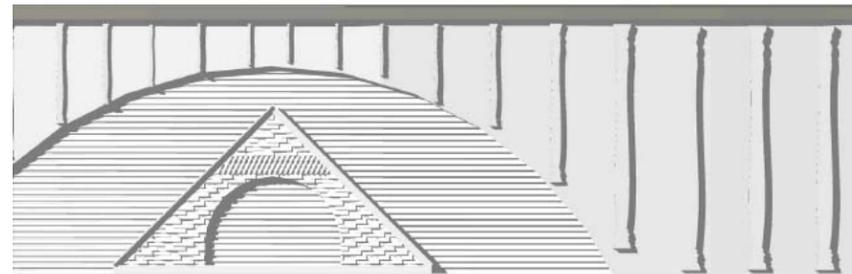
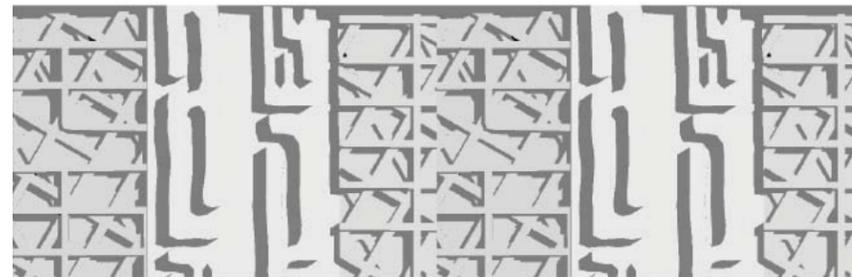
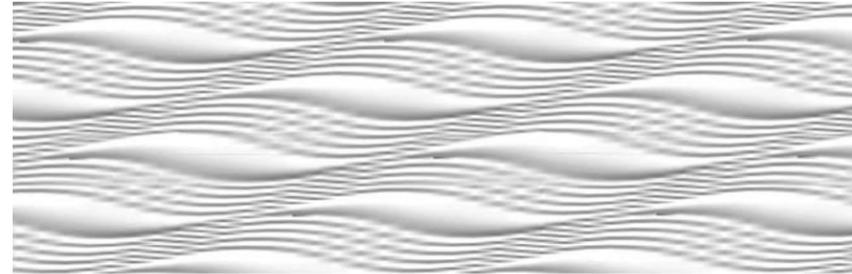


VISUAL QUALITY MANUAL



I-35W – LAKE STREET TRANSIT/ACCESS PROJECT
CHAPTER 152 BRIDGES
I-35W FROM 32ND TO 42ND STREET



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JANUARY 2015

VISUAL QUALITY MANUAL

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I-35W Transit/Access Project - Phase 1 Environmental Site Assessment

I-35W Transit/Access Project - Lake Street Transit Station 60% Architectural Design Plans

I-35W Transit/Access Project - Concept and Preliminary Bridge Plans

Hennepin County Regional Railroad Authority (HCRRA), Cultural Landscape Management and Treatment Guidelines for the Historic District of the Midtown Corridor, 2006.

The Visual Quality Manual (VQM) focuses on the aesthetic design intent and requirements for two major I-35W projects – the Transit/Access Project and the Chapter 152 Bridge Project.

It also serves as guidance for design continuity for the planned rehabilitation of I-35W to the south (43rd Street to 32nd Street).

This document summarizes the expectations of project agency partners and advisory committee members for creating attractive, safe, convenient, durable and highly accessible multimodal transportation facilities and services within the project area.

1.1 Background and Purpose for the Visual Quality Manual

The purpose of this Visual Quality Manual (VQM) is to establish visual quality requirements for the I-35W-Lake Street Transit/Access Project (Transit/Access Project) and for the freeway and bridges located north and south of the Transit/Access Project. The components of the planned projects will establish the Orange Line bus rapid transit (BRT) service along I-35W and include construction or rehabilitation of roadway, transit station facilities, and supporting elements as described in more detail throughout this document.

This VQM is written as guidance for professionals engaged in final project design and construction, and as a reference document for all project managers and stakeholders. Organizationally, the VQM serves two main purposes:

- Provides background on the project area’s features, context, and visual quality goals (Chapter 1)
- Identifies the minimum design requirements and guidance for the project associated with visual quality goals, including guidance on how to proceed through final design and construction (Chapter 2, with some procedural guidance also found in Chapter 1)

Therefore, this VQM contains criteria and objectives that will be used to determine compliance with Project requirements as the process moves into final design and construction. Because of the visual nature of most of the requirements and recommendations, this VQM includes significant graphic material. The VQM has two chapters:

1. Introduction and Project Context—Chapter 1 describes the procedural history and the physical context for the project, along with basic definitions. It includes some procedural guidance but does not address technical design requirements. The project components are described in Section 1.2. The design elements addressed are listed in Section 1.3.

2. Design Requirements for Visual Quality Elements—Chapter 2 establishes the project requirements for the design of visual quality elements. Chapter 2 is organized by the visual quality segments and project components described in Section 1.2.

In summary, this VQM (with reference to preliminary engineering designs) is a framework for the aesthetics intended for the I-35W corridor from 43rd Street to the I-94 Commons near downtown Minneapolis. The greatest level-of-detail is provided for the Lake Street/Greenway segment, with the new transit station at Lake Street being at the heart of the Transit/Access Project. By comparison, the level of preliminary engineering design completed to-date to the north, near the I-35W/I-94 interchange, is minimal.

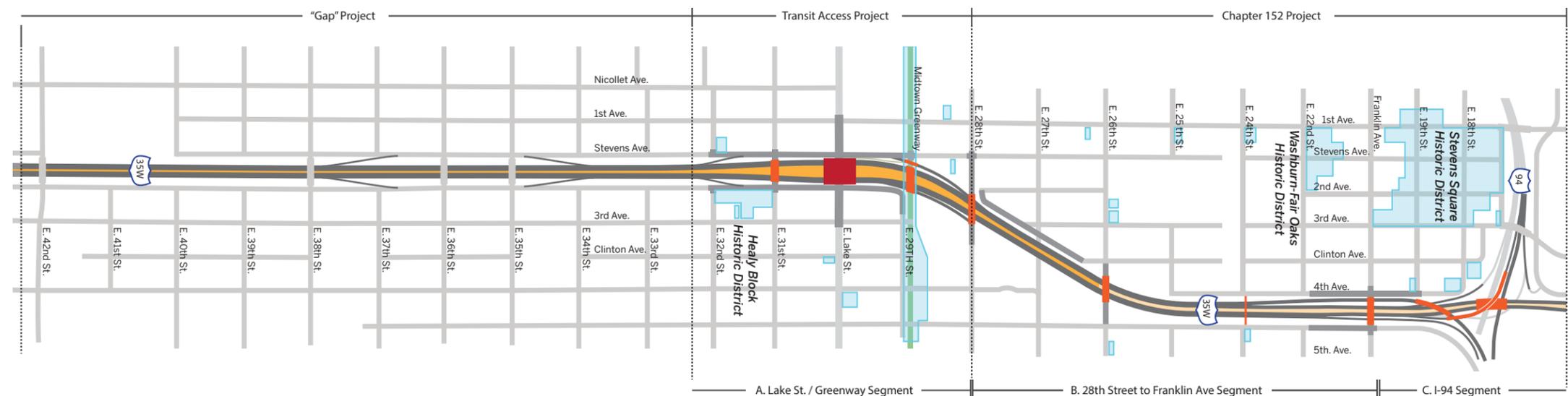


Exhibit 1.1 - Projects and Segments

1.1.1 Corridor and Project Overview

The completion of all project components will improve the I-35W corridor for all users—residents, businesses, transit riders, bicyclists, pedestrians, and drivers. Accordingly, the planning and design has been a cooperative effort among Hennepin County, Metro Transit, the City of Minneapolis, the Minnesota Department of Transportation (MnDOT), Metropolitan Council, and the Federal Highway Administration (FHWA). The detailed background and project engineering design has been established through many project design plans and documents while this VQM addresses the aesthetic design intent and requirements.

Exhibit 1.1 provides an overview of the I-35W corridor addressed in this VQM, for which two major projects are anticipated:

Transit/Access Project—The I-35W-Lake Street Transit/Access Project addresses the Lake Street interchange area between approximately 32nd Street and 28th Street. A new transit station is the heart of this project, providing a hub for local buses on Lake Street and for BRT above Lake Street in-line with the freeway. This project, estimated at about \$150 million and planned for 2017 construction, includes:

- Full rehabilitation of freeway, ramps, and some sections of local streets and sidewalks immediately adjacent to the freeway
- Orange Line BRT station at Lake Street
- New bridges at 31st Street, Lake Street, Midtown Greenway, and 28th Street
- High-quality bicycle/pedestrian connection between Lake Street and the Midtown Greenway, including connectivity to potential future rail transit service along the Midtown Greenway
- Noise walls and retaining walls
- New exit ramp at Lake Street from southbound I-35W
- New exit ramp from northbound I-35W to 28th Street

Chapter 152 Bridge Project—There are two bridges on I-35W that are included in Minnesota Statutes Chapter 152, which requires structurally deficient bridges to be replaced. These are the “Braid Bridge,” which carries I-35W southbound from the I-94 common section, and the flyover, which is the ramp from northbound I-35W to westbound I-94. The replacement and relocation of these bridges will require the rehabilitation of I-35W between 28th Street and the I-94 commons in downtown Minneapolis. This project, estimated at about \$102 million and planned for 2017 construction, includes:

- Full rehabilitation of freeway, ramps, and freeway bridges
- New bridges at 26th Street and Franklin Avenue
- New 24th Street pedestrian/bicycle bridge
- Noise walls and retaining walls

MnDOT is also planning to rehabilitate I-35W between approximately 43rd Street and 32nd Street. This third project, sometimes called the “Gap Project,” will address continuity between the Crosstown Commons Interchange (I-35W and Trunk Highway [TH] 62) and the Transit/Access Project. The Gap Project includes replacement of pavement, extension of the southbound managed lane, and rehabilitation of bridges and noise walls.

The concurrent planning of these projects presents the opportunity to create an I-35W corridor that is integrated both functionally and aesthetically. The relevant background includes detailed aesthetic guidance developed for the Crosstown Commons Interchange to the south (I-35W Corridor Aesthetic Design Guide, I-494 to 42nd Street, April 2001), which has since been implemented. Many of the requirements in the 2001 Aesthetic Design Guide are included in this VQM to address continuity along the corridor, especially for views from the freeway. However, the planned transit station at Lake Street presents unique challenges and opportunities, with its integral structures and public spaces, including pedestrian/bicycle connections to the surrounding area. Therefore, the preliminary design plans and this VQM address many project-specific details around Lake Street and the Midtown Greenway, recognizing that users will be experiencing these spaces much more intimately—often from perspectives on local streets, trails, and sidewalks.

Considering the above-noted background, the main VQM study area is described and organized based on three segments (also noted in Exhibit 1.1):

- A. Lake Street/Greenway segment (Transit/Access Project)
- B. 28th Street to Franklin Avenue segment (Chapter 152 Bridge Project)
- C. I-94 segment (Chapter 152 Bridge Project)

These three segments are useful to address the varied settings or contextual places for the Transit/Access and Chapter 152 Bridge Projects that have been proposed and preliminarily designed. Among these segments, the Lake Street/Greenway segment is the most involved because it includes the new transit station as previously noted. See Section 1.2 for more information about the individual project segments.

The preliminary design and stakeholder outreach work performed to support development of this VQM did not specifically address I-35W from 43rd Street to 32nd Street (the Gap Project). However, the VQM does provide design guidance for areas along I-35W that can logically be repeated for similar settings or locations. Designers should consider such guidance applicable in cases where specific locations are not called out. For example, this guidance applies to retaining walls, new or reconstructed noise walls, and local bridge railings visible from the freeway. Such design guidance, therefore, is applicable for I-35W from 43rd Street to 32nd Street.

The visual quality intent for the referenced projects was developed during the preliminary engineering phase with input from the Project Advisory Committee (PAC) and guidance from the design consultant team. Working closely with the PAC was important to ensure that community values are reflected in the process by including a

The concurrent planning of the referenced projects create an I-35W corridor that is integrated both functionally and aesthetically. The planned transit station at Lake Street presents unique opportunities, with its integral structures and public spaces, including pedestrian/bicycle connections.

Public and agency input was important to establish the design principles and evaluation criteria reflected in this VQM. Continued work with all stakeholders will be required throughout final design and construction as well.

cross section of government, business, and neighborhood organizations. The visual quality process was conducted in parallel with the environmental reviews and agency coordination activities carried out during the ongoing development of the Environmental Assessment (EA). The work completed in connection with the visual quality process is documented in Section 1.1.2.

1.1.2 Preliminary Design, Environmental Assessment, and Project Development Process

The preliminary design work for the I-35W-Lake Street Transit/Access Project and the Chapter 152 Bridge Project commenced in January 2011. The projects include long-planned, urban transportation infrastructure improvements within the 2 miles directly south of downtown Minneapolis, including the new in-line BRT station on I-35W, supporting freeway/bridge elements, local street improvements, pedestrian/bicycle accommodations, and new freeway exit ramps. The functional details of the design have been addressed through preliminary design drawings and the decision-making process is addressed in the EA.

Near the south end of the corridor (Exhibit 1.1), I-35W crosses Lake Street, a major east-west arterial, transit route, and commercial district. Freeway access to Lake Street is to and from the south at 31st Street just north of Lake Street, the freeway crosses over the Midtown Greenway, a popular bicycle commuter route and recreational trail. There are several large medical facilities and other large business employers located along 28th Street to the east of I-35W. The north end of the project includes the interchange with I-94 and freeway connections to and from downtown Minneapolis. Throughout the project area, the surrounding neighborhoods include residential and business districts, historic districts, and other land uses. Therefore, compatibility of project design components with the surrounding area, and effective local transportation service, were constant considerations. The initial focus of the preliminary design process was the location and development of the transit station at Lake Street and associated elements, including a high-quality pedestrian/bicycle connection to the Midtown Greenway. Additional freeway access ramps were also evaluated in the Lake Street and Midtown Greenway areas. As summarized in Section 1.2, context-sensitive design criteria were discussed and used to guide the design process.

The EA was developed in parallel with the preliminary design work and provides the process for making formal project decisions. The EA and related studies address project impacts on surrounding properties, including any potentially adverse effects on historic buildings, historic districts, and any impacts from increases in noise levels. In some cases, these impacts will have relationships to visual quality issues—for example, landscaping and design treatments for walls (including noise barriers). At this point, the preliminary design and environmental processes have advanced sufficiently to support and complement this VQM.

Chapter 1 provides information regarding design intent.

Chapter 2 provides all of the project's design requirements, as they relate to visual quality.

1.1.3 Public and Agency Involvement

The Context Sensitive Solutions (CSS) technique is an interdisciplinary design process and was the foundation for community outreach and involvement. A variety of CSS-based methods were used to guide the project through design, principally meetings with stakeholders, project owners/partners, and agencies. The input received through meetings and other communications (such as website tools, social media, and correspondence) was important to establish the design principles and evaluation criteria reflected in this VQM. Continued work with all stakeholders will be required as well throughout final design and construction. The main elements of the outreach work during preliminary design were:

- **Project Advisory Committee (PAC) meetings**—The PAC was created to give a wide range of stakeholders the opportunity to meet regularly and provide input and guidance throughout the preliminary design phase. Members of the PAC included local and state agencies (Hennepin County, Metro Transit, the City of Minneapolis, MnDOT, and Metropolitan Council), as well as local community representatives from the Minneapolis neighborhood organizations. There were additional representatives from local business organizations and representatives from several of the large employers in the project area. Starting in February 2011, the PAC met regularly (approximately monthly) through much of the preliminary engineering phase, with less frequent meetings in 2014 as the preliminary design was nearing completion. (See the project website, www.35lake.com for more information.)
- **Other public outreach efforts and web site**—Public open houses were held periodically to provide project updates in an informal setting that allowed for discussion with project staff. A variety of exhibits showing elements of the project were provided and project staff were available to answer questions and receive feedback from the public. Project managers also met regularly with local stakeholders at small-group or neighborhood-focused meetings to discuss project design concepts and issues. Throughout the process, information has been posted regularly on the project website (www.35lake.com).
- **Agency coordination**—Many other project meetings focused on addressing the roles of various agencies in the project (including roles in project ownership, funding, and implementation), coordinating project design leaders, addressing regulatory and environmental requirements, and coordinating roles in working with stakeholders and in maintaining the future infrastructure.

Project implementation, including the objectives and design requirements provided in this VQM, will require continued work with all stakeholders. The approach and structure for public and agency involvement will be determined during the final project design and construction stages. However, the public/agency involvement elements could be maintained with special focus areas—for example, to address the implementation of public art and to manage construction-period impacts on nearby residents and businesses.

Work with public and agency stakeholders continues as this VQM is completed (late 2014). These communications were necessary to complete the EA and to address cost participation and roles among the owning agencies—Hennepin County, Metro Transit, City of Minneapolis, and MnDOT.

1.2 Project Design & Context - The Project Segments

During preliminary design, the overall project area was divided into the three segments previously noted and shown in Exhibit 1.1. The project components and the design principles or criteria for each segment are discussed in the subsections below. Chapter 2 addresses the design requirements based on these criteria.

1.2.1 Lake Street and Midtown Greenway Segment

This segment includes I-35W from 32nd Street to 28th Street and has several major design components. The preliminary design process for the Lake Street/Greenway segment was the most involved part of the project development work to-date, with the new transit station at Lake Street being at the heart of the Transit/Access Project and involving all modes and design features, including freeway, local bus, and BRT transit facilities on two levels, associated architectural spaces, and connections to the surrounding area. The Midtown Greenway trail, which serves as a major bicycle commuting and recreational route, runs parallel to Lake Street (one block to the north) and was integral to the transit station planning and design process. Additionally, future plans for the Midtown Greenway include the potential for rail transit service.

1.2.1.1 Segment Characteristics and Objectives

Lake Street—Lake Street was first built in the 1880s as a cross-town street with a major streetcar line. Stretching across Minneapolis from St. Louis Park in the west to St. Paul in the east, Lake Street is the most direct route between Lake Calhoun and the Mississippi River. The corridor has developed into a major commercial center with shops, restaurants, and office buildings.

The onset of suburbanization and surge of automobile ownership in the 1950s and 1960s resulted in the corridor's decline, as I-35W was planned and constructed. The resulting I-35W southbound and northbound bridges over Lake Street (concrete beam spans), were constructed in 1966 and provide 80 feet of horizontal clearance (64 feet curb-to-curb and two 8-foot sidewalks) with the end spans enclosed. This span created a "tunnel-like" environment under the freeway, with the sidewalks next to vertical walls on both sides. In the 1990s, the corridor began to transform again, spurred primarily by a large immigrant population settling in the area. In 1993, the jurisdiction of Lake Street was transferred from the City of Minneapolis to Hennepin County; and in 1999, the Lake Street Framework Plan was released. This plan was the start of a process that ultimately led to a \$25-million reconstruction project for the area, built between 2005 and 2008. Simultaneously, the development of major transit improvements in the Minneapolis-St. Paul metropolitan area had proceeded, including managed lanes on freeways and the planning of the Orange Line BRT along I-35W.

Today, there are bus shelters and pullouts along I-35W at Lake Street; however, the quality of the freeway level service and infrastructure is poor. Similarly, an important local bus route (Route 21) operates along Lake Street with designated stops on the 8-foot-wide sidewalks under the bridge.

The neighborhoods near the Lake Street corridor include several buildings of historic interest, along with many modern buildings that displaced the historic streetscape. The Healy Block Historic District, located at the southeast corner of I-35W and 31st Street, contains a collection of homes with Queen Anne style architecture. Most of these houses were built by T.P. Healy between 1886 and 1889.

Midtown Greenway—In the late nineteenth century, the railroad line along 29th Street was lowered to reduce the numerous at-grade crossings. This required building a series of bridges for the local road crossings of the rail corridor, now known as the Midtown Greenway. The railroad use of this route declined over the years and the tracks were removed by 2000 when Phase 1 of the Midtown Greenway opened as a bicycle and pedestrian trail.

In 2005, the Midtown Greenway was put on the National Register of Historic Places as the Chicago, Milwaukee, and St. Paul Railroad Grade Separation. The historic district, located between Hennepin Avenue and Cedar Avenue, has 26 historic bridges. The Midtown Corridor Historic Bridge Study, completed in 2007, addressed potential repair or rehabilitation limitations for the historic bridges and effects of additional bridge removals on the historic district. The Stevens Avenue South Bridge (Bridge No. L8910) over the Midtown Greenway is the one original bridge located near to the current project area. It was built in 1914 and is one of the 26 historic bridges crossing the Greenway. The Stevens Avenue South Bridge is 200 feet west of the current I-35W bridge, and would be next to the future access ramp from southbound I-35W to Lake Street. The 2nd Avenue South Bridge (Bridge No. 27648), located immediately east of I-35W, was built in 1982 is not a historic structure. This 2nd Avenue South Bridge will be removed, with its function to be partially replaced by the future access ramp from northbound I-35W to 28th Street.

There is currently no access point to the Midtown Greenway from the local streets for a quarter mile east and west of I-35W. The closest access to the trail to the west is about 1,300 feet from I-35W at Nicollet Avenue S. To the east, the closest access is an at-grade roadway at 5th Avenue S.



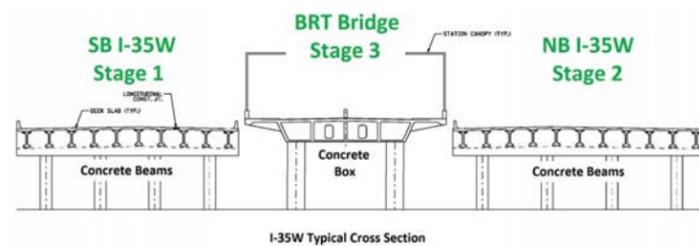
Existing I-35W bridge over Lake Street (looking east)



Stevens Avenue Bridge over the Midtown Greenway, with the I-35W bridges in the background (looking east)

Transit station design principles, criteria, and the preliminary design process—Many design criteria and objectives were identified and addressed in developing recommendations for the location and design of improvements to the I-35W Lake Street Bridge and transit station environment, including these:

- Provide an attractive architectural space underneath the bridge, especially over the pedestrian/plaza space
- Provide for connections and smooth movements for all transportation modes
- Provide comfortable and safe/secure spaces for waiting passengers
- Exhibit genuine bridge/structural forms – avoid or limit nonstructural elements
- Develop a project that reflects and connects the community, with positive impacts and potential to accommodate growth
- Provide for penetration of natural daylight near the middle of the structure
- Create a unique space in the middle of the structure to define the station entrance; avoid or minimize piers/columns in front of the station entrance
- Create pedestrian-scaled, pedestrian-oriented spaces at the street level below the bridge
- Provide for ease of infrastructure inspection and maintenance



Cross section of proposed bridge types, I-35W at Lake Street looking north

These design principles and criteria were identified through some of the first meetings and discussions with the PAC and through project development steps in coordination with the MnDOT Bridge Office and other project owners and designers. By early-to-mid 2012 (more than a year into the design process), the design team had also completed cost and constructability analyses, including the anticipated timeframes and impacts for the construction of varied bridge types. When these additional studies and criteria were combined with the issues listed previously, decisions were reached on the bridge types to support the in-line BRT station in the middle of I-35W, as well as for the southbound and northbound I-35W roadways. The recommendations established the basic layout

of the bridges over Lake Street, which have been integrally designed with the transit station. The recommended bridge types are:

- BRT bridge: cast-in-place concrete box
- I-35W bridges (southbound and northbound): prestressed concrete beams

The bridge-type decision-making considerations and recommendations were shared with the PAC in July 2012. In general, PAC members and other stakeholders expressed support for the most timely and efficient construction process while also satisfying the design principles and criteria.

