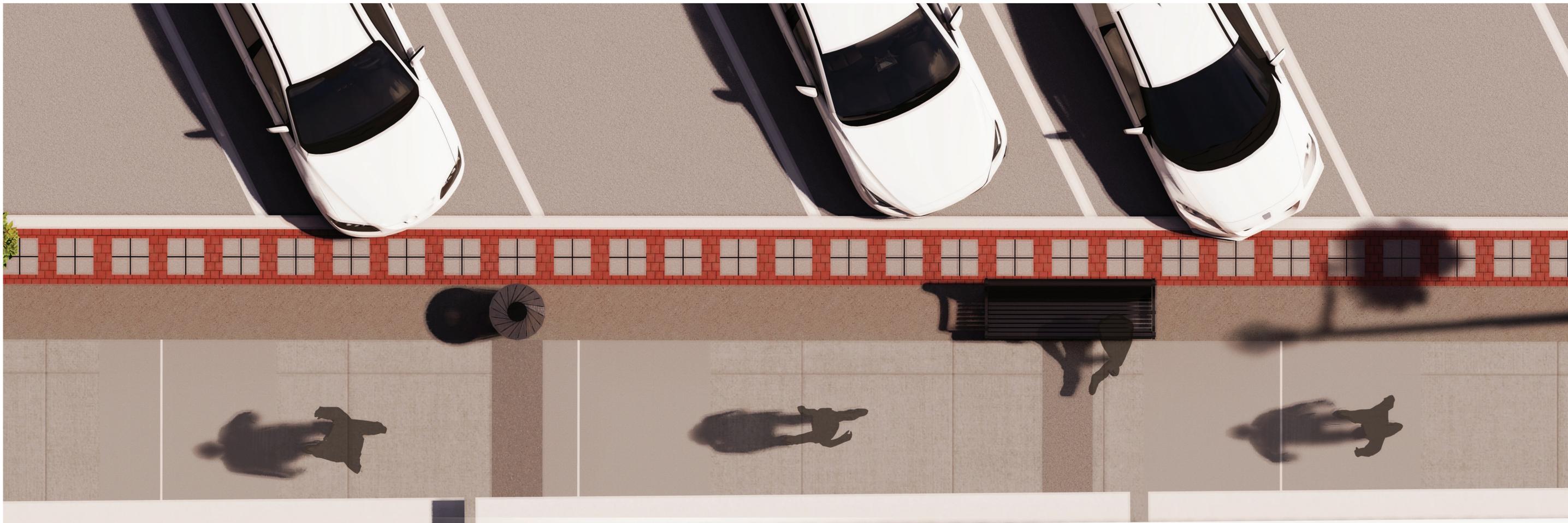
**CROSSING:  
SECTION CUT**

# SIDEWALK



## SIDEWALK ENHANCEMENTS:

- 1** - ENTRY MARKER
- 2** AMENITIES ZONE
- 3** - AMENITY MARKER
- 4** CONSISTENT PATH



**SIDEWALK:  
ENLARGED**



**SIDEWALK:  
SECTION**



**SIDEWALK:  
PERSPECTIVE**

# REVIEW



# QUESTIONS