Based on the design criteria, the middle BRT concrete box girder bridge, which helps define the core of the transit plaza space beneath I-35W, was selected primarily because of its superior performance given expected loads—including the dead load of the large canopy structure over the passenger platforms on the bridge deck. At the Lake Street level, this bridge type also provides a favorable visual quality outcome because the concrete box superstructure and the transit station lobbies are inherently architectural in form. The middle box girder bridge, in addition to having a smooth arched “ceiling,” will present itself higher than the southbound and northbound girder bridges. Therefore, evaluations of transit station plaza spaces underneath I-35W create a balance between the core transit station function of the middle box-girder bridge and the transitional spaces of the outside precast-beam bridges. Additionally, gaps to let daylight in between the bridges have been maintained throughout the design process.

Transit station High Quality Connection to the Midtown Greenway—The early design process considered varied locations for the transit station, but settled on a station location at Lake Street based on a crescent-shaped strip of I-35W right-of-way along the west side of the freeway next to Stevens Avenue (referred to as the “High Quality Connection”). With a distance of about 700 feet between Lake Street and the Midtown Greenway, this land area provides enough space to develop a functional and attractive connection for both bicyclists and pedestrians. Sensitivity to historic resources was a high priority in the High Quality Connection design due to the historic nature of the Midtown Greenway. The High Quality Connection will be integral to both current and future uses of the Midtown Greenway, including the potential for transit service.



Visualization of the proposed I-35W bridges over Lake Street looking east

1.2.1.2 Segment Design Components

Transit station in the median of I-35W at Lake Street with pedestrian/bicycle connections to the Midtown Greenway—The transit station will include connectivity to both Lake Street and the Midtown Greenway bicycle-pedestrian trail (the High Quality Connection). The proposed Lake Street bridges will replace MnDOT Bridge No. 9733 and will carry southbound and northbound I-35W traffic via two three-span bridges (each bridge having 85-foot/140-foot/85-foot spans) with prestressed-concrete-beam superstructures. These bridges will carry the mainline I-35W traffic on the outsides of the transit station bridge, which is proposed as a haunched concrete box superstructure. This middle bridge will carry bus traffic and support a freeway-level transit station canopy. The middle bridge thus defines the “core” of the proposed transit station, with outdoor and indoor plaza and lobby space focused in this central area. In contrast, the outside bridges define transitional spaces between the transit station lobbies and the outsides of the bridge extending east-west along Lake Street.

For purposes of this VQM, there are two types of space in the areas below the three parallel bridges:

- **Plaza spaces**—The two plaza spaces are below the end spans of the bridges (spans 1 and 3), south and north of Lake Street. The plaza spaces include large pedestrian circulation areas and lobby structures below the middle bridge, with indoor stairs and elevators to transition passengers between the Lake Street (local bus/street) level and the freeway-level bus platform.
- **Lake Street space**—The Lake Street space will be a “street-under-freeway” setting, except that it will also define the interface between the transit station elements and Lake Street itself (including the Lake Street bus stops and plaza spaces).

New Lake Street and 28th Street freeway access ramps and new bridges—Long-planned concepts for this area have included new freeway access ramps between Lake Street and I-35W to/from the north. The existing freeway and ramp configurations do not provide these connections, which will include a southbound I-35W exit ramp to Lake Street. (A northbound I-35W entrance ramp from Lake Street was also seriously considered, but is not proposed for the current project development process.) A northbound I-35W exit ramp connecting to 28th Street has also been planned. Design development for these access ramps has required consideration of new bridges over the Midtown Greenway and replacement of the 28th Street Bridge (Bridge No. 27869) over I-35W. The current 2nd Avenue S. Bridge (Bridge No. 27648) over the Greenway will be removed based on the new I-35W northbound exit ramp providing a direct connection to 28th Street.



Visualizations of the proposed I-35W bridges over Lake Street looking west and from beneath the BRT bridge

Bridge replacements and new southbound ramp bridge—The project components at Lake Street and the Midtown Greenway also required investigation of bridge replacement designs for:

- I-35W bridges over 31st Street (replacement of Bridge No. 9731)
- I-35W bridges over the Midtown Greenway (replacement of Bridge No. 27867)
- 28th Street over I-35W Bridge (Bridge No. 27869)
- I-35W southbound exit ramp bridge over the Midtown Greenway (a new bridge that will bring exiting traffic to Lake Street via Stevens Avenue)

The project’s preliminary engineering plans and Chapter 2 of this VQM provide guidance for these bridges in the Lake Street/Greenway segment.



Gateway view of downtown Minneapolis (with Franklin Avenue Bridge crossing the freeway)

1.2.2 South 28th Street To Franklin Avenue Segment

1.2.2.1 Segment Characteristics and Objectives

The project’s focus for this segment is the rehabilitation of I-35W to address aging infrastructure and to connect geometrically to the transit station at Lake Street, to the south. The visual character of the area is strongly influenced by the presence of I-35W, with retaining walls and noise walls separating views of the freeway from views of the surrounding area. Noteworthy features of this area include:

- Gateway views of downtown Minneapolis from northbound I-35W and TH 65 (the downtown exit roadway)
- A series of bridges over the freeway including local street crossings, a pedestrian/bicycle bridge near 24th Street, and the southbound I-35W Braid Structure, which is tied to the I-94 interchange/commons to the north

Like other areas adjacent to I-35W, this segment is bound by many historic features. For example, the nearby Washburn-Fair Oaks Historic District (west of I-35W), contains many elegant homes built by prominent Minneapolis developers. These fashionable residences of varied architectural styles were built during the late 19th and early 20th centuries. However, environmental impact analyses completed to date for the historic district indicate that it is outside of the Area of Potential Effect (APE), likely because of the visual separation between the freeway and most of the local development around the freeway.

The project’s proposed changes to this area include replacement of all bridges, geometric adjustments to the freeway, and replacement of retaining walls and noise walls. The visual quality objectives for this segment are to achieve good continuity based on the recently reconstructed design elements on I-35W to the south (that is, identical or similar aesthetics treatments for retaining walls, noise walls, and local street bridges).



Views of I-35W and the pedestrian bridge near 24th Street, looking south (above, with the Braid Bridge visible under the pedestrian bridge) and looking east (below) across I-35W at the pedestrian bridge



Visualization of the proposed replacement of 24th Street pedestrian/bicycle Bridge

1.2.2.2 Segment Design Components

In addition to the proposed general rehabilitation of I-35W in this segment, the following bridges will need to be replaced.

Removal of the I-35W southbound Braid Bridge and related geometric adjustments—

The Braid Bridge (Bridge No. 27871), which opened in 1967, is part of the I-35W mainline (southbound only). It crosses over the northbound I-35W freeway exit roadway (TH 65) that provides access to downtown Minneapolis and to the I-94 westbound flyover. The two-lane Braid Bridge is 363 feet long, carries about 50,000 vehicles per day, and has both structural and functional deficiencies. It has a bridge sufficiency rating of 44.1. The Braid Bridge is located beneath the pedestrian bridge near 24th Street; because of this, removal of the Braid Bridge—currently programmed for 2018—will impact the replacement designs for the 24th Street pedestrian/bicycle bridge. In fact, the preferred project design proposes to relocate the braid design well to the north near I-94, which will allow a lowering of the 24th Street pedestrian/bicycle bridge.

Local street grade-separated bridge replacements—This project segment will also include bridge replacement designs for:

- 26th Street over I-35W Bridge (Bridge No. 27870)
- Franklin Avenue over I-35W Bridge (Bridge No. 27872)

These bridges will receive treatments similar to the 28th Street overpass to the south. The aesthetics will incorporate similar piers, abutments, railing details, street lighting and other features as specified in Chapter 2.

24th Street pedestrian/bicycle bridge—The pedestrian/bicycle bridge at 24th Street (Bridge No. 27868) will be impacted by the reconfiguration of I-35W. Concepts for replacing this bridge, which is integral to traffic flowing in and out of the local neighborhoods, have been developed and coordinated with the PAC and other stakeholders. The aesthetics of the pedestrian bridge will incorporate retaining wall treatments, railing details, street lighting, and other features as specified in Chapter 2.

1.2.3 I-94 Segment

The I-94 segment addresses the portion of the I-35W project corridor that connects with I-94. This area includes I-35W north of Franklin Avenue and the roadways and ramps that provide connections between these major freeways, as well as provide route continuity along each corridor. Given these features, the area is characterized by complex freeway geometrics, many structures, a large footprint, and substantial identity with downtown Minneapolis.

1.2.3.1 Segment Characteristics and Objectives

Similar to the South 28th Street to Franklin Avenue segment, the project's focus for the I-94 segment is the rehabilitation of I-35W to address aging infrastructure and to connect geometrically with the rest of the system. The visual character of the area is strongly influenced by system interchange features, including bridges, tunnels, and roadway/ramp curves and weaving segments. Contextually, freeway drivers in this area must give significant attention to their maneuvering through parts of the interchange, which exhibits the highest daily traffic volumes found in the state of Minnesota.

Noteworthy features of this area include:

- Complex freeway geometrics in a limited space, supported by major walls, bridges, and tunnels
- The I-94 westbound flyover, connecting from I-35W northbound (this flyover needs to be replaced, as described in more detail in Section 1.2.3.2)
- Highly dense surrounding urban development, including large buildings near the freeway corridor

The historic features near this segment include the Stevens Square Historic District, southwest of the I-94/I-35W interchange. This district is comprised of brick apartment buildings and single-family homes surrounding Stevens Square Park.

The project's proposed changes to this area include replacements for many bridges and structures, geometric adjustments to the freeway, and replacement of several walls and noise barriers. Because this area comprises the north end of the proposed project addressed in this VQM, there are limitations to components to be replaced. The level of preliminary engineering design completed to-date for the I-94 segment is minimal, with the main focus of the design work having been on freeway geometrics and related traffic operations. As a result of this work, two substantial geometric changes are proposed for this area:

- The I-94 westbound flyover is planned to be reconstructed to enter I-94 westbound on the left rather than on the right as it does currently
- The braid for I-35W southbound is planned to be shifted north to the I-35W/I-94 interchange area. Although access is currently provided via the Braid Bridge well to the south, the new approach is designed to pass below TH 65 using a tunnel or a tunnel-like bridge



View along westbound I-94 passing under the I-94 westbound flyover and the TH 65 bridge

The visual quality objectives for this segment will be to achieve good continuity with both existing infrastructure and with proposed reconstructed design elements on I-35W to the south (identical or similar aesthetics treatments for new retaining walls and noise walls, and on the area's bridges and other structures). Because the level of preliminary design completed to date for this segment has been minimal, and because of the area's complexity, the design guidance provided in Chapter 2 is conceptual and will require refinements.

1.2.3.2 Segment Design Components

The following structures will need to be designed for replacement or as new components in the I-94 segment.

Replacement/reconfiguration of the I-94 westbound flyover, from I-35W northbound—The I-94 flyover entrance (Bridge No. 27842), built in 1966, is a system ramp connection from I-35W (TH 65) northbound to I-94 westbound. This bridge includes a 534-foot-long concrete box superstructure and carries about 20,000 vehicles per day. The bridge is a regular site for traffic congestion and the congestion at the entrance (on the right side of I-94) is often a contributing factor to crashes along I-94 westbound. It has both functional and structural deficiencies and had a sufficiency rating of 64.8 in 2008. The flyover is proposed for replacement with a shift of the I-94 entrance from the right side to the left side. The engineering design to date is conceptual only, leaving the superstructure type (steel or concrete) undecided. Chapter 2 provides guidance on possible bridge pier shapes and surface treatments.

Braid structure (to replace and functionally relocate Bridge No. 27871)—As previously noted, the new approach to braid southbound I-35W (Bridge No. 27871) is to pass below TH 65 using a tunnel or a tunnel-like structure. The proposed structure will be visible to freeway users only. Chapter 2 provides minimal guidance on the new braid structure, however freeway facing wall treatments similar to that in the corridor will be applied to this structure.

TH 65 bridge over I-94—The TH 65 bridge (Bridge No. 27843) has also been identified for replacement due to geometric changes, but it has not been addressed within the scope of the current preliminary design process. Replacing this bridge (about 230 feet long on two spans) does not raise any particular visual quality issues because it is a utilitarian structure that is integral to the interchange and it should thus be replaced in kind or with identical or similar aesthetic treatments to other new structures. Because there is no preliminary design for this structure, Chapter 2 provides no specific design guidance.

1.3 Visual Quality Design Elements, Public Art, and Next Steps

1.3.1 Visual Quality Design Elements

The following visual quality elements are the features of the project that affect the appearance of the various project components:

- Roadway
- Bridges/Tunnels
- Transit facilities
- Retaining walls
- Noise walls
- Slope protection
- Vegetation/landscaping
- Signing and lighting

This VQM documents the requirements and recommendations for these visual quality elements by segment. Not all elements will be applicable in every segment. The discussion of each segment makes clear which elements apply.

1.3.2 Public Art Framework and the Need for Further Planning and Coordination

The visual quality process for this project included development of a Public Art Framework, which was published in a separate but related document. The Public Art Framework is intended to guide public officials, architects, landscape architects, artists, engineers, and the public in creating a high-quality, socially relevant, and meaningfully inclusive artistic environment in and around the I-35W-Lake Street Transit Station. The process should also include participation by MnDOT's Cultural Resources Unit (CRU).

The Framework is intended to be implemented incrementally as the Transit/Access Project is designed and constructed. It identifies ten public art program themes:

1. Landscape Features
2. City History
3. Neighborhood History
4. Community Portraits
5. Cultural Objects and Craft Traditions
6. Wayfinding
7. Sustainability
8. Artist Integrated Space
9. Light
10. Movement

The Public Art Framework also identifies “Areas of Opportunity” for public art at the Lake Street Transit Station and in the surrounding area:

- Bridges and walls
- Transit station
- Plaza
- The High Quality Connection

The Framework identifies the public art opportunities for the setting of the Lake Street Transit Station. This is the most important project opportunity for public art because of its connectivity with local land uses and with nonmotorized travelers. However, the Framework’s principles could also be applied elsewhere, with the overall vision to engage multiple artists to develop art for many locations.

As previously noted, project implementation will require continued interdisciplinary design team work with stakeholders, likely maintaining elements from the process used to date with some focus areas added. The approach and structure for implementing public art, and to continue related engagements with the public and agencies, will be determined during the final project design and construction stages.

The Public Art Framework was developed in a manner consistent with the City of Minneapolis public art process. And, in keeping with the City’s process, the Framework documentation outlines an artist selection process. The selected artist(s) will be required to work closely with the engineering design team and stakeholders. Chapter 5 of the Framework (Implementation Process and Phasing) outlines the public art process in three phases:

- Phase I: Preliminary Design (reference to current work, including this VQM)
- Phase II: Final Design and Construction Documentation
- Phase III: Fabrication and Installation

1.3.3 Next Steps

Chapter 2 provides varied levels of guidance on visual quality elements for the segments previously described. The scope of the VQM is focused on civil elements and structures and is fairly detailed for some project components (for example, the Lake Street bridges) and is more general for others. Note that this VQM does not address the Lake Street Transit Station architectural details (the lobby at the Lake Street level and the canopy at the freeway level) because those elements are addressed in separate, detailed architectural plans.

The anticipated next steps for project development include the detailed engineering design that could incorporate the guidance provided in this VQM. Departures from specific parts of this VQM may also be proposed through the final design process, provided that participating agencies and neighborhood stakeholders with background in project development are included in the decision-making process.

These requirements provide the design guidance for professionals engaged in the final project design and construction. Other supporting information includes the preliminary engineering design plans, EA, Public Art Framework, and PAC meeting summaries, as well as many other project-related documents.

Over 3-years of PAC time and effort has established a set of expectations for Visual Quality, however policy makers have not finalized the assignment of ownership, operations and maintenance of project components. Consequently, departures from these design requirements may need to occur. Should departures be necessary, they should be considered through a thoughtful and inclusive process.

2.1 Purpose of the Design Requirements Chapter

This chapter identifies the minimum design requirements and guidance for the project based on visual quality goals, including guidance on how to proceed through final design and construction. With Chapter 1 providing general support and background (including context, objectives, criteria, and visualizations), the design sheets and guidance presented here show the project design requirements in greater detail.

The design requirements are based on interdisciplinary design team collaboration, including work with the PAC and other stakeholders, as noted in Section 1.1.2. The multi-year process of designing project components with regular input from stakeholders helped the design team significantly to develop feasible civil engineering designs that express the desired and depicted aesthetics. Importantly, the project's design team and owning agencies have also taken care to ensure that aesthetics are integrated with the basic project infrastructure for durability and ease-of-maintenance. The requirements in this chapter provide design guidance for the professionals engaged in final project design and construction, and provide reference documentation for project managers and stakeholders.

2.2 Design and Procedural Requirements

This VQM is supported substantially by the background information summarized in Chapter 1. Therefore, the design requirements and procedures to be followed through final project design and construction are not to be interpreted solely based on this volume. Other supporting information includes the preliminary engineering design plans, EA, Public Art Framework, and PAC meeting summaries, as well as many other project-related documents.

Stated in Chapter 1, but emphasized here as a requirement, project implementation requires continued work with stakeholders. For example, stakeholders will work with the commissioned artist(s) to address incorporating public art into the final project design. Updates or addenda to specific parts of this VQM may also be proposed and approved through the final design process, provided that knowledgeable stakeholders with background in project development are included in the decision-making process. Through all future stages of project development, this VQM will provide the baseline guidance for project design practices aimed at achieving the project's aesthetic intent.

2.3 Exhibits and Design Sheets

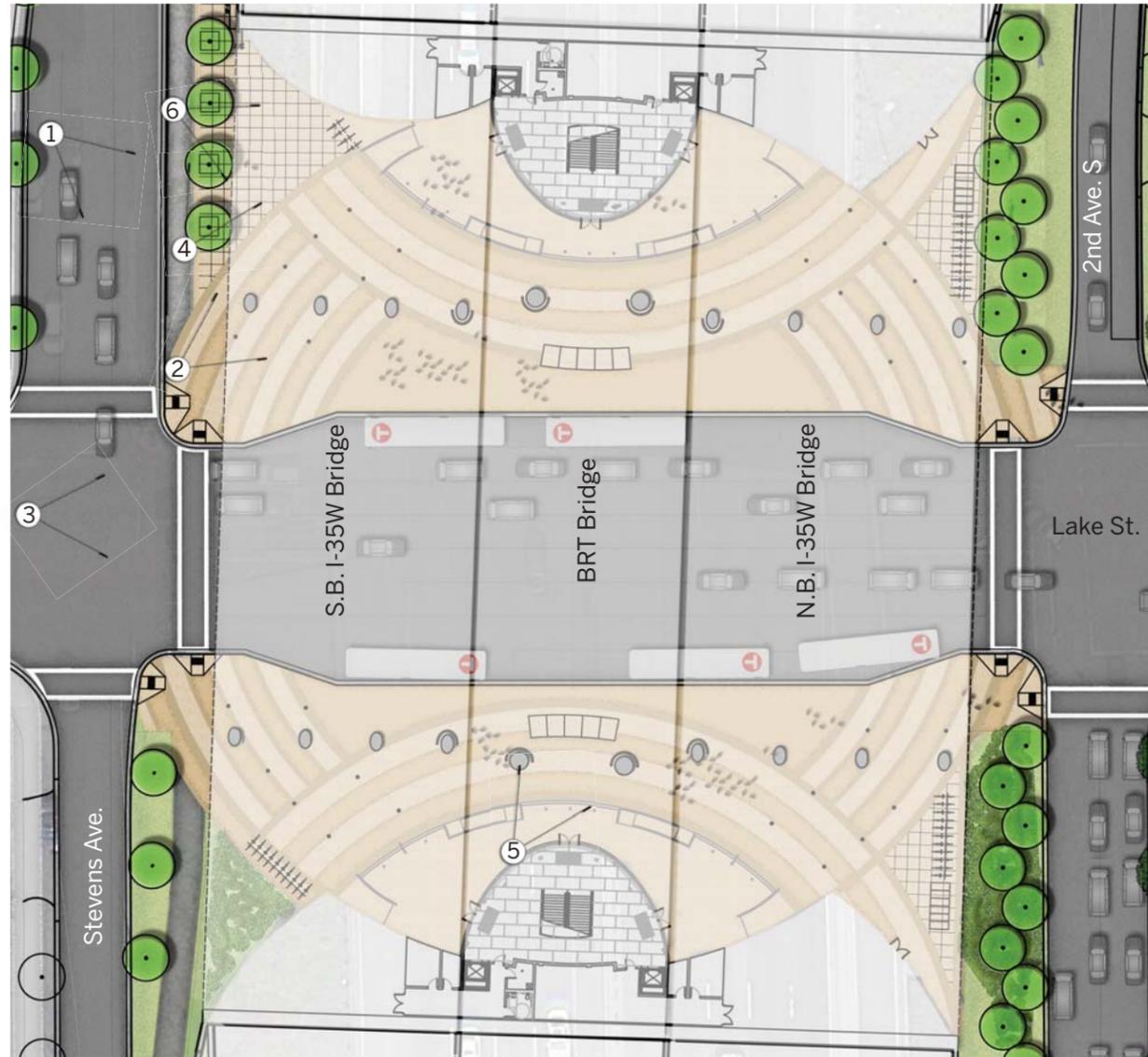
The exhibits/design sheets in this chapter comprise the detailed design requirements and guidance to achieve the aesthetic intent of the project. The sheets are presented roughly in order from south to north beginning at the "heart" of the project—the transit station at I-35W and Lake Street. The VQM requirements and guidance are specified on the sheets by both drawings and text. Some important overall guidance for the project, as an introduction to the sheets, is as follows:

- The separate concept layouts and preliminary engineering plans for the project are the critical background for the VQM and all sheets can be referenced to those plans.
- Most dimensions in the VQM are approximate and are provided to illustrate general proportions, relative scale, and desired shapes.
- Guidance for I-35W that can logically be repeated for multiple locations along project corridor is often implied and designers should consider such guidance applicable in cases where specific locations are not called out. For example, this guidance applies to retaining walls, new or reconstructed noise barriers, and local bridge railings visible from the freeway.
- As noted in Chapter 1, most engineering design detail has been applied to the Lake Street/Greenway segment, with considerably less site-specific detail applied to the north (the South 28th Street to Franklin Avenue and I-94 segments).

Bridges over Lake Street and Transit Plaza

Exhibit 2.1.1 - Plan View

The focal point of the Project is the in-line freeway level BRT Station over Lake Street. The adjacent S.B. and N.B. I-35W Bridges span Lake Street and the plaza spaces to the north and south.

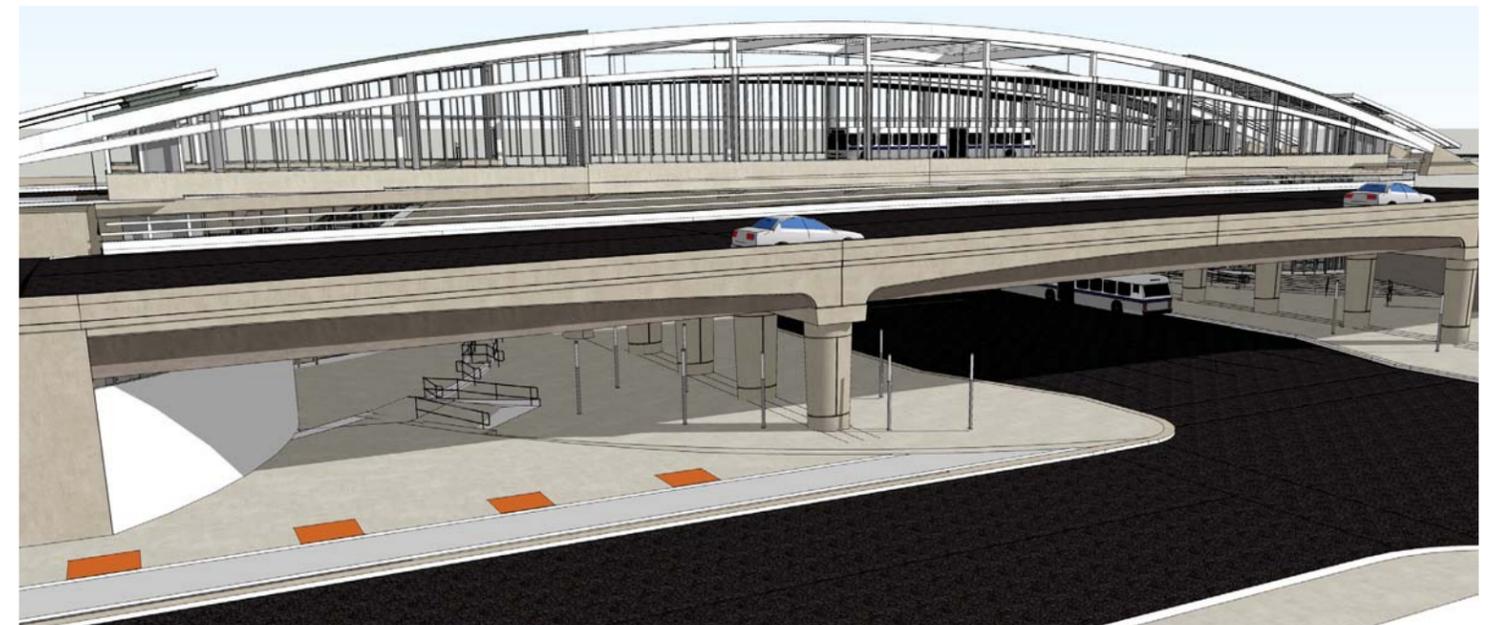


Plan View - Transit Plaza and Bridges over Lake St



Perspective View Key:

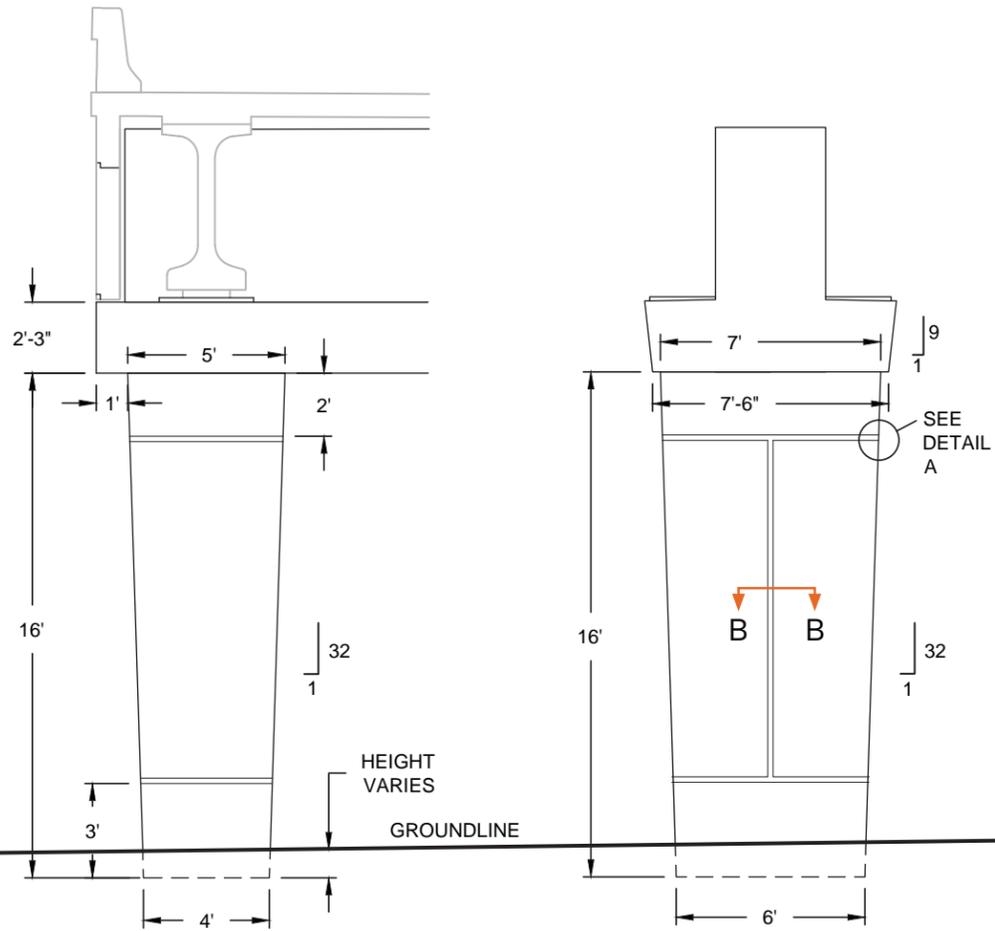
1. Exhibit 2.1.1
2. Exhibits 2.1.2, 2.1.4, 2.1.5, 2.1.6
3. Exhibit 2.1.7, 2.1.8
4. Exhibit 2.1.9, 2.1.10
5. Exhibit 2.1.13 (Top)
6. Exhibit 2.1.13 (Bottom)



Bridges over Lake Street and Transit Plaza

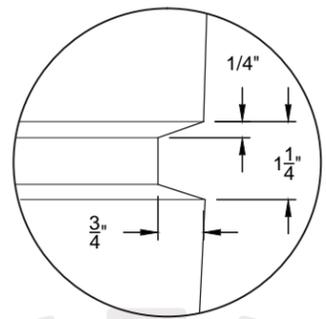
Exhibit 2.1.2 - Columns & Inverted T-Cap

The columns for the S.B. and N.B. I-35W Bridges over Lake St. shall be oval shaped with constant taper from top to bottom. To standardize the formwork required, the height of the tapered portion of the column can be the same for all columns regardless of the groundline to pier cap dimension. The inverted T-caps shall have a constantly sloped bottom surface from east to west edge, with varying height bridge seats to make up elevation differences of the beams in cross section.

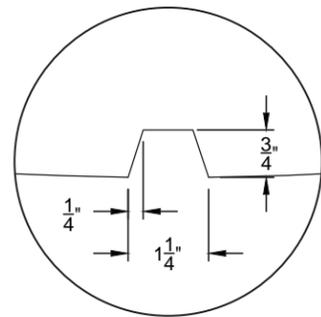


East / West

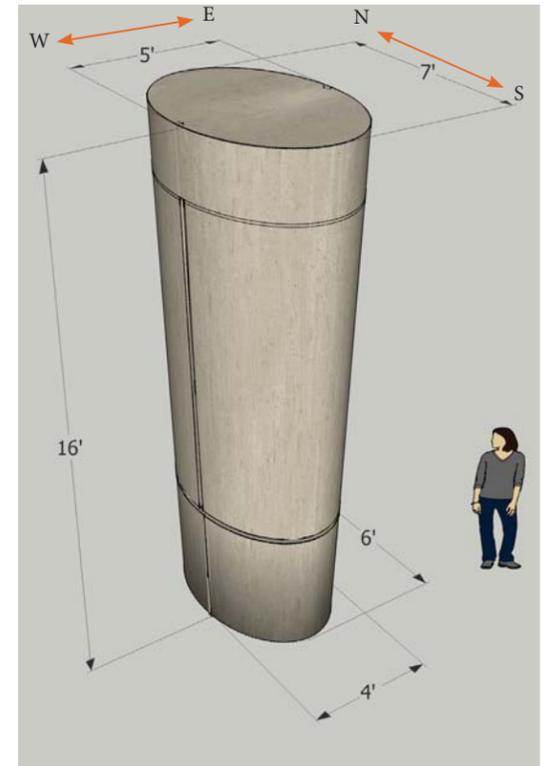
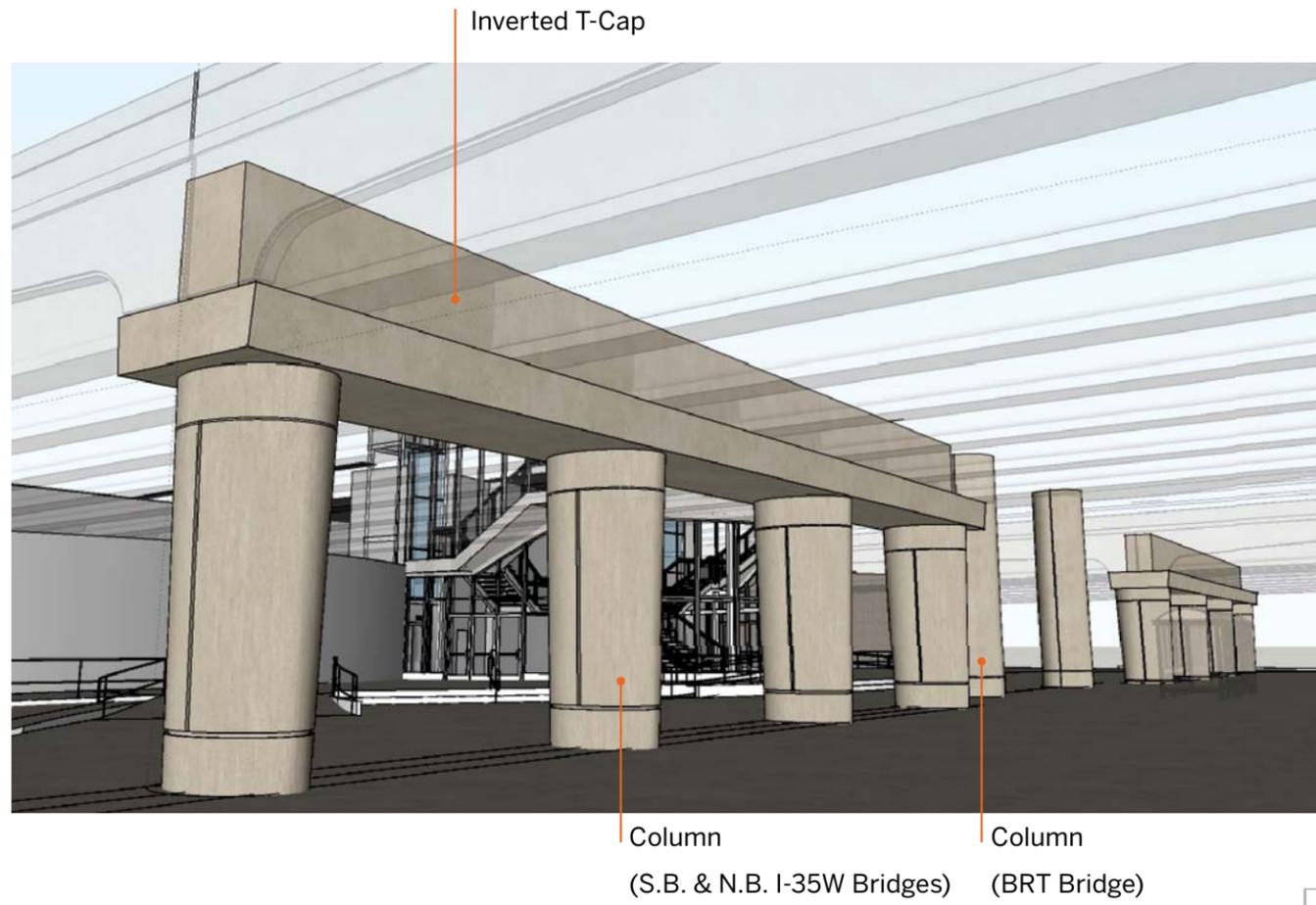
North / South



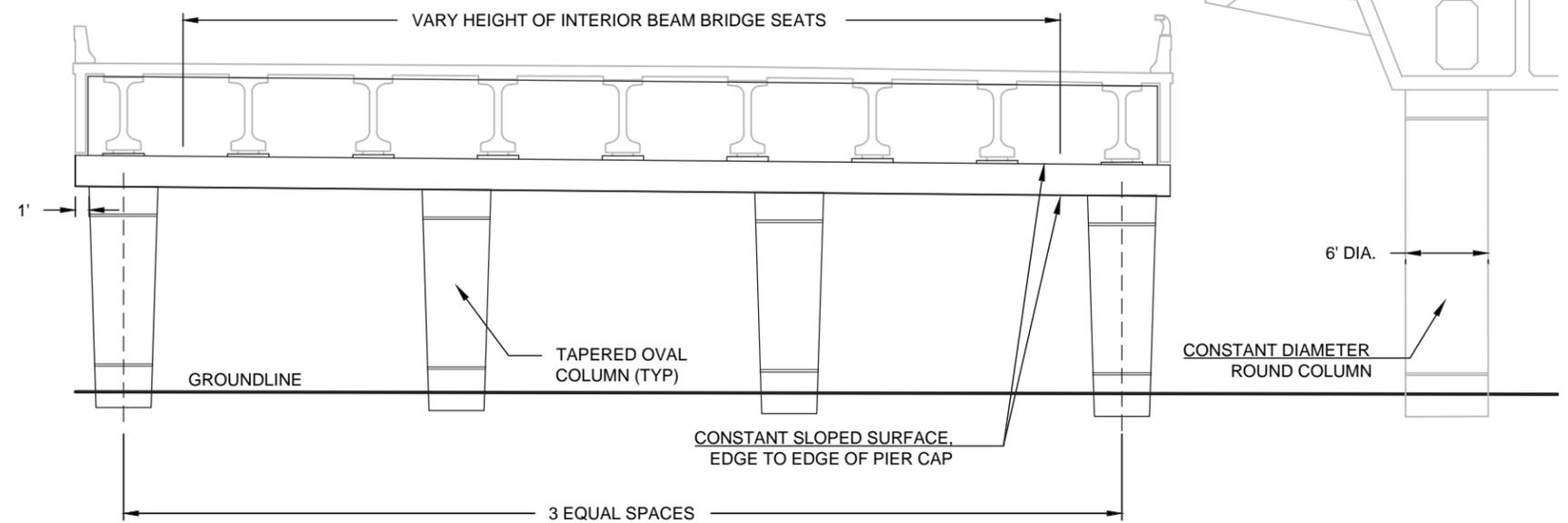
Detail A - Reveal



Section B-B - Reveal



Tapered Oval Column



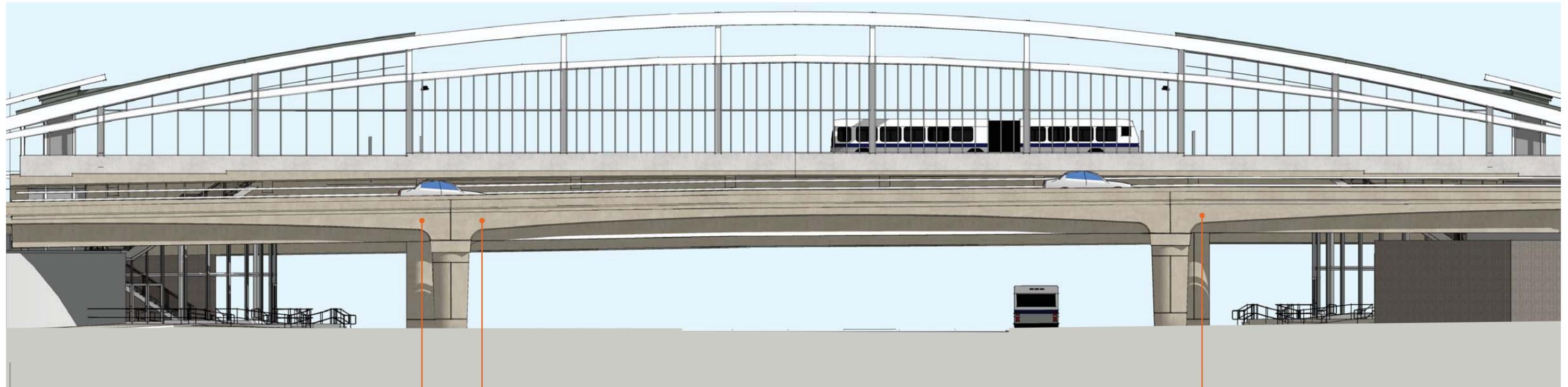
S.B. I-35W Bridge, looking North

Note: Dimensions shown are approximate to provide general proportions and relative scale for structural elements and other aesthetic details. Structural element sizes (column dia., cap depth, etc.) can be increased as necessary to meet final design capacity requirements (minimum dimensions shown).

Bridges over Lake Street and Transit Plaza

Exhibit 2.1.3 - Fascia Panels

The S.B and N.B. I-35W bridges over Lake Street shall have architectural fascia panels along east and west edges, on all three spans. The fascia panels have a shape that visually references the curvilinear roof form of the transit station above.

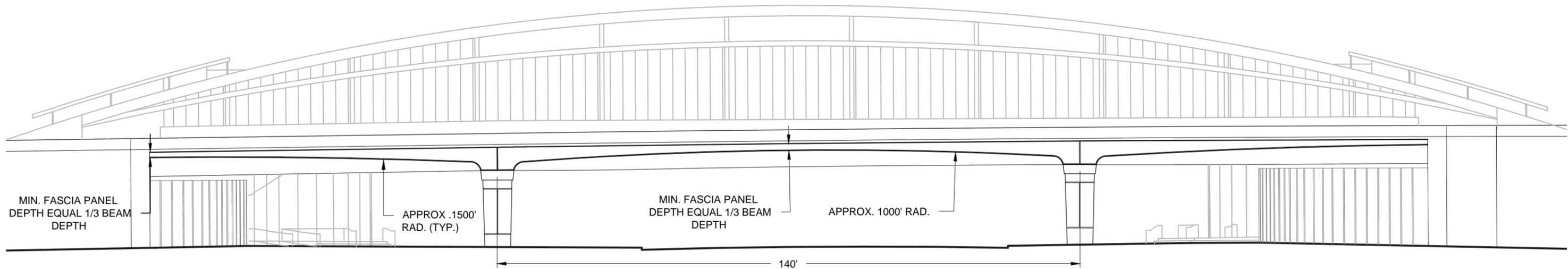


View looking east

Fascia Panel

Fascia Panel

Fascia Panel



MIN. FASCIA PANEL
DEPTH EQUAL 1/3 BEAM
DEPTH

APPROX. .1500'
RAD. (TYP.)

MIN. FASCIA PANEL
DEPTH EQUAL 1/3 BEAM
DEPTH

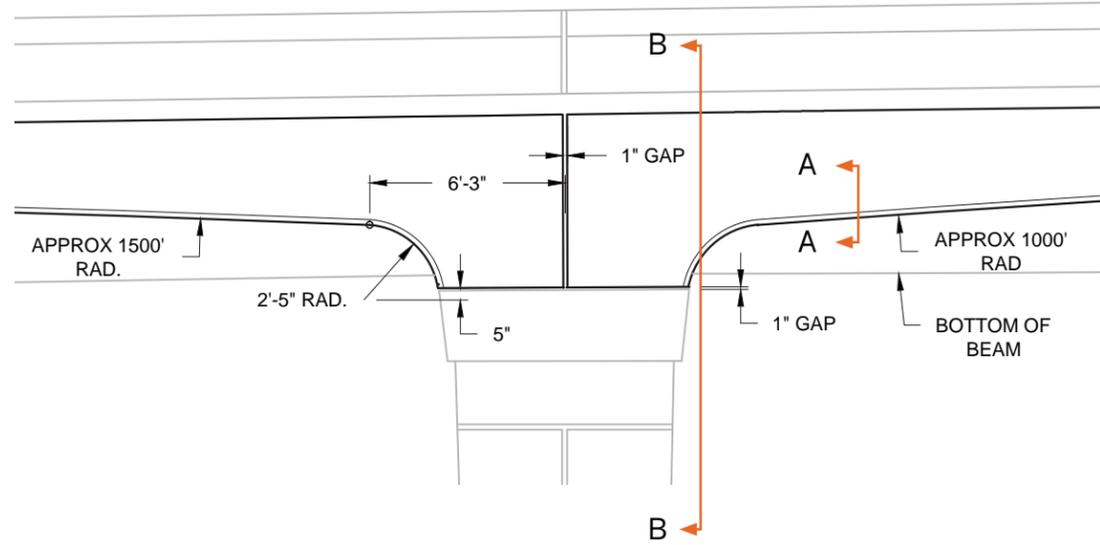
APPROX. 1000' RAD.

140'

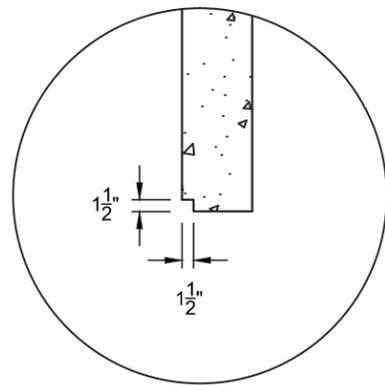
Bridges over Lake Street and Transit Plaza

Exhibit 2.1.4 - Fascia Panel Details

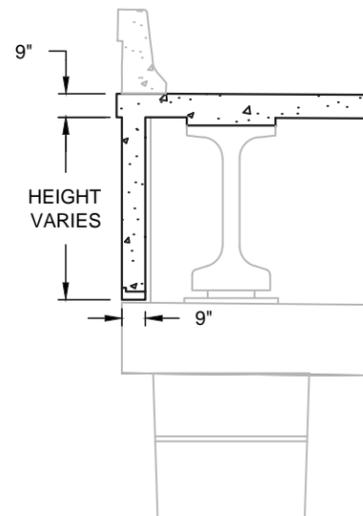
Fascia panels shall be constructed along the entire east and west edge of deck for both S.B. and N.B. Bridges over Lakes St. The concrete fascia panels are cast integral with the bridge deck. Additional details include a smaller radius at the pier with large radii elsewhere, and a chamfer along the bottom edge.



Fascia Panel Geometrics



Section A-A: Chamfer along Fascia Panel



Section B-B

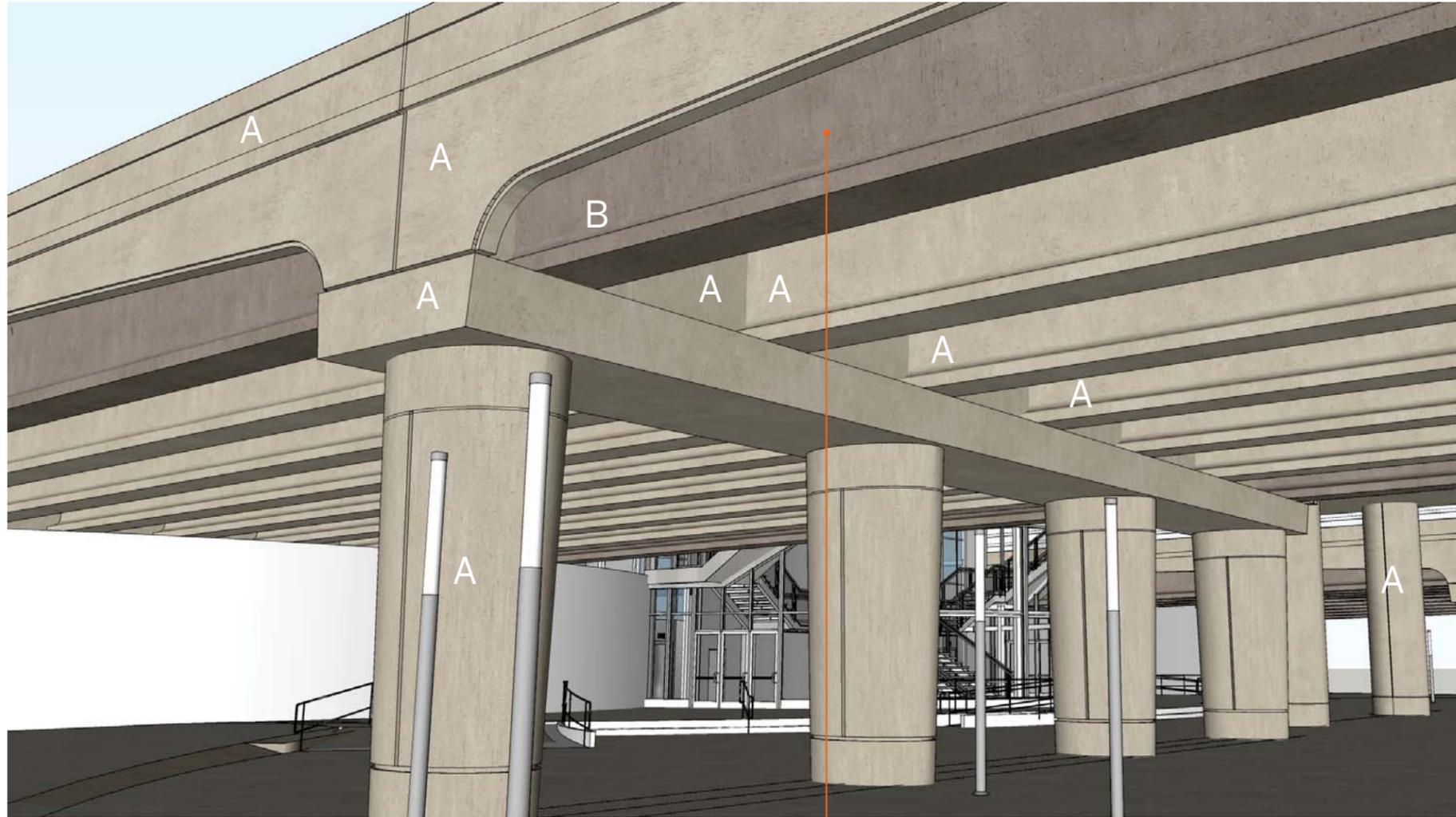


Note: Dimensions shown are approximate to provide general proportions and relative scale for structural elements and other aesthetic details. Structural element sizes (fascia panel thickness, etc.) can be increased as necessary to meet final design capacity requirements (minimum dimensions shown).

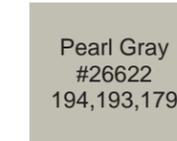
Bridges over Lake Street and Transit Plaza

Exhibit 2.1.5 - Special Surface Treatments

All concrete surfaces on the S.B. and N.B. Bridges visible from the Transit Plaza shall be coated with colored architectural surface finish as shown in details, including the underside of the bridge deck. The barriers shall be coated on all faces. The outside beams on both east and west edges of the S.B. and N.B. bridges shall have a darker color treatment to provide more contrast with the fascia panel.



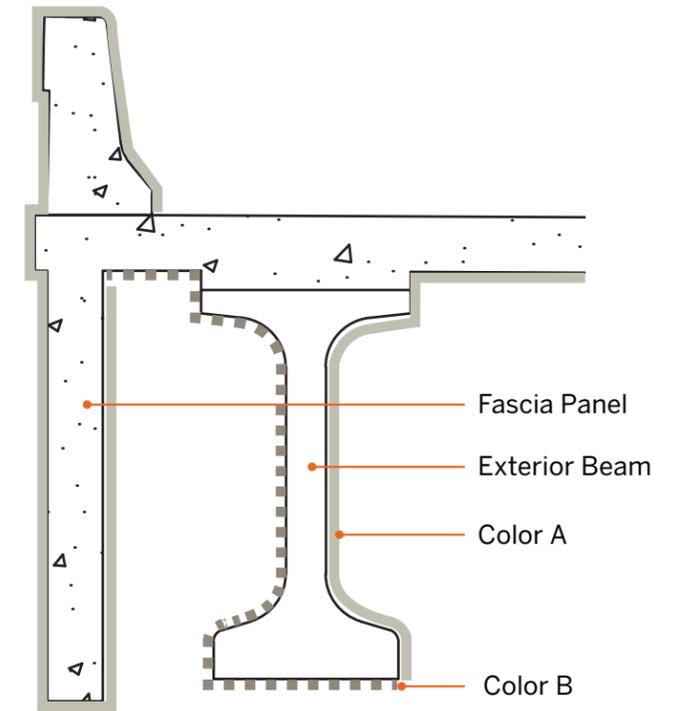
Exterior Beam Treatment:
Color B



Color A



Color B (Dashed)

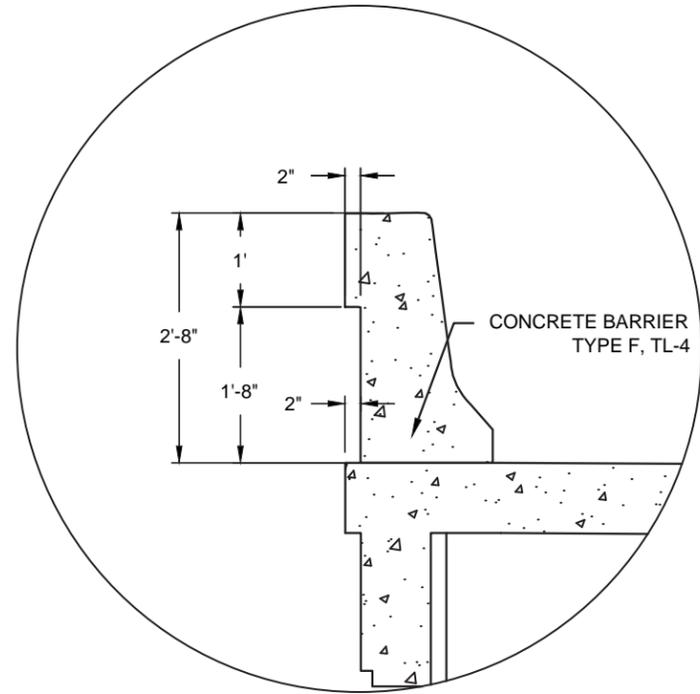


Partial Deck Section

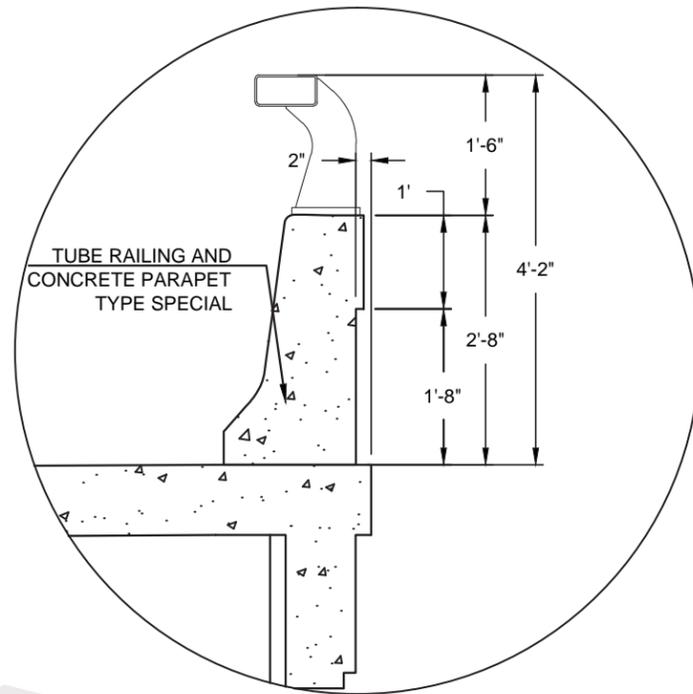
Bridges over Lake Street and Transit Plaza

Exhibit 2.1.6 - S.B. and N.B. Bridge Barrier Details

Two different barrier types shall be used on top of the mainline bridges over Lake Street. The barriers at the interior edge of the bridges against the transit station will be determined in final design in coordination with MnDOT and shall meet intrusion zone design requirements. One possible barrier type is shown below.



Exterior Barrier Detail



Example Interior Barrier

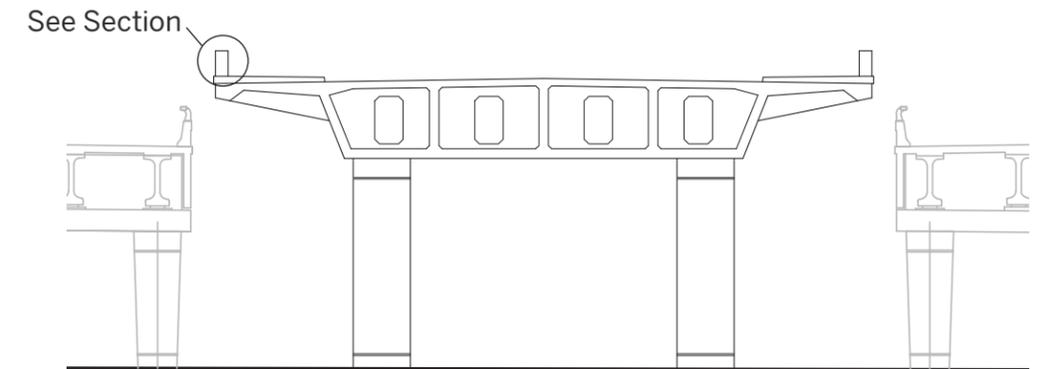


Barrier

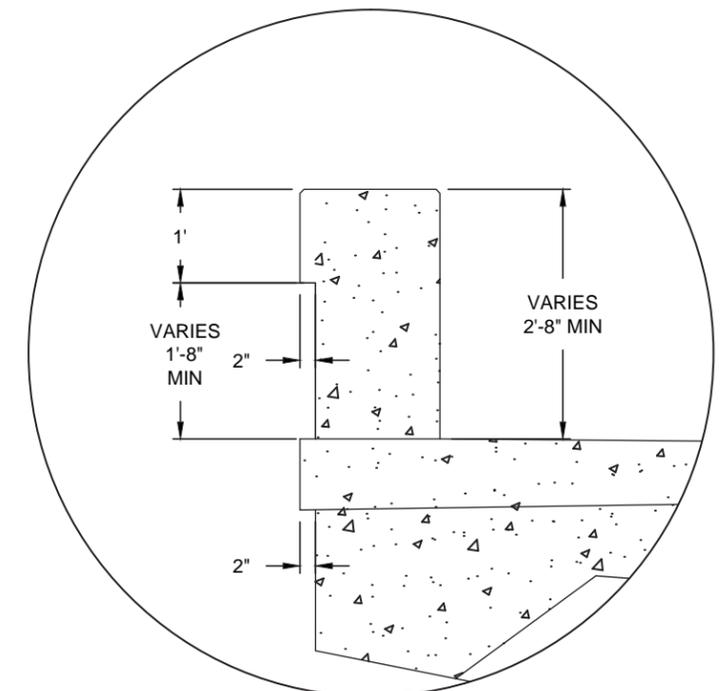
Bridges over Lake Street and Transit Plaza

Exhibit 2.1.7 - BRT Bridge Parapet Details

The parapet at the edge of the BRT bridge provides the base for the transit station. The outside face of the parapet shall have architectural treatments as shown below.



Section view of BRT Bridge



Parapet Section

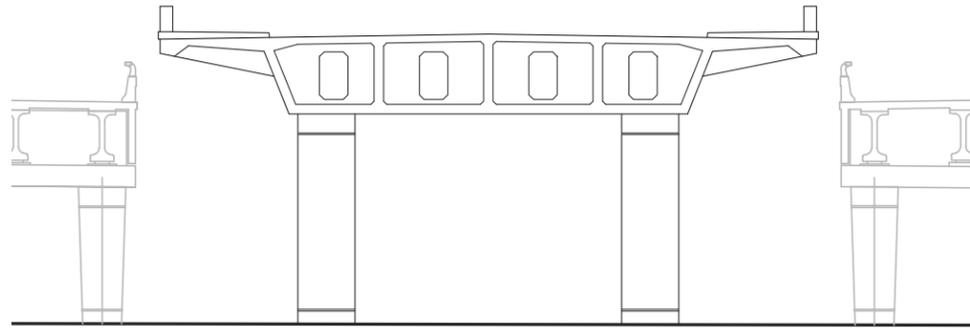


Parapet

Bridges over Lake Street and Transit Plaza

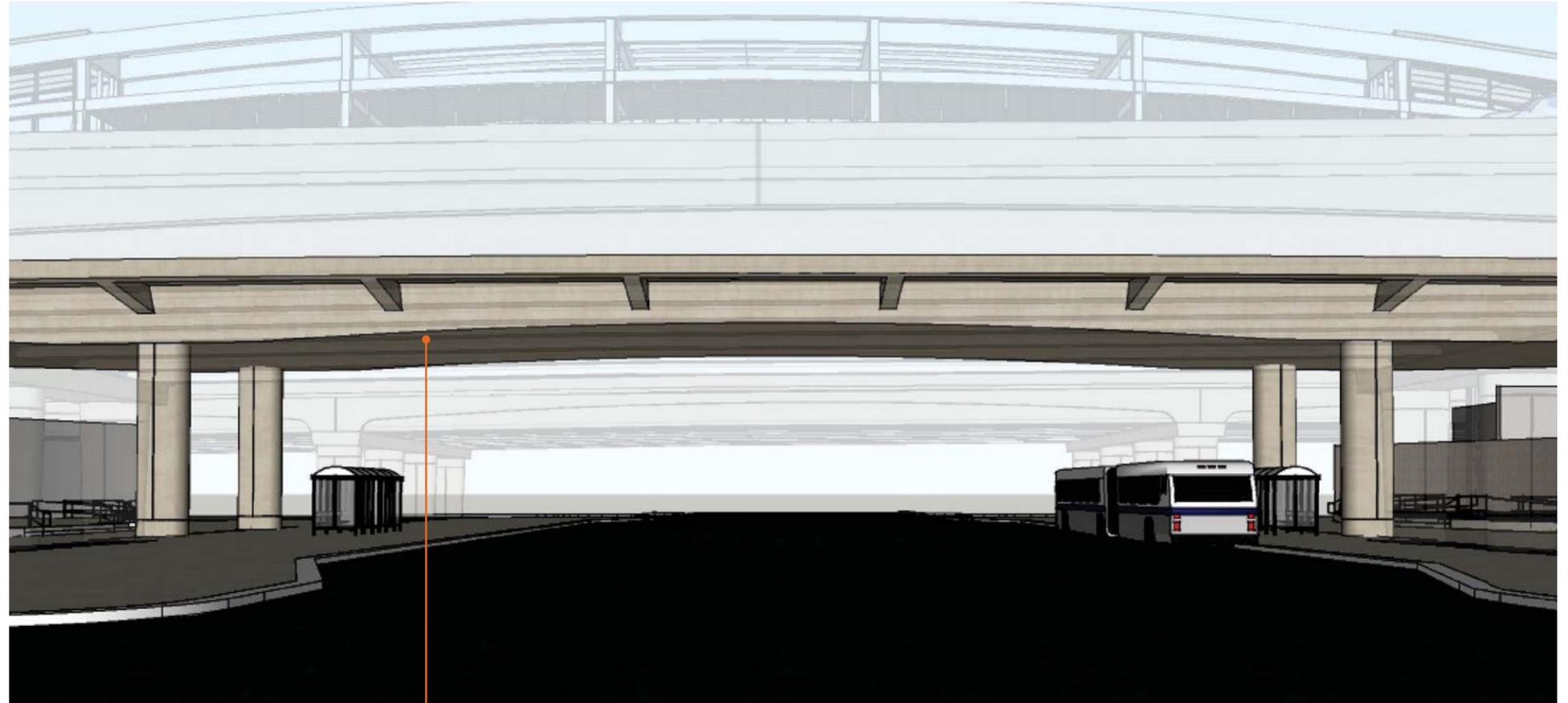
Exhibit 2.1.8 - BRT Bridge Haunched Concrete Box

The BRT Bridge will be a haunched concrete box with approximate shape as shown. Actual dimensions will be determined in final design. All concrete surfaces on the BRT Bridge visible from the Transit Plaza and Station Lobby shall be coated with Pearl Gray architectural surface finish. Parapet surfaces outside the Transit Station shall also be coated with Pearl Gray architectural surface finish.

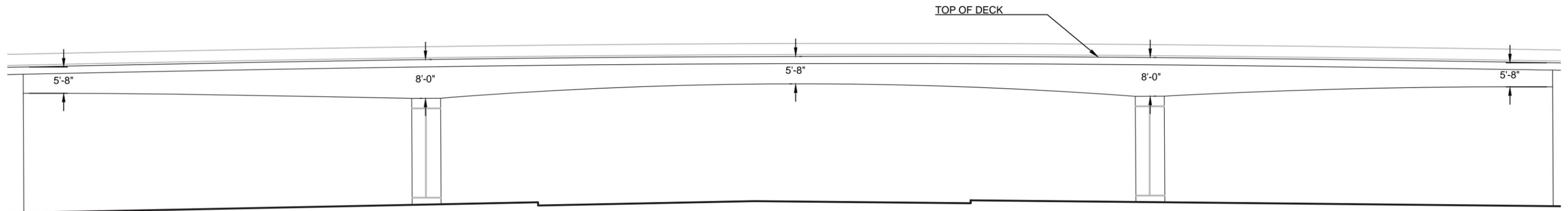


Section view of BRT Bridge

Pearl Gray
#26622
194,193,179



BRT Bridge



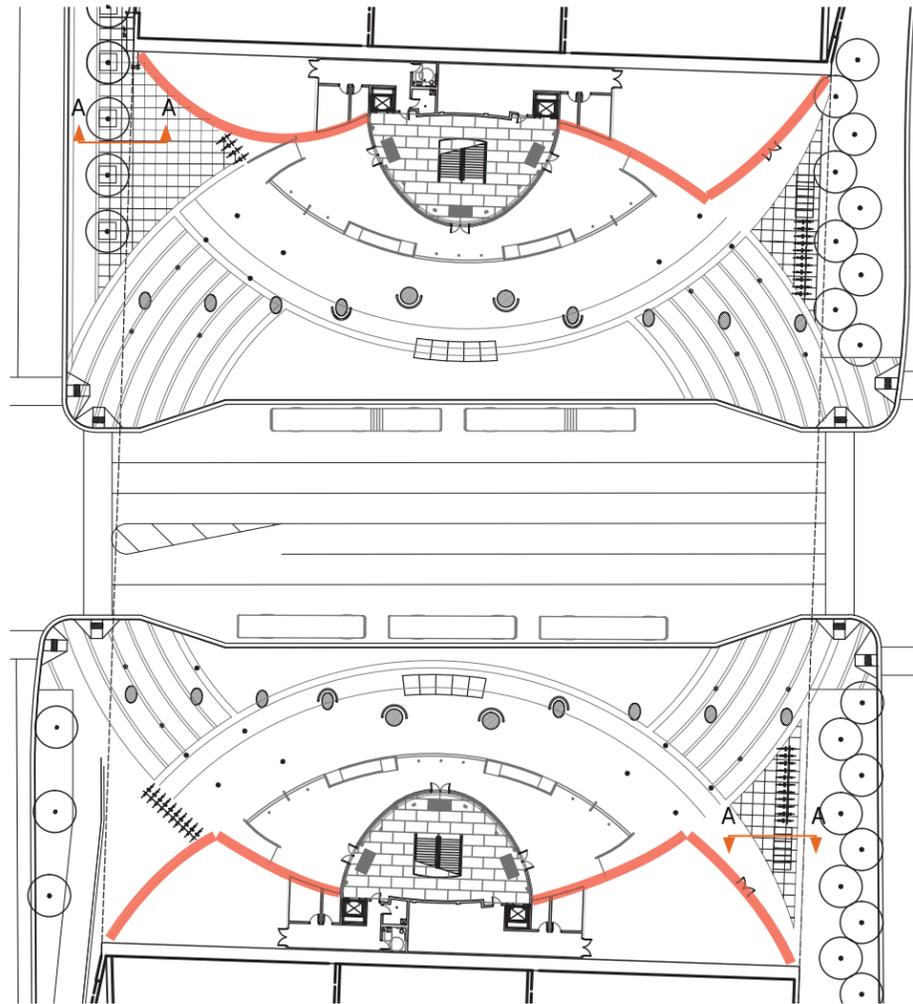
Elevation view of BRT Bridge

Note: Dimensions shown are approximate to provide general proportions and relative scale. Structural element sizes (concrete box depth, etc.) can be modified as necessary to meet final design capacity requirements (minimum dimensions shown).

Bridges over Lake Street and Transit Plaza

Exhibit 2.1.9 - Architectural Walls

The curved architectural walls in front of the abutments should receive a special wall treatment according to the public art framework plan. This surface treatment shall be complimentary with the treatment of adjacent retaining walls. Public art wall illustrations (see the Public Art Framework Plan in appendix) represent examples of how themes could be interpreted. This document assumes that a final concept will be developed with a public artist during final design.



Plan



Example Public Art Themes
(Refer to the Public Art Framework Plan in appendix for more detail)



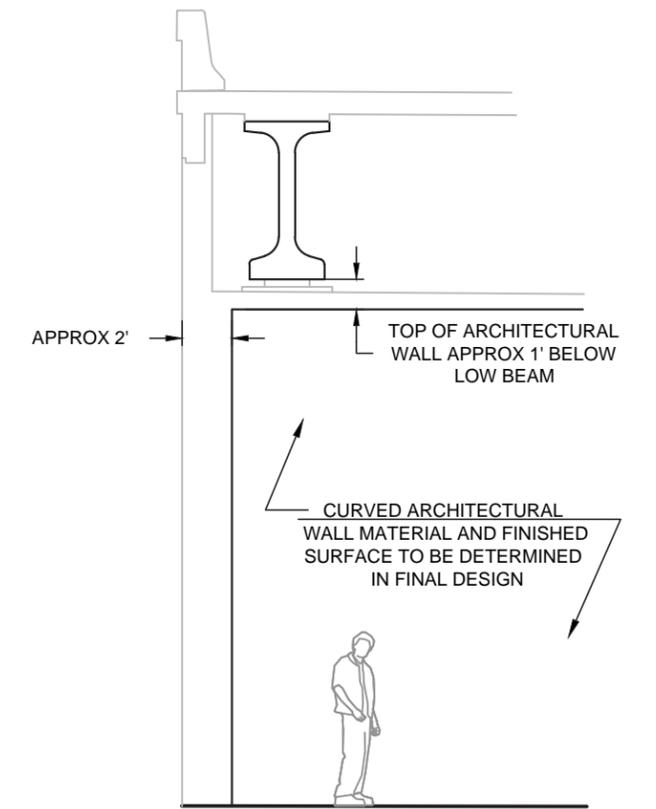
Theme 1
Movement



Theme 2
Neighborhood History



Theme 3
Cultural Heritage

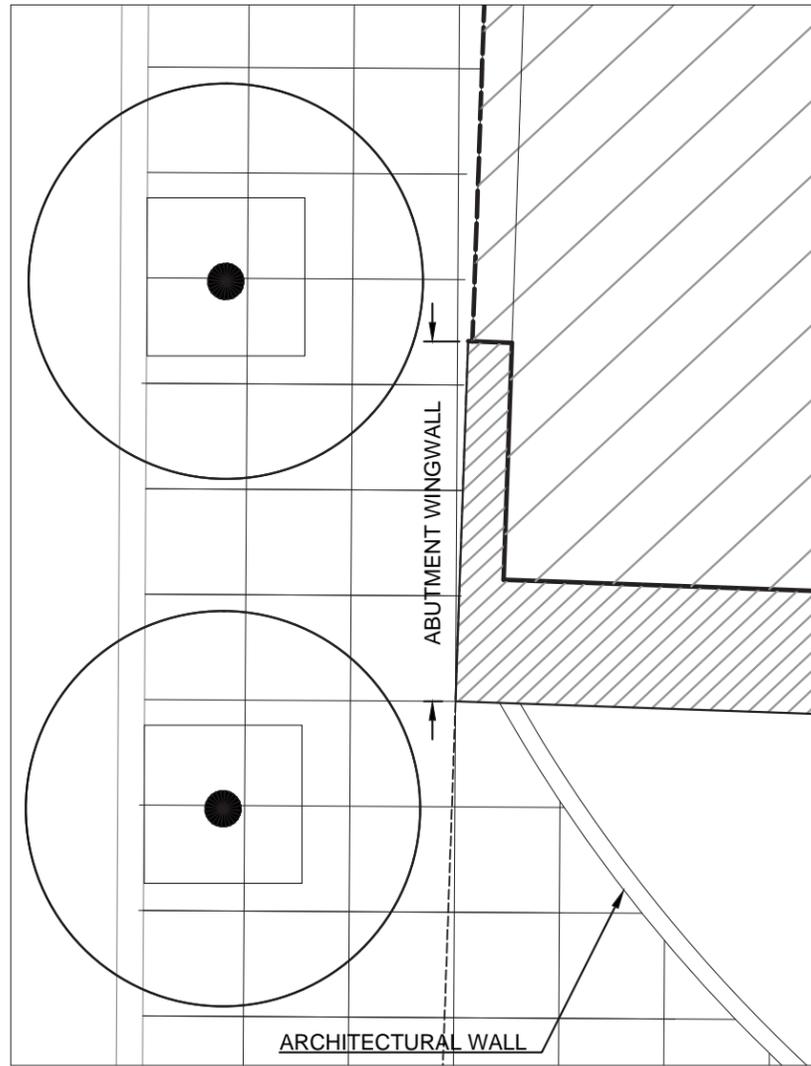


View A-A

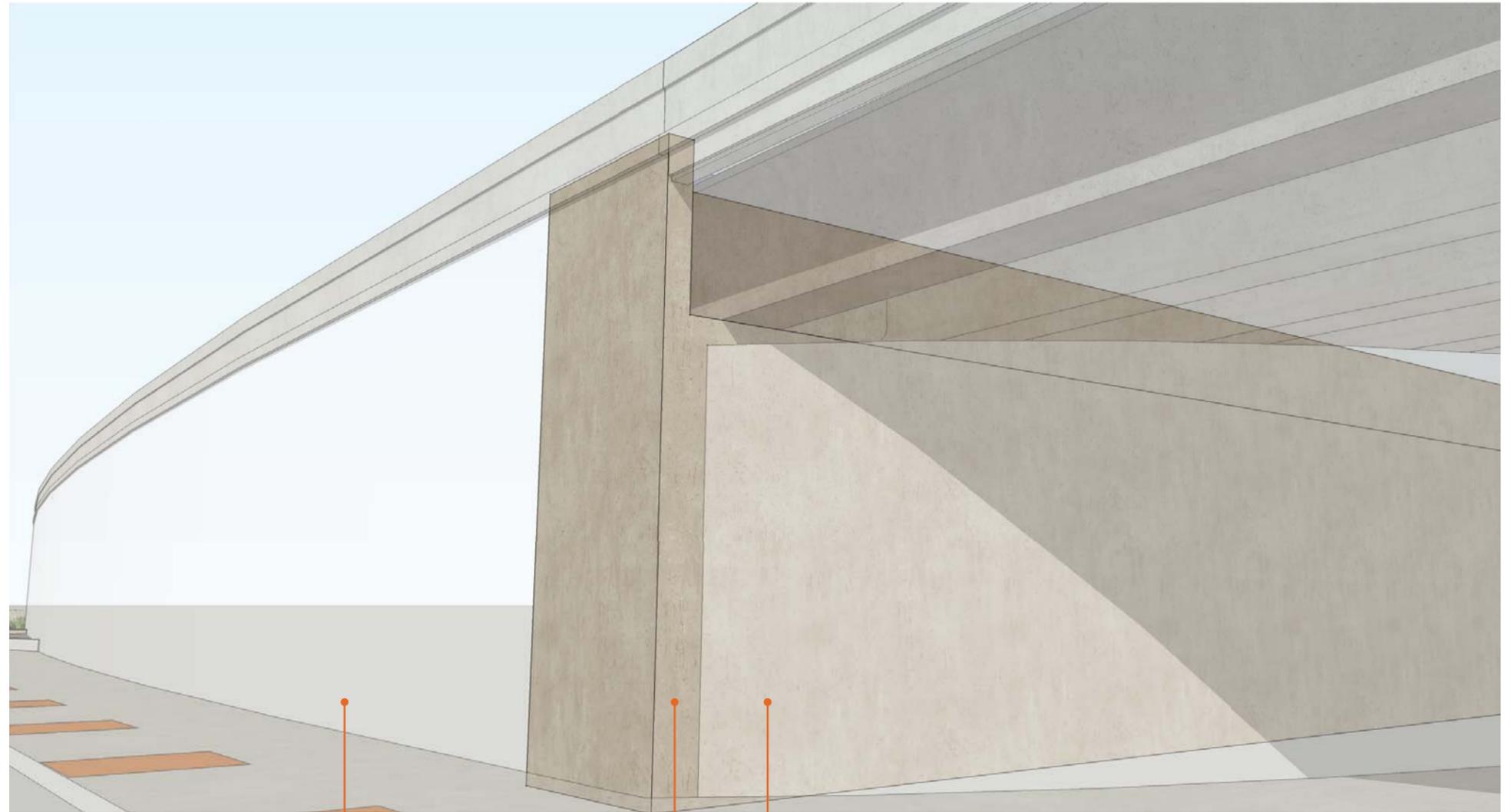
Bridges over Lake Street and Transit Plaza

Exhibit 2.1.10 - Abutment Wingwalls

The Abutment Wingwalls and Freeway retaining walls shall receive special formliner surface treatment according to the Public Art Framework Plan. The abutment wingwall shall have the same special surface treatment applied to it to ensure continuity between project elements.



Abutment Interface



Retaining Wall

Abutment Wingwall

Architectural Wall

Bridges over Lake Street and Transit Plaza

Exhibit 2.1.11 - Transit Plaza Paving

The ground plane in the transit plaza shall be constructed with a durable non-slip paving system. Pattern and color should be used to break down the scale of the transit plaza to a human scale and help direct users to the transit station and pedestrian crossings.

All walking surfaces shall have even surface, slip proof texture per ADA and universal design principles, and provide visual cues for wayfinding. Paving materials and finishes shall also be resistant to de-icing salts.



Unit Paver Precedent: Minneapolis Central Library

Clay fired brick, ASTM C 1272 - 11 Standard Specification for Heavy Vehicular Paving Brick Type: R



Concrete Plaza Precedent: Target Field Plaza

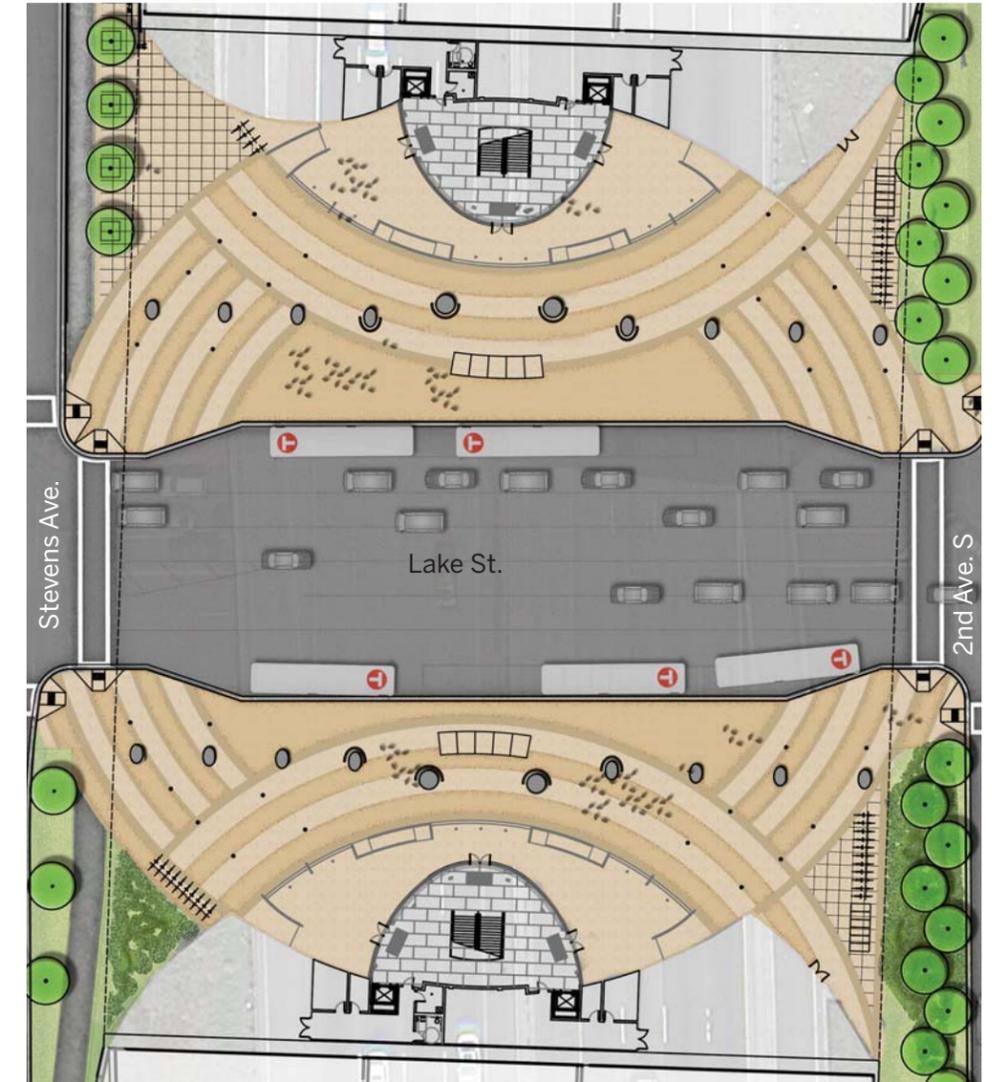
Integral color if color is used, silicon carbide additive for durability, saw cut joints.



Gold/tan integral color
Sand finish using surface
retarder



Medium gray integral color
with feldspar/mica aggregate



Transit Plaza Plan

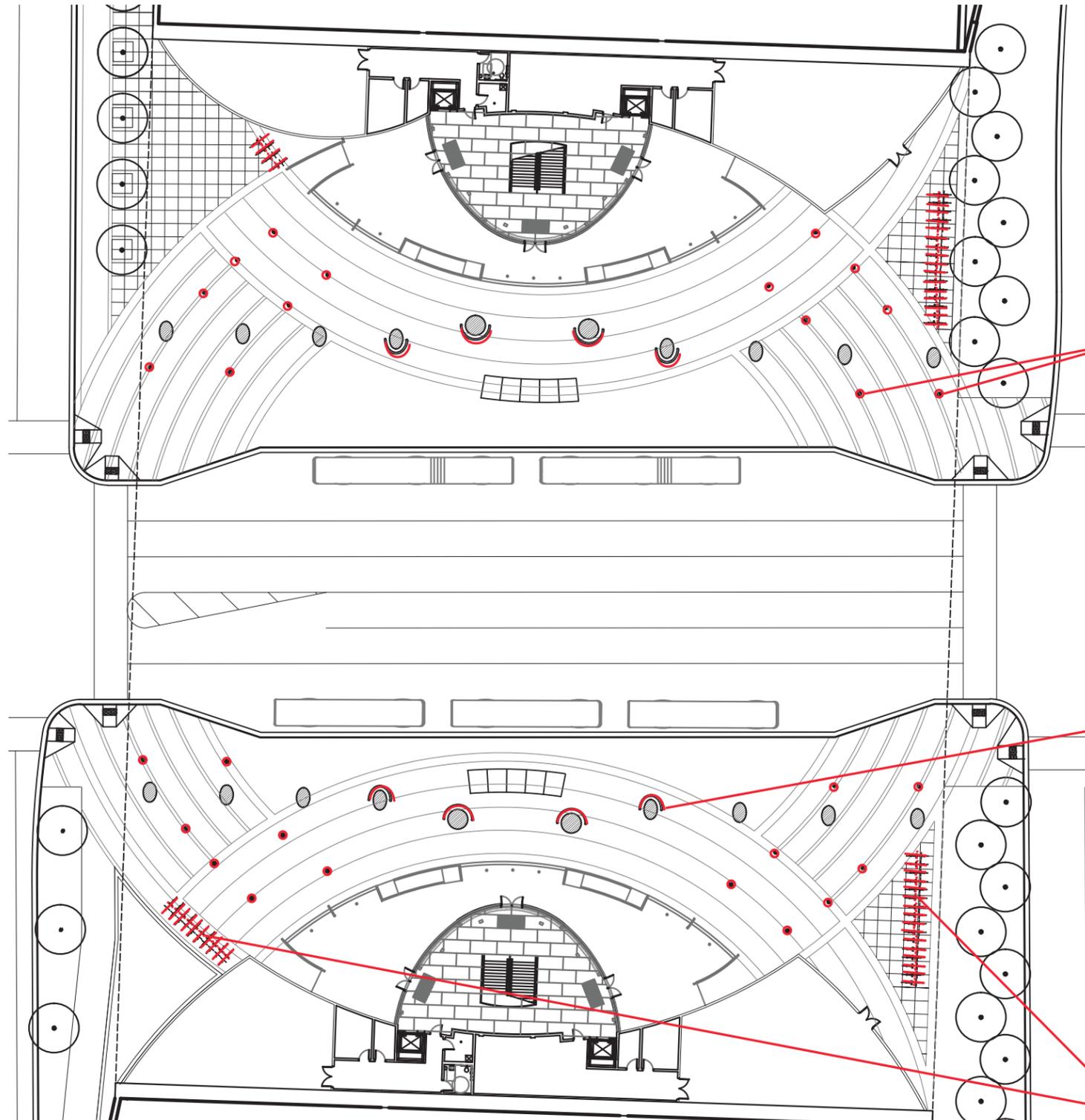
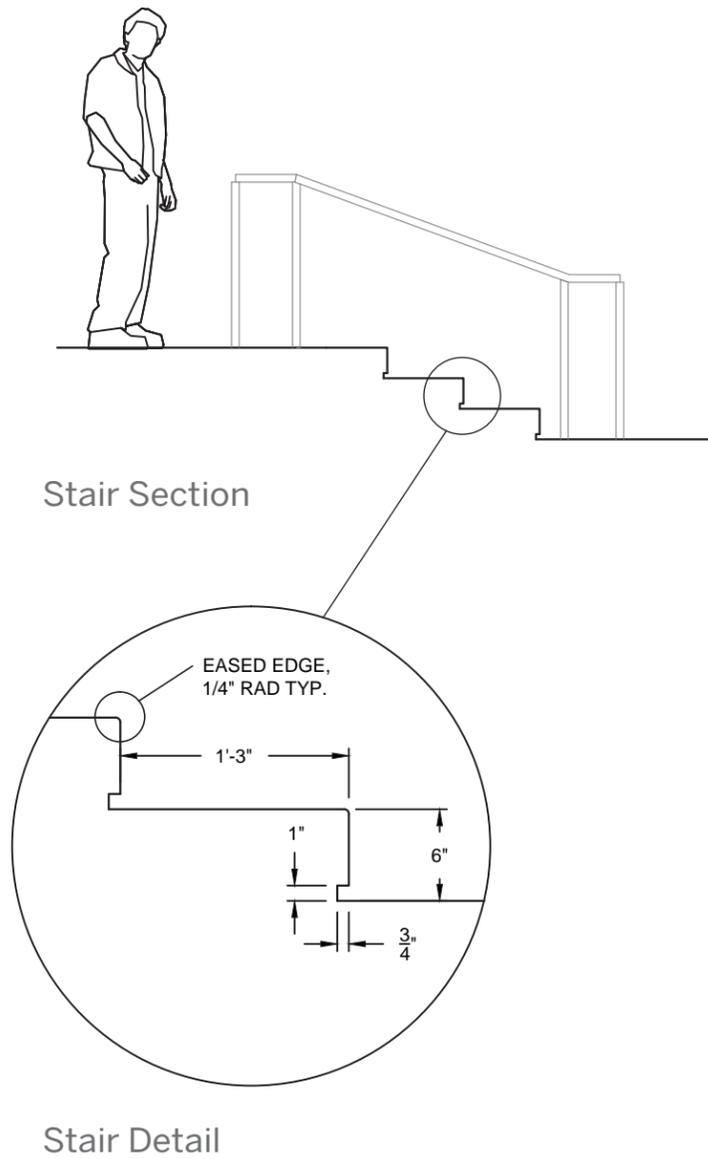
Preliminary paving designs help direct users to transit station and pedestrian crossings. The radial pattern also complements the transit station architecture.

Bridges over Lake Street and Transit Plaza

Exhibit 2.1.12 - Site Furnishings

The Plaza area could have features including: handrails, stairs, ramps, and bike loops. Additional features such as light columns, bike share, lean rails, and bus shelters provide a greater level of functionality and increase plaza use. Specific type of furnishings to be decided in final design.

Plan View - Transit Plaza



Light Columns ○



Lean Rails ◡



Bike Loops ◡



Bridges over Lake Street and Transit Plaza

Exhibit 2.1.13 - Lighting

Lighting design has been addressed conceptually for the under-bridge transit station plaza areas and studies have been limited as to the placement of fixtures, electrical routing, and types of fixtures. Preliminary photometric studies and the design visualizations shown here were used to study concepts for lighting the plaza areas. More detailed lighting design considerations were also included in the separate architectural plans for the interior lobby spaces.

As the main performance objective, with support from stakeholders and the station-area design principles, the transit plaza should be bright and evenly illuminated at all times, day and night. A minimum light intensity of 50 foot-candles is required in pedestrian areas and 75 foot-candles in the roadway. All lighting beneath S.B and N.B. I-35W Bridges shall be directed downward. Light fixtures for illuminating the pedestrian areas shall be mounted on diaphragms located between the bridge beams or on the sides of the pier columns as illustrated. Electrical service for lights on the S.B and N.B. I-35W Bridges is expected to be routed between the beams and within the pier columns.

The BRT Bridge shall not have fixtures attached to the concrete box bridge structure, but shall instead be up-lit from fixtures attached to adjacent architectural features, giving the plaza a washed lighting effect as illustrated in the visualizations. This provides reflected light off of the underside of the haunched box beam structure.

Additional lighting within the pedestrian areas of the transit plaza may be provided using ground-mounted light columns. The Lake Street lighting standard should not be carried through the transit plaza.

Primary lighting within the High Quality Connection shall be provided using ground-mounted light columns.

NOTE: The front face of the outer bridge beams shall also be illuminated with a continuous strip of light mounted along the back side of the fascia panels.

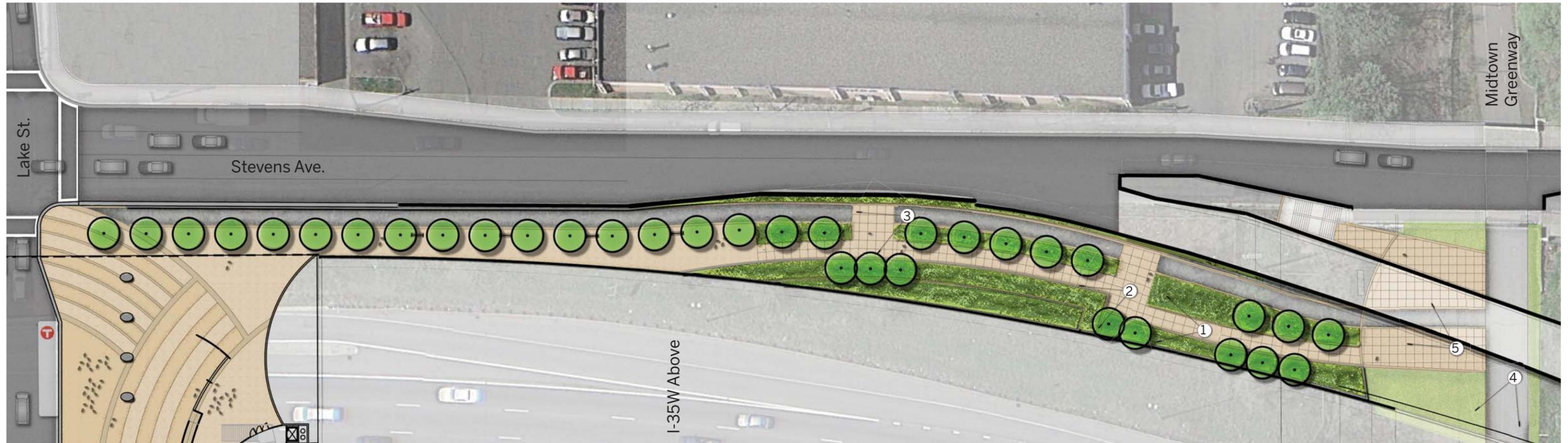
The final design process is expected to address lighting for these and other areas within the project in a manner consistent with this guidance and supporting documentation/visualizations.



High Quality Connection and Neighborhood Facing Retaining Walls

Exhibit 2.2.1 - Plan View

As identified in the Minneapolis City Council Resolution, the High Quality Connection fulfills the community generated request to provide a high quality bicycle and pedestrian connection between the Midtown Greenway and Lake Street Transit Station.



Plan View - High Quality Connection

Illustrating proposed planting design and layout of bike and pedestrian pathways.



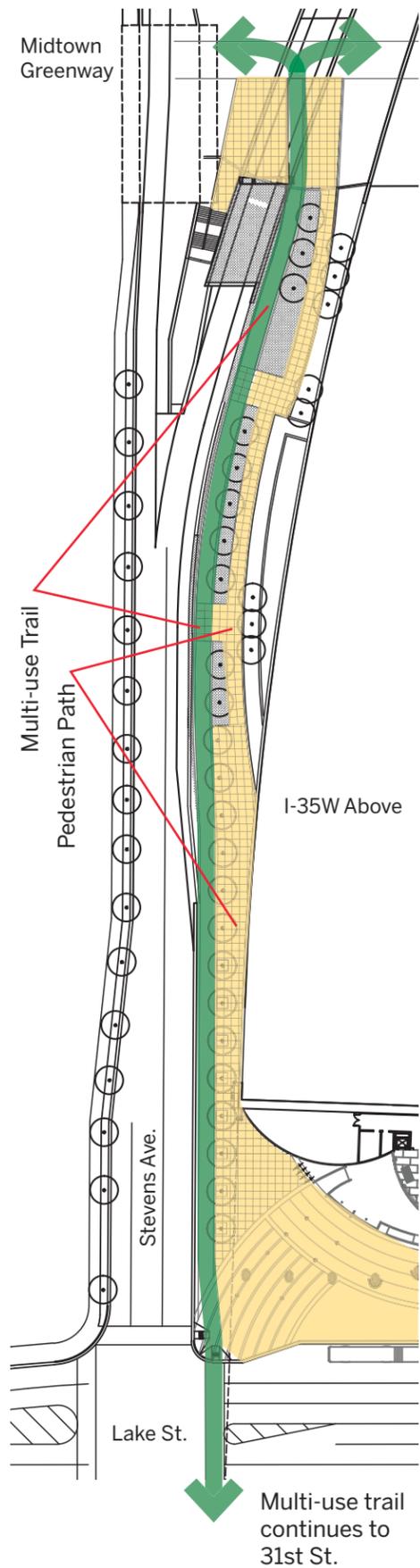
Perspective View Key:

1. Exhibit 2.2.2
2. Exhibit 2.2.3
3. Exhibit 2.2.5
4. Exhibit 2.3.1
5. Exhibit 2.3.2

High Quality Connection and Neighborhood Facing Retaining Walls

Exhibit 2.2.2 - Hardscape and Site Furnishings

The High Quality Connection follows the Minneapolis tradition of separate bike and pedestrian trails to minimize user conflict. Paving materials to be used should provide visual interest and wayfinding. The High Quality Connection uses a curvilinear geometry for softening and directional queuing. Grades are limited to 4.9% max on both pathways with ADA compliant landings on pedestrian paths.



Emergency Call-In Kiosk

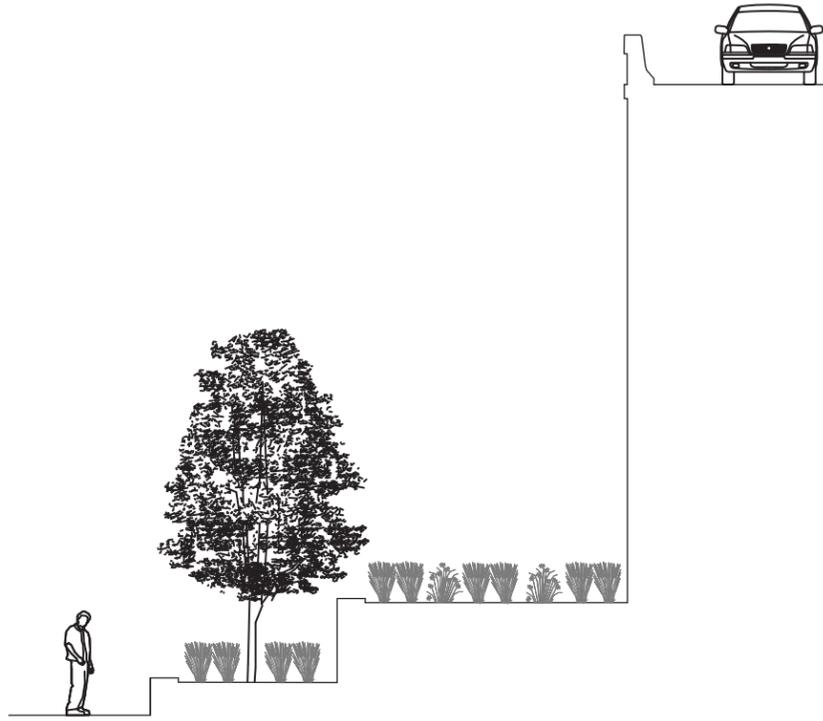


Perspective View

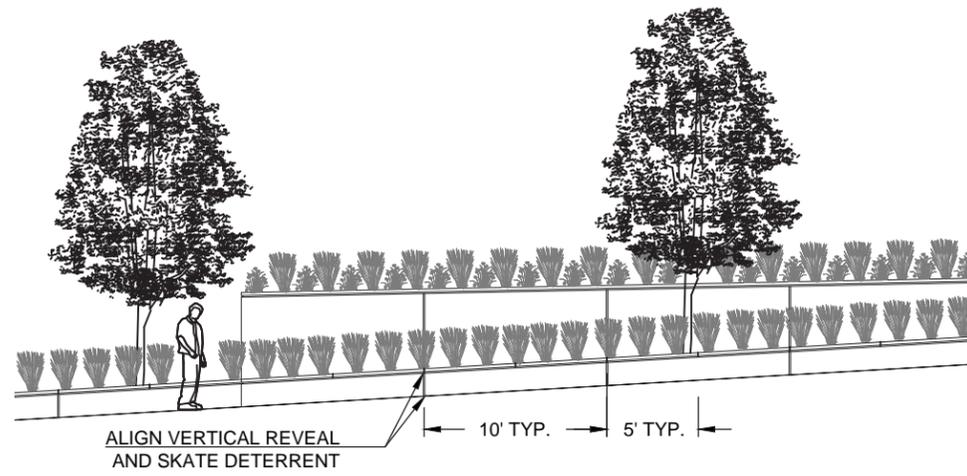
High Quality Connection and Neighborhood Facing Retaining Walls

Exhibit 2.2.3 - Planter Walls

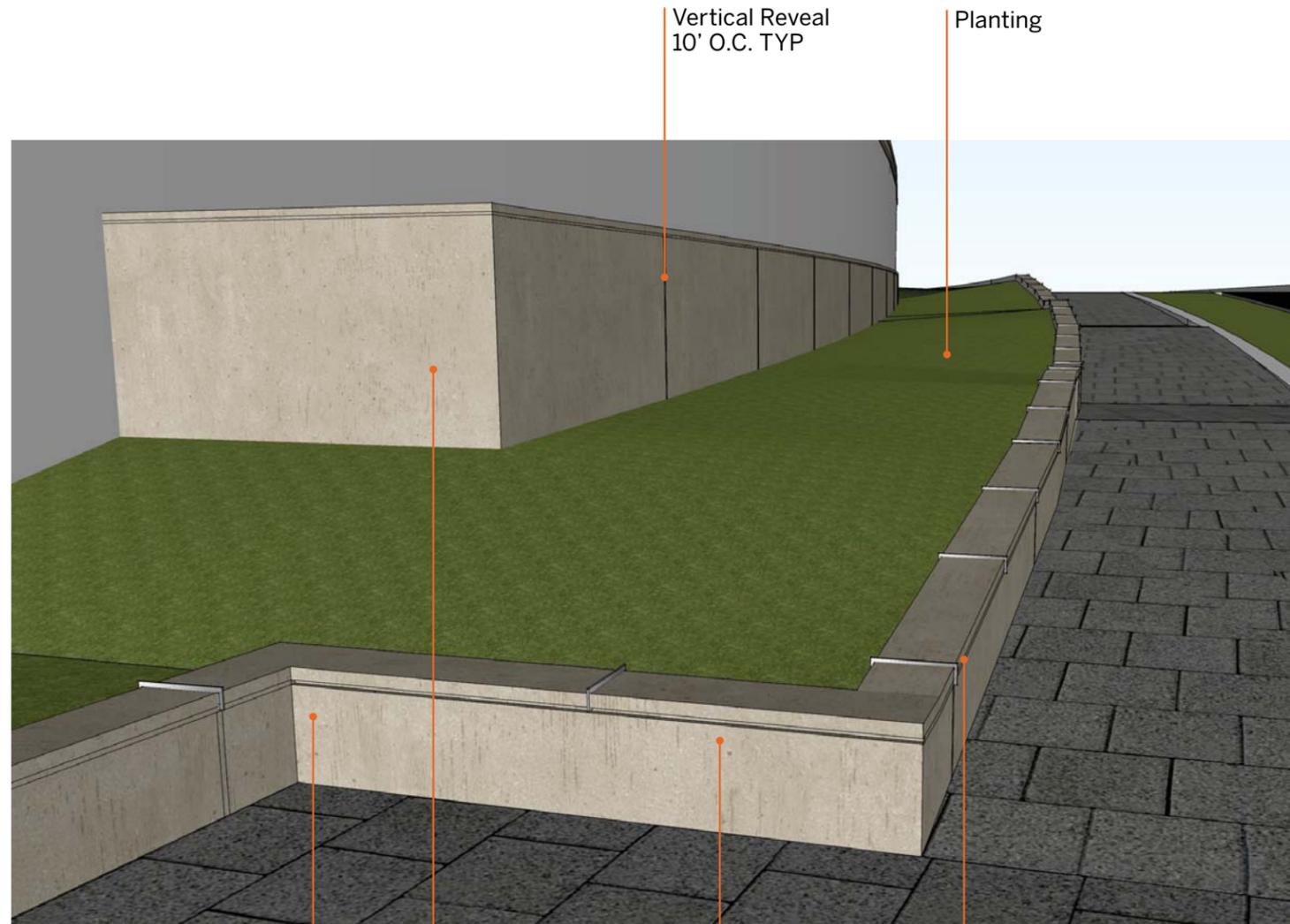
The planter walls in the High Quality Connection shall be cast-in-place concrete and receive a reveal along the top edge. These wall could also receive a decorative surface treatment in a similar design as the freeway retaining walls. Short, stepped planter-seat walls reduce scale of freeway and provide a more pedestrian friendly environment. Planter wall surface treatment color should compliment the retaining walls. Retaining wall color to be decided in final design.



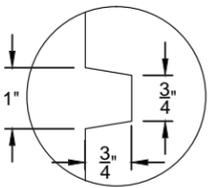
Section A-A



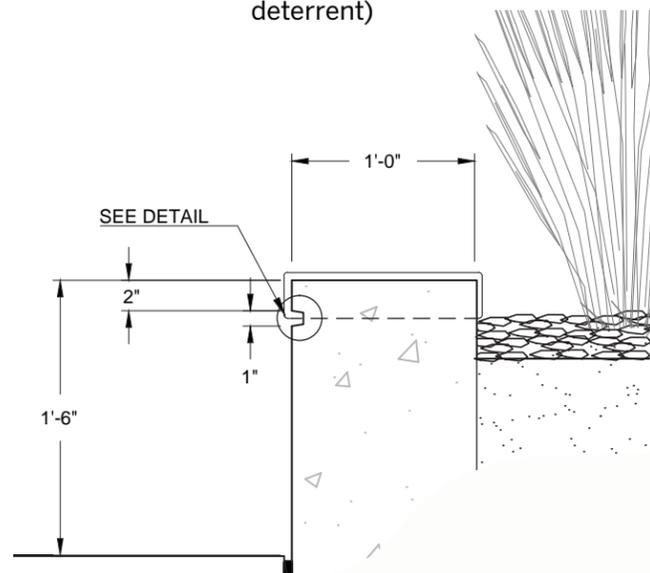
Planter-Seat Wall and Retaining Wall Elevation



Tiered Planter Wall



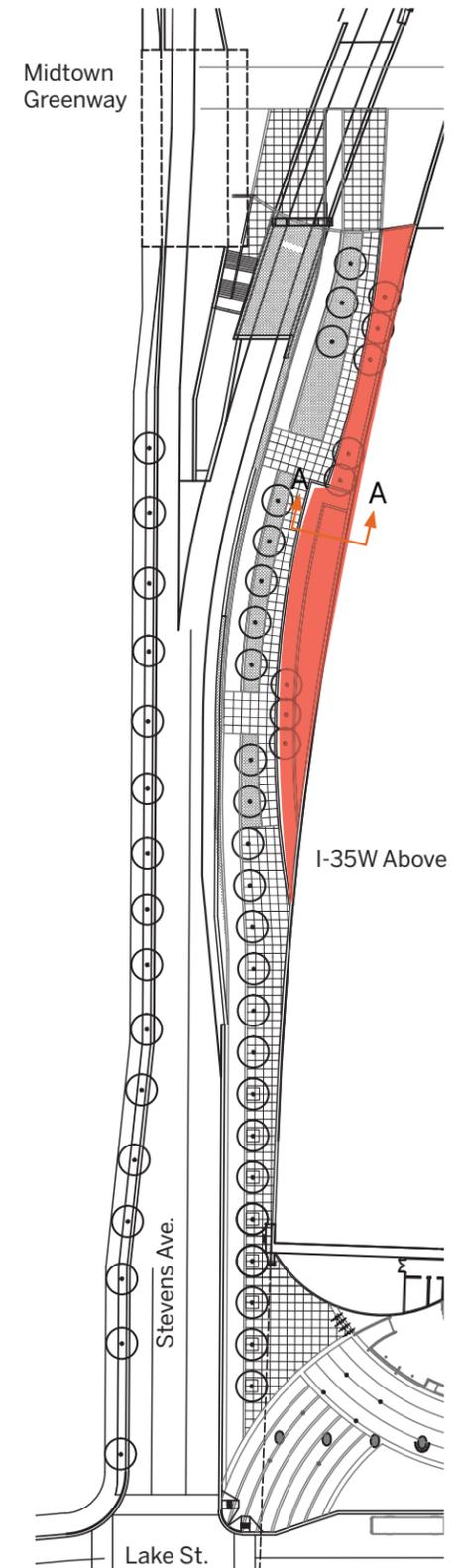
Reveal Detail (Vertical and Horizontal)



Planter-Seat Wall Section



Skateboard Deterrent

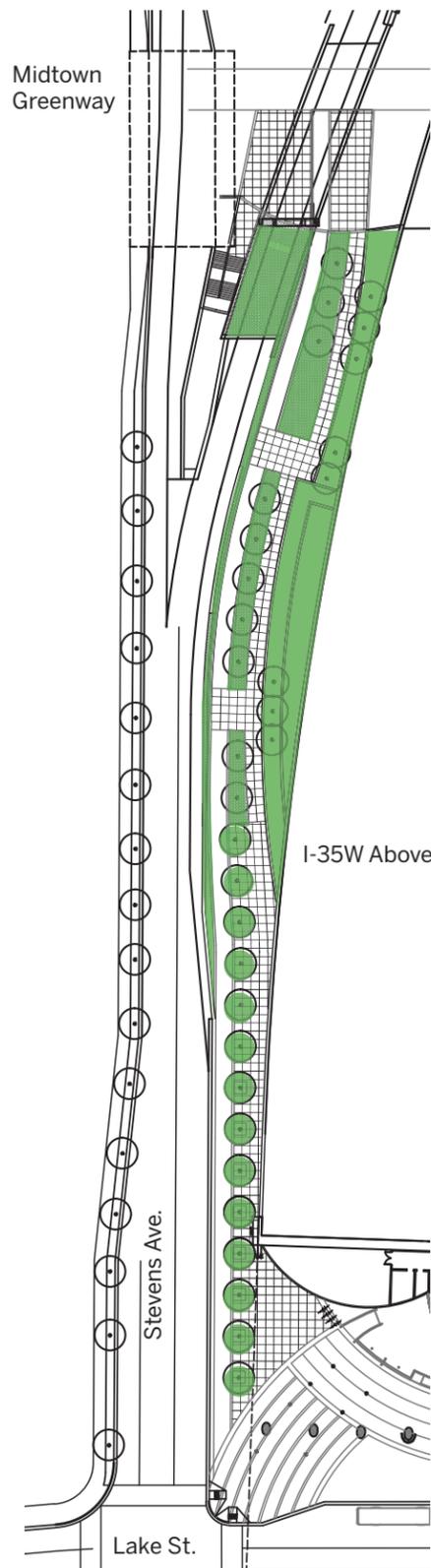


Plan View - High Quality Connection

High Quality Connection and Neighborhood Facing Retaining Walls

Exhibit 2.2.4 - Plant Palette

The final design layout of plant materials within the HQC shall be responsive to several key factors including: available sunlight, available soil volume, rainwater infiltration and uptake, seasonal characteristics to ensure a durable, attractive, functional landscape is developed. Of special importance is the application of Crime Prevention Through Environmental Design (CPTED) principles to ensure adequate visibility and avoid places for people to hide. Additionally, the Cultural Landscape Management and Treatment Guidelines for the Historic District of the Midtown Corridor should be referenced when doing restorative work within the Greenway.



Plan View - High Quality Connection

Sun



Prairie Blazing Star



Catmint



Prairie Dropseed and Purple Coneflower



Wild Geranium



'Armstrong' Red Maple (Columnar)

Shade to Partial Shade



Paper Birch, single-stem



Black Chokeberry



Arctic Blue



Dwarf bush honeysuckle



Penn Sedge



Canada



Maidenhair Fern



Lady Fern



Wild Ginger

Climbers



Boston Ivy



Engleman Ivy

High Quality Connection and Neighborhood Facing Retaining Walls

Exhibit 2.2.5 - Neighborhood Facing Retaining Walls

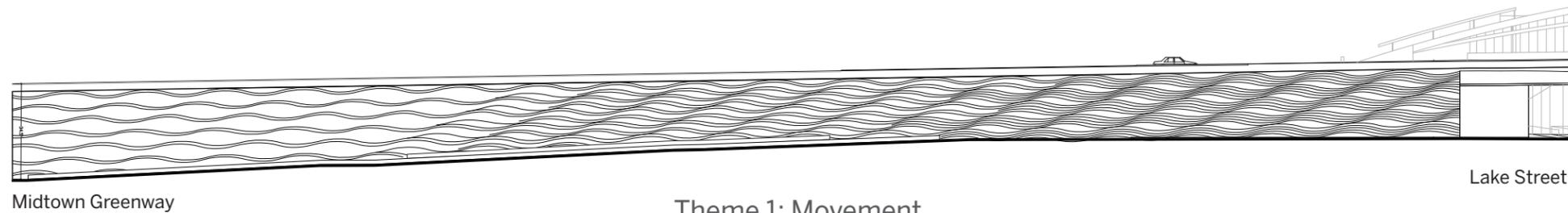
The neighborhood facing retaining walls along I-35W adjacent to 2nd Avenue, Stevens Avenue, the High Quality Connection and abutments under I-35W at Lake Street and 31st Street shall receive a special form liner rustication surface treatment. Discussions with the PAC and presentations to the community during the preliminary design phase have established an expectation that a public artist will be engaged to collaborate in the development of a final design for the retaining wall rustication patterns and surface treatments.

See the Public Art Framework Plan for additional information regarding public art themes, precedent examples and conceptual design explorations.

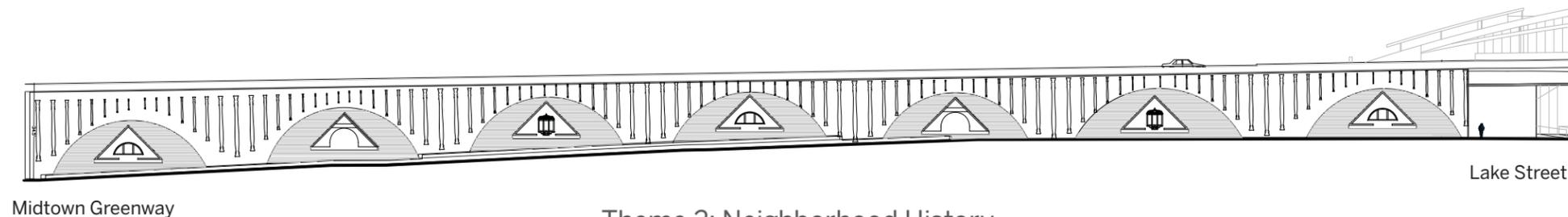
Refer to Exhibits 2.3.1 for alternative retaining wall treatments if public artist is not engaged to refine one of the concepts illustrated below.



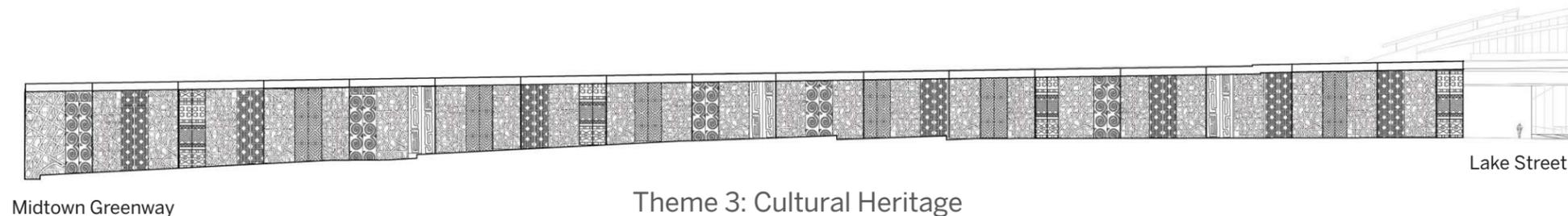
Perspective View



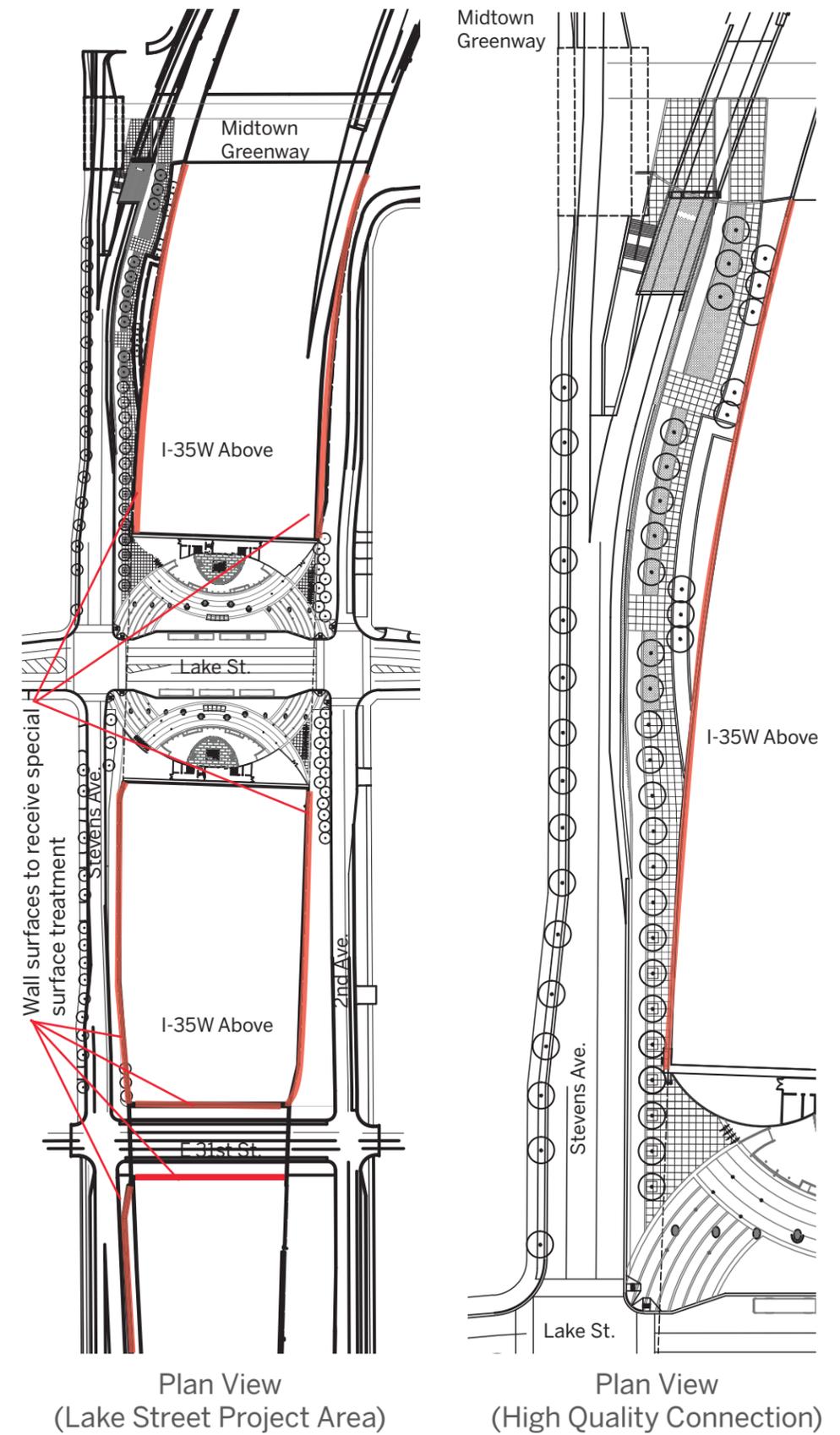
Theme 1: Movement
(Elevation view of retaining wall along High Quality Connection)



Theme 2: Neighborhood History
(Elevation view of retaining wall along High Quality Connection)



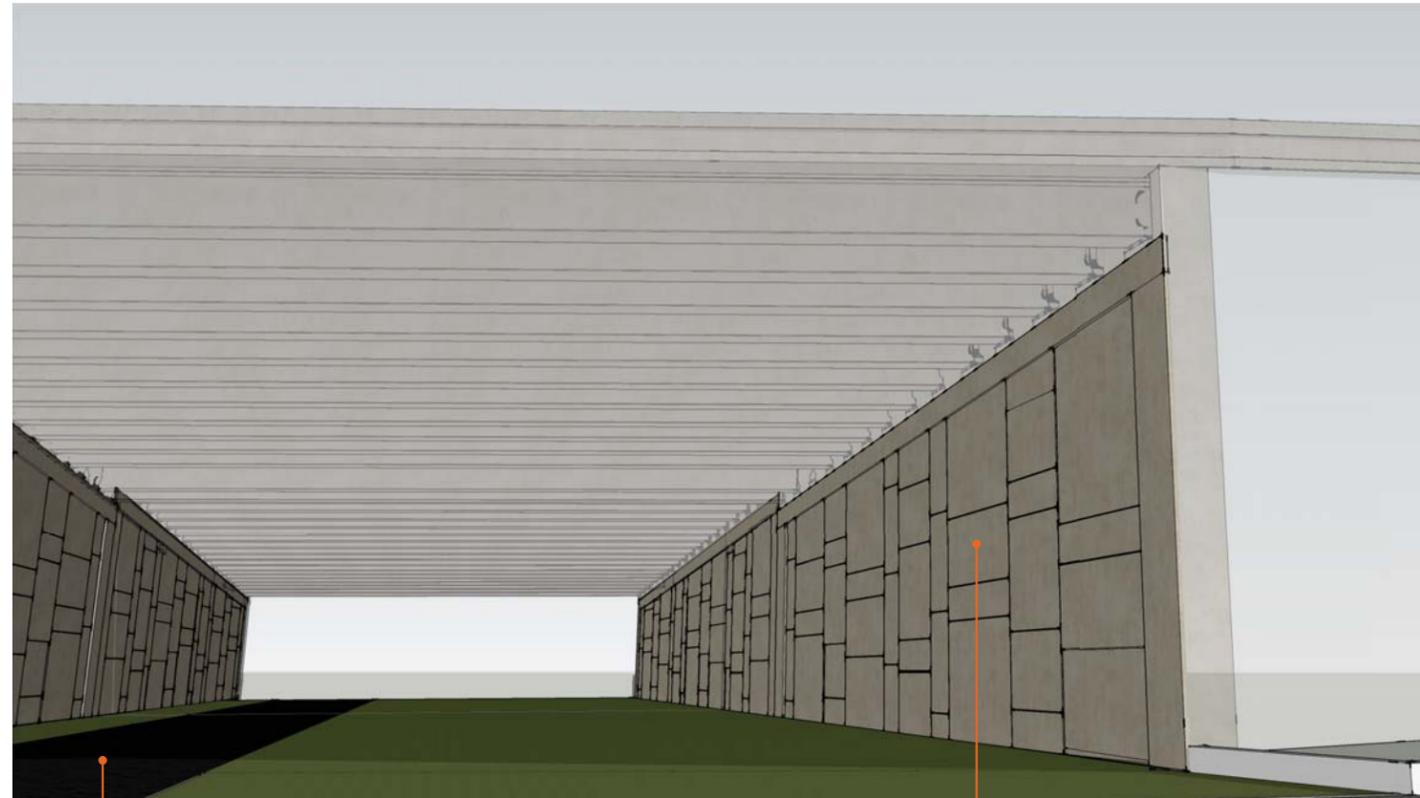
Theme 3: Cultural Heritage
(Elevation view of retaining wall along High Quality Connection)



Midtown Greenway Bridges

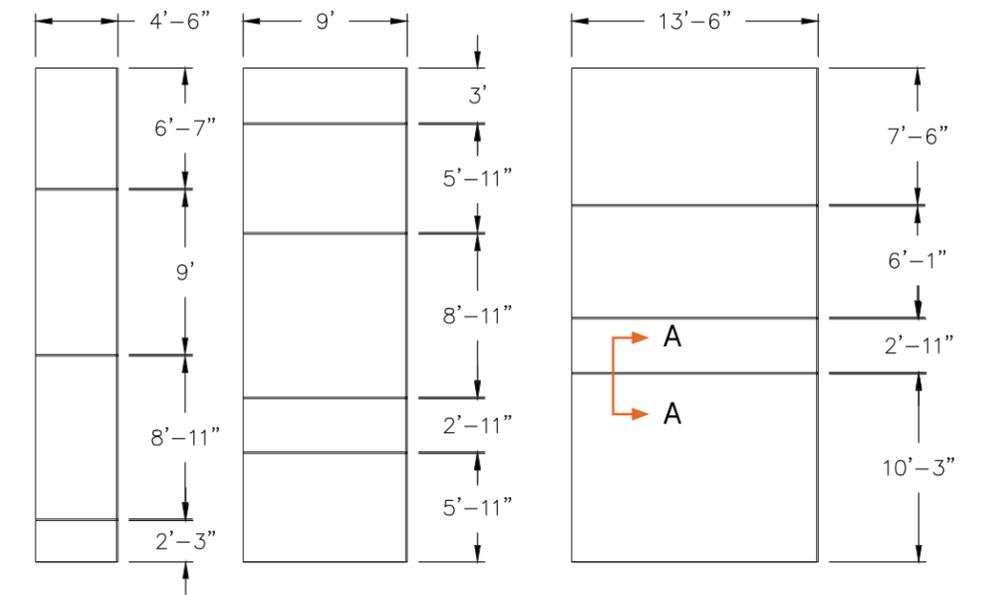
Exhibit 2.3.1 - Abutment Treatments

The bridges over the Midtown Greenway shall have abutment treatments as shown below. The architectural details on the front faces of the abutments were developed to compliment the historic characteristics of the other bridges along the Midtown Greenway. Final design shall be developed in coordination with MnDOT CRU.



Midtown Greenway

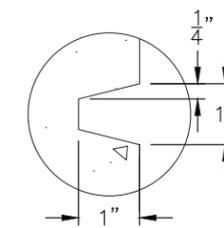
Abutment



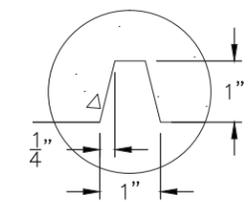
Panel A

Panel B

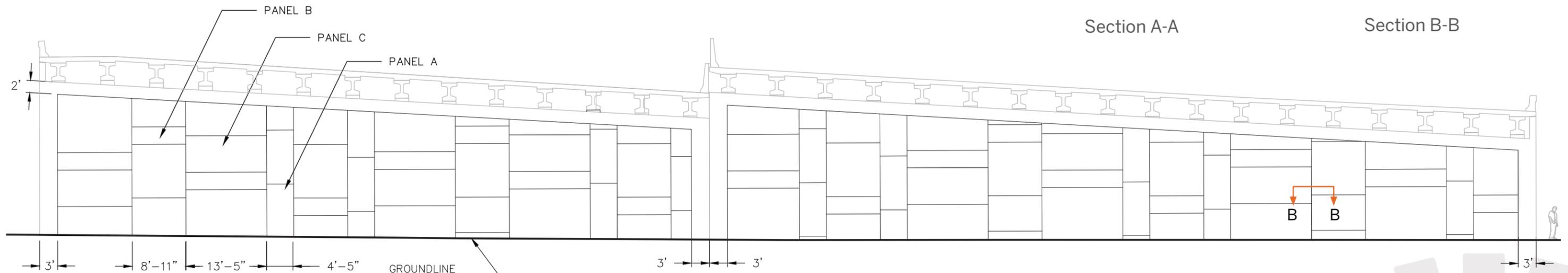
Panel C



Section A-A



Section B-B

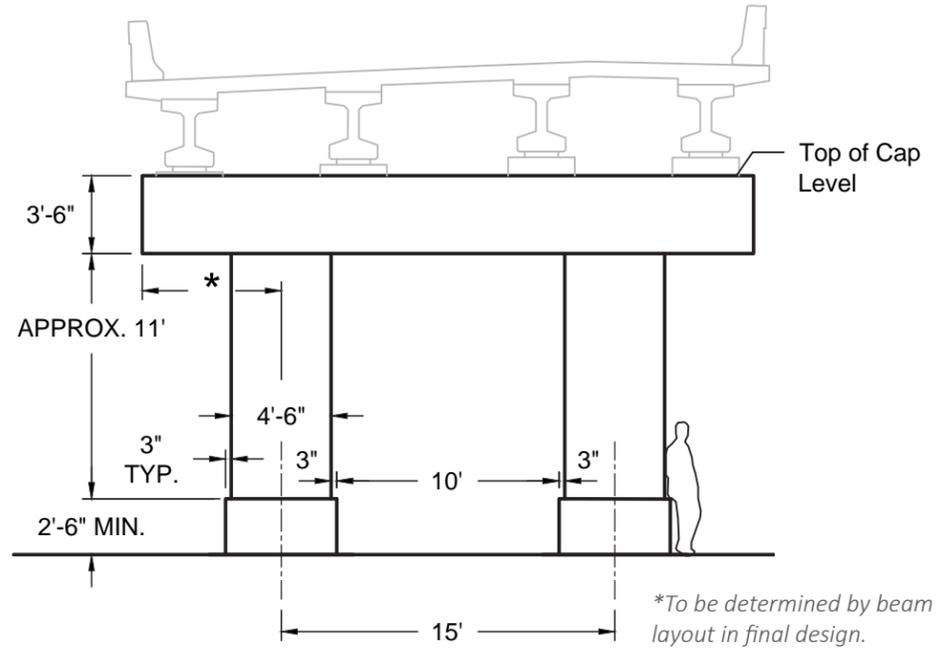


North Elevation

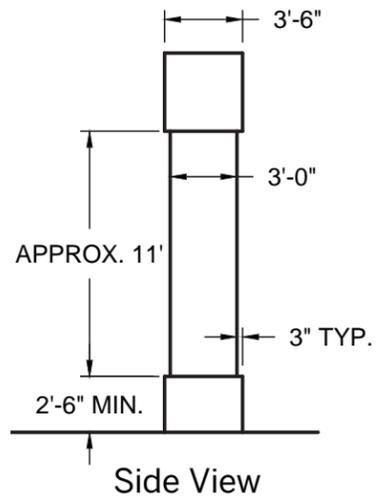
Midtown Greenway Bridges

Exhibit 2.3.2 - Exit to Lake Street Bridge, Pier

The exit to Lake Street over the Midtown Greenway bridge shall have a pier of the general proportions and dimensions shown below. The pier surface shall be coated with colored architectural surface finish using Pearl Gray.



Pier Elevation (Looking South)



Side View

Pearl Gray
#26622
194,193,179



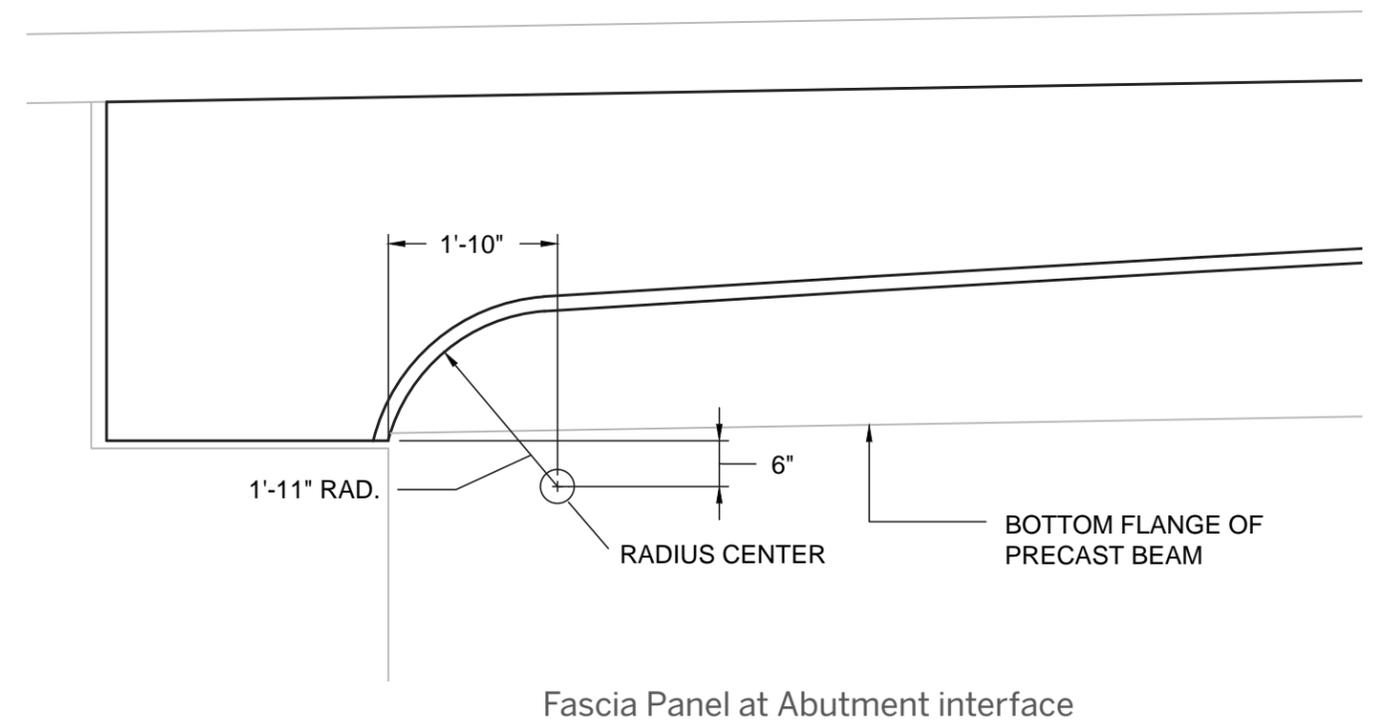
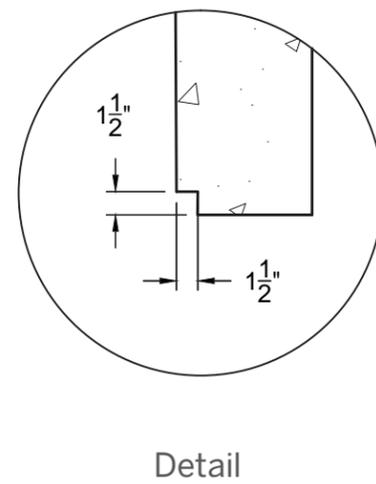
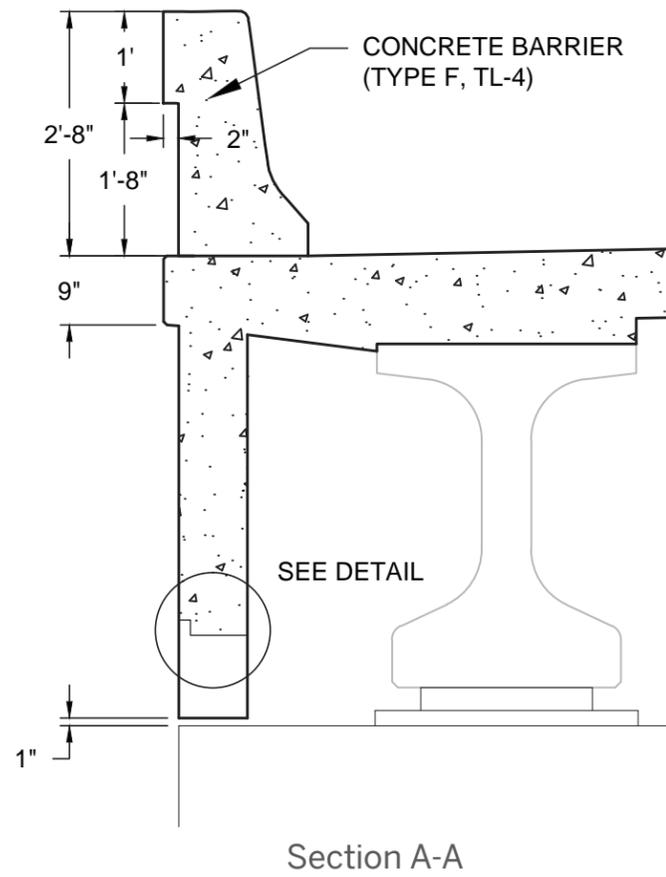
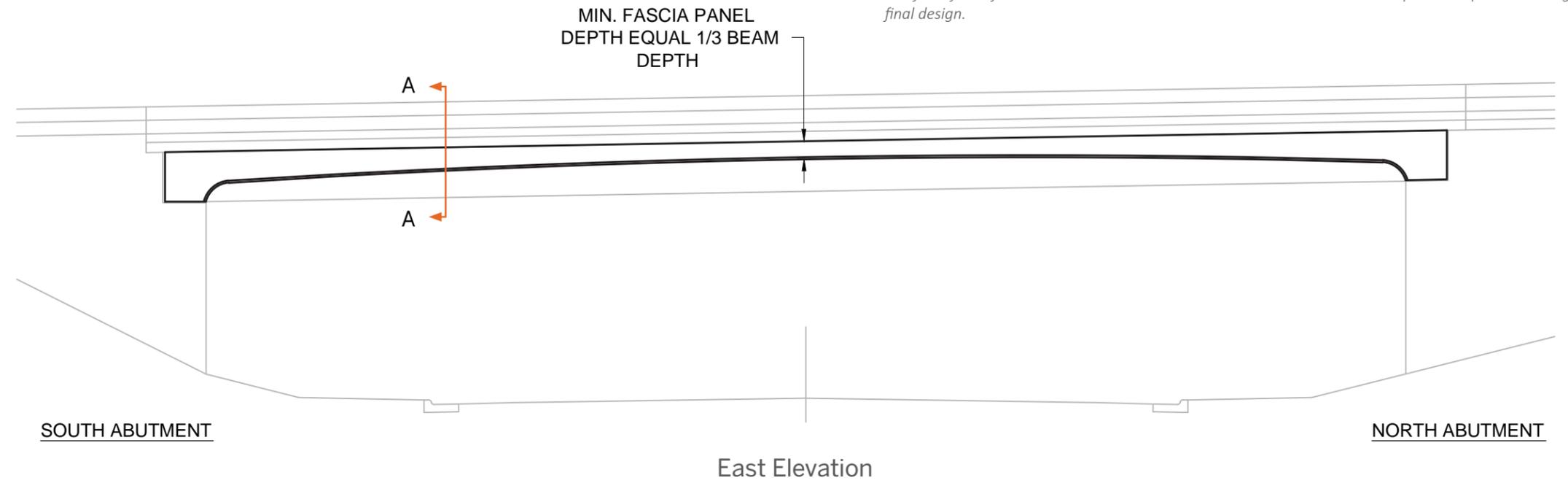
Pier

Note: Dimensions shown are approximate to provide general proportions and relative scale for structural elements and aesthetic details. Structural element sizes (column dimensions, cap depth) can be increased as necessary to meet final design capacity requirements (minimum dimensions shown).

31st Street Bridges

Exhibit 2.4.1 - Aesthetic Details

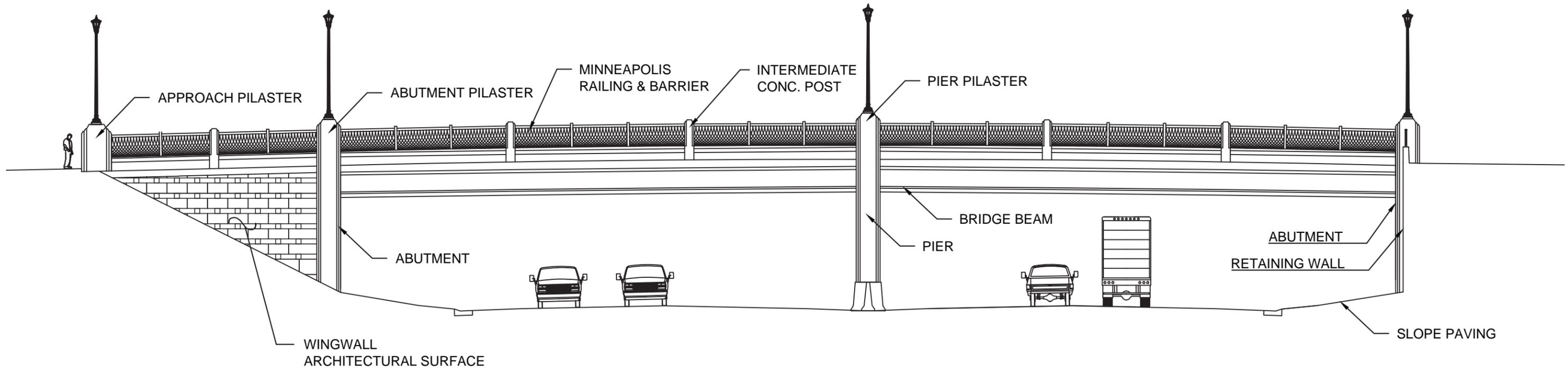
The I-35W over East 31st Street bridges shall have the aesthetic features shown below. The wingwall and front face of abutment architectural treatment will be determined in the public art process during final design.



Bridges over I-35W

Exhibit 2.5.1 - Typical Bridge Elevation

The bridges over I-35W shall have wingwall, abutment face, pier, and railing treatments that match the architectural details used on bridges in the Crosstown Commons corridor to the south.

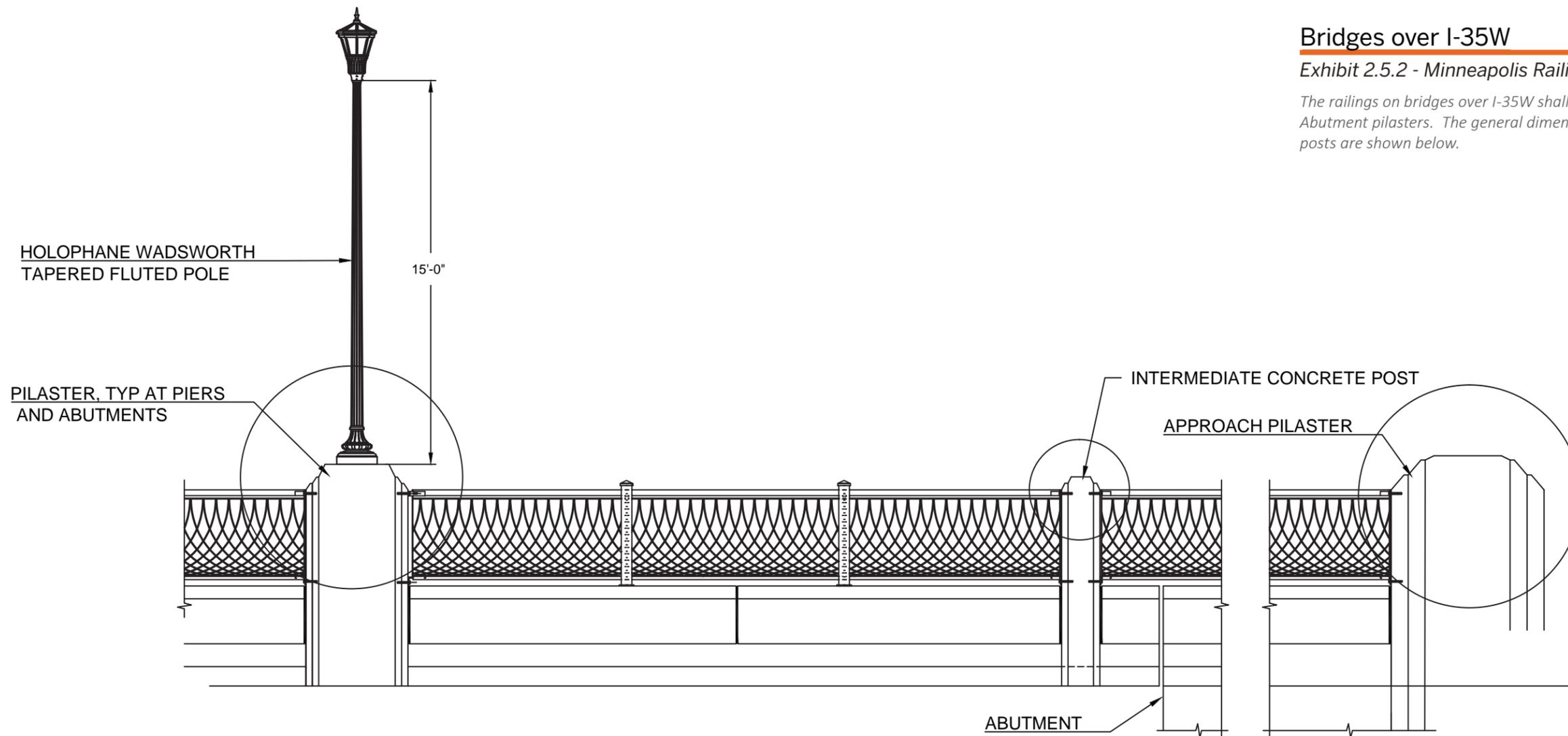


Elevation View

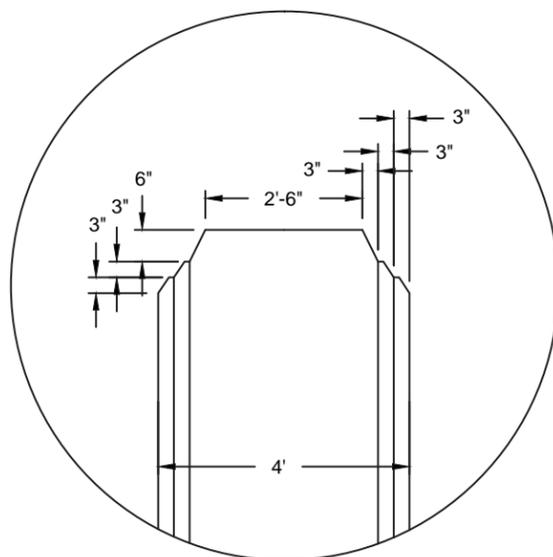
Bridges over I-35W

Exhibit 2.5.2 - Minneapolis Railing and Pilasters

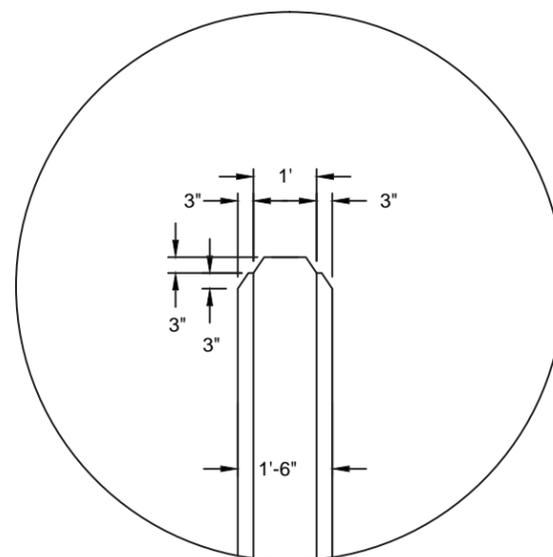
The railings on bridges over I-35W shall use the standard Minneapolis Railing, Pier and Abutment pilasters. The general dimensions and relative proportions of the pilasters and posts are shown below.



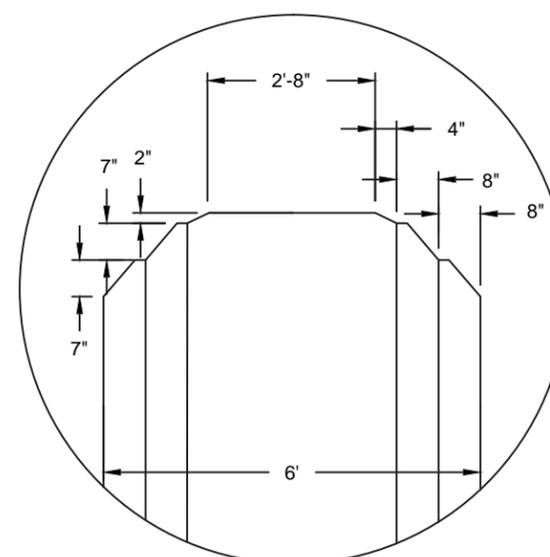
Elevation



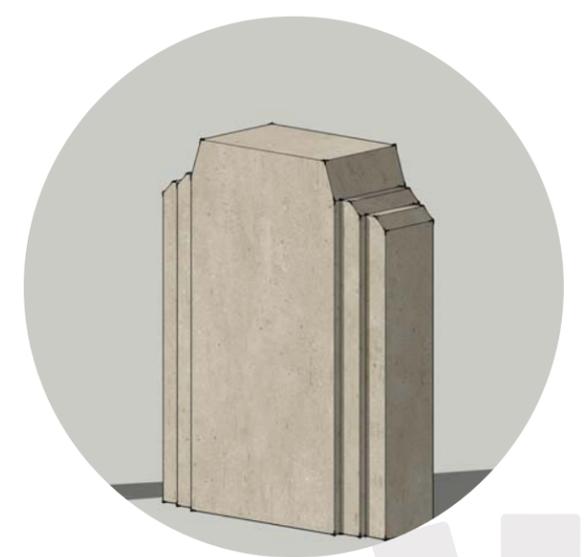
Pier/Abutment Pilaster



Intermediate Concrete Post



Approach Pilaster

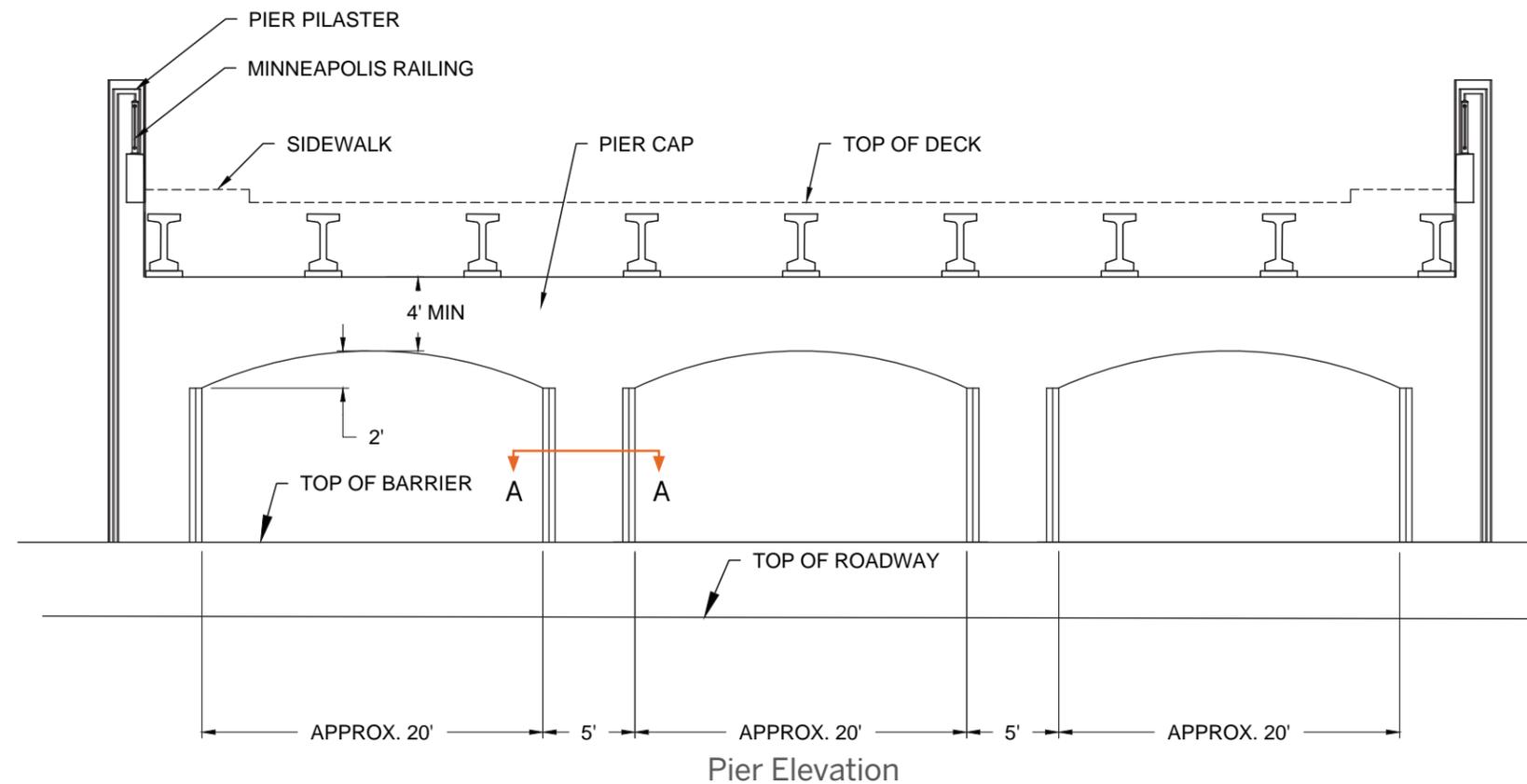
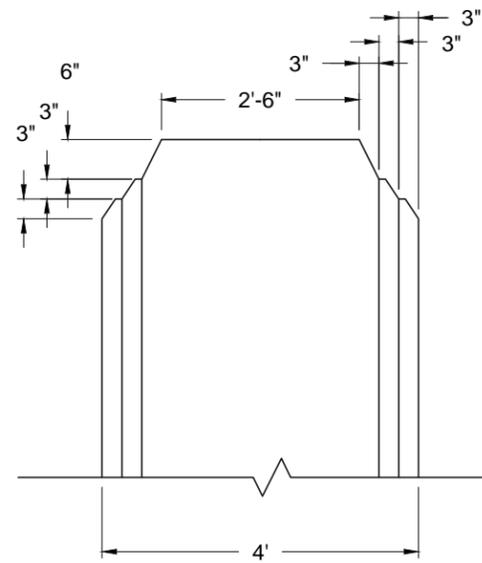
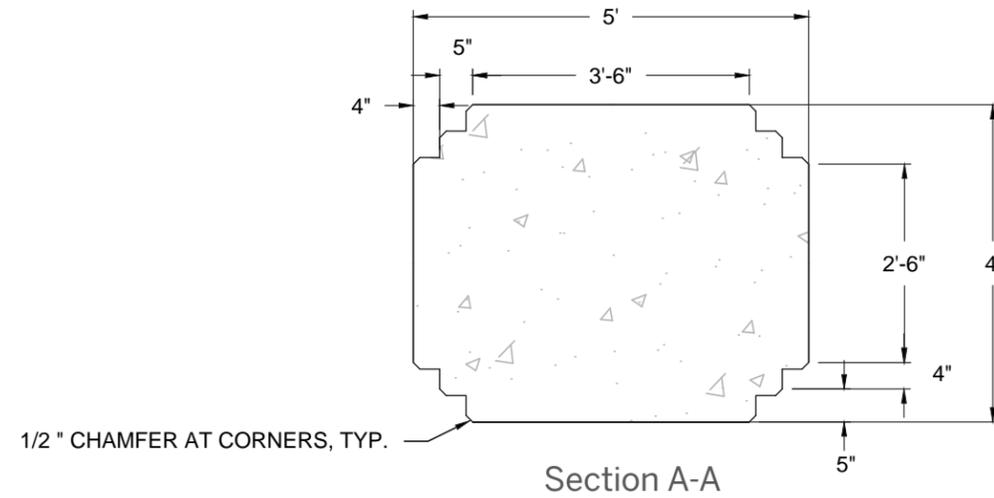
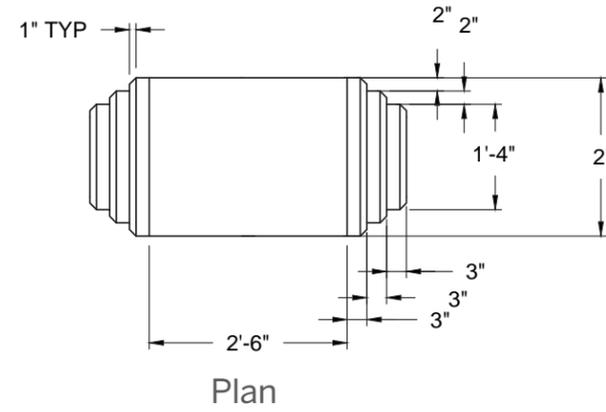


3D View

Bridges over I-35W

Exhibit 2.5.3 - Pier

The piers on bridges over I-35W shall have shapes and proportions to match the architectural details that are used on the bridges in the Crosstown Commons corridor to the south.

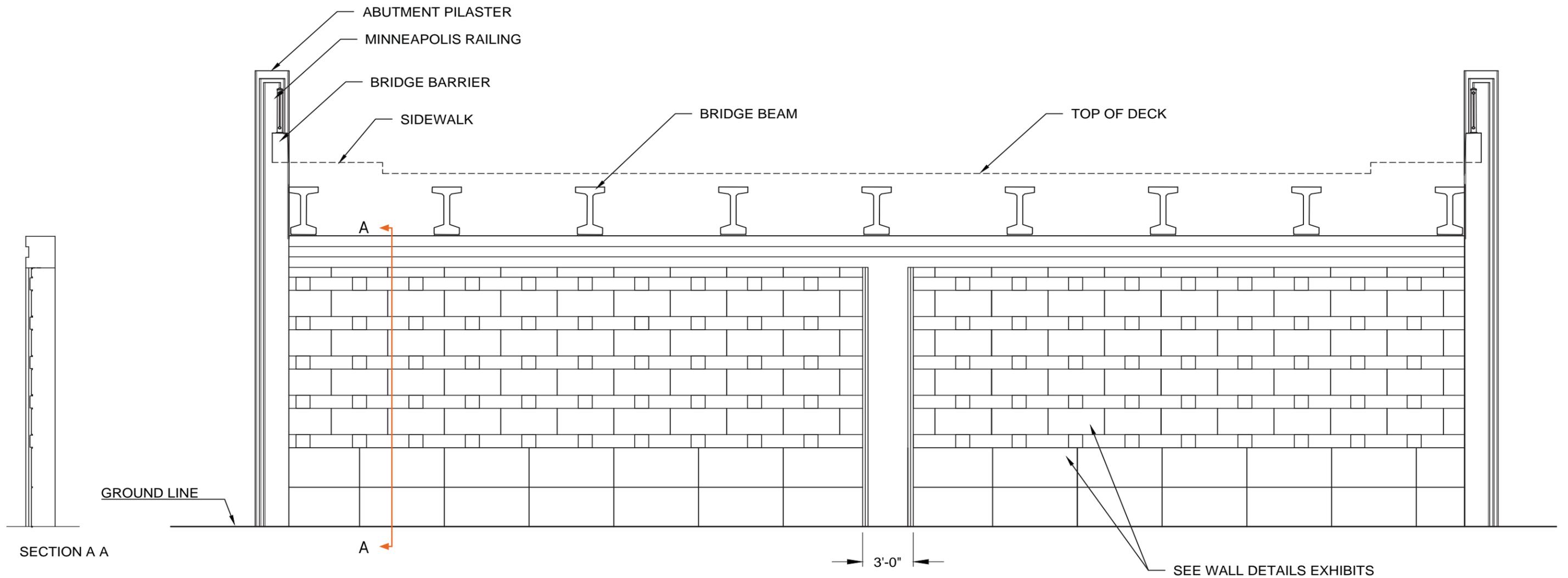


Note: Dimensions shown are approximate to provide general proportions and relative scale for structural elements and aesthetic details. Structural element sizes can be increased (column dimensions, cap depth) as necessary to meet final design capacity requirements (minimum dimensions shown).

Bridges over I-35W

Exhibit 2.5.4 - Abutment Treatments

The abutment faces on bridges over I-35W shall have wall treatments that match the architectural details on retaining walls in the corridor. These architectural details match those used on the bridges in the Crosstown Commons corridor to the south.

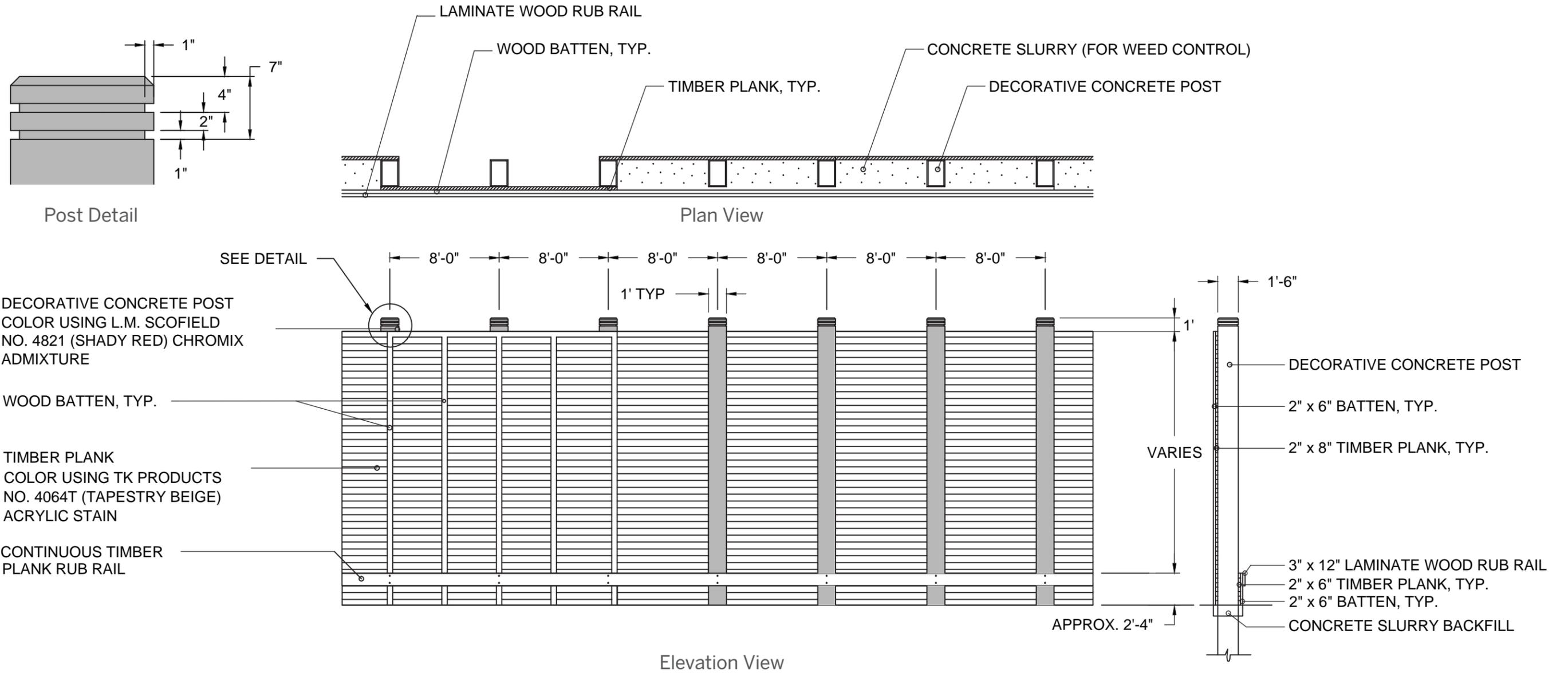


Abutment Elevation

Wall Treatments

Exhibit 2.6.1 - Noise Walls

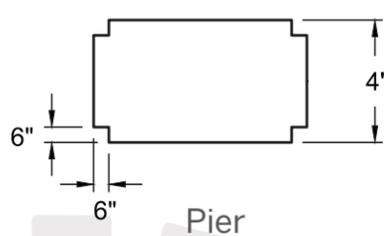
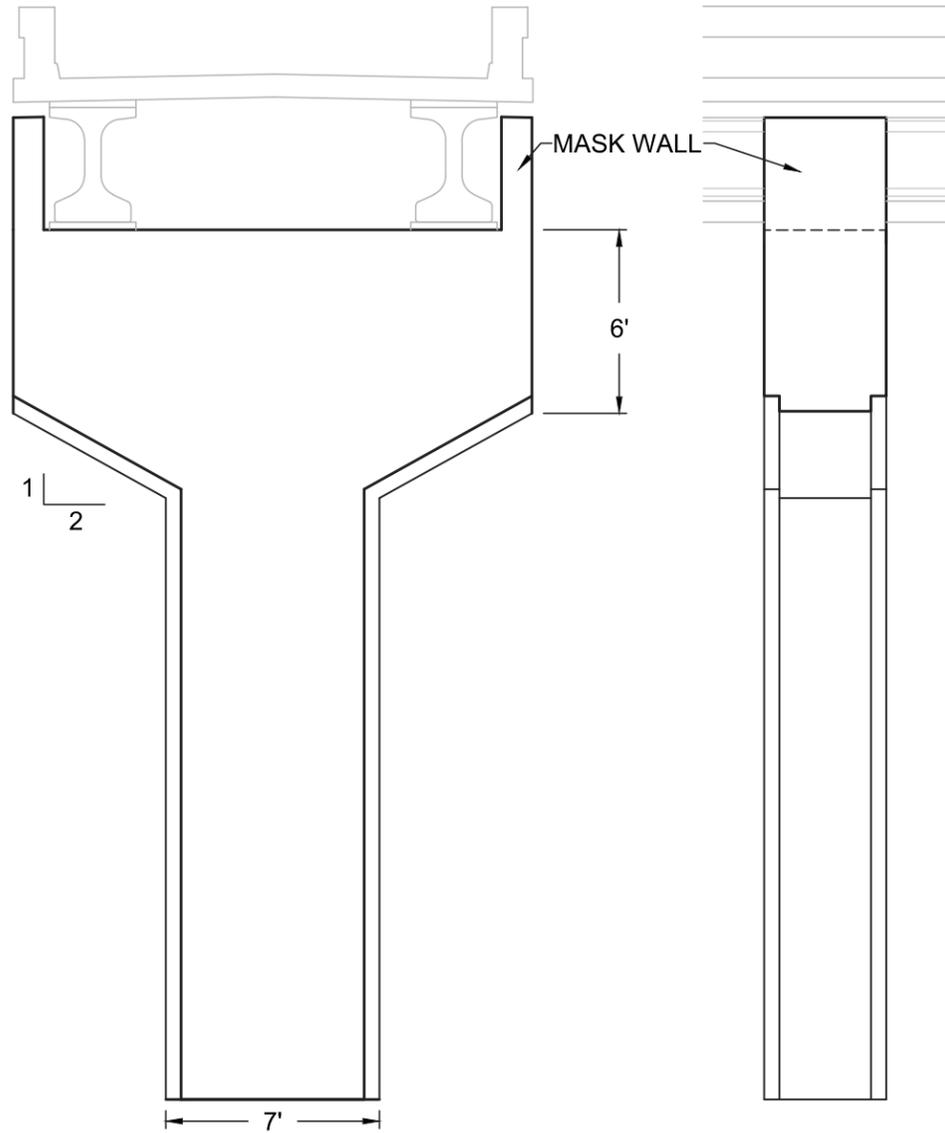
Noise walls shall use the architectural details as shown below. These architectural details match those used on the noise walls in the Crosstown Commons corridor to the south.



24th Street Pedestrian Bridge

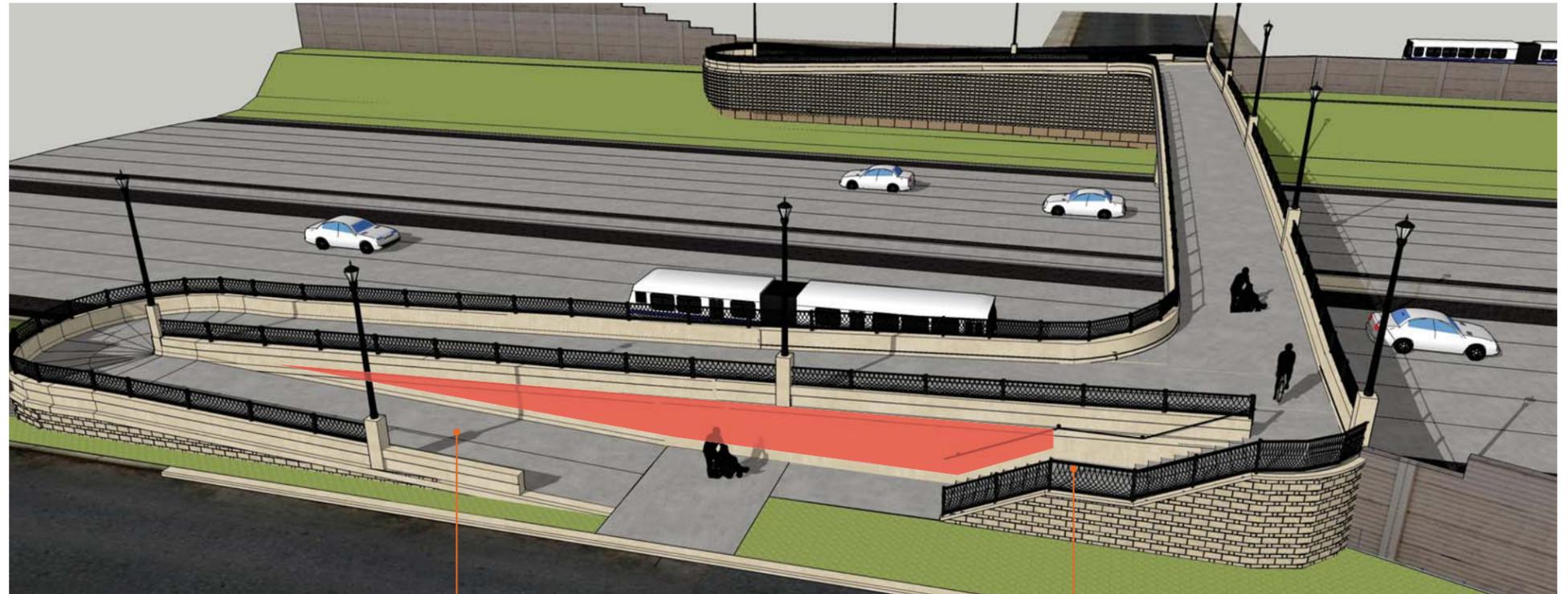
Exhibit 2.7.1 - Aesthetic Details

The new pedestrian bridge over I-35W at 24th Street shall receive special concrete formwork on all retaining walls. The freeway side shall have wall treatments specified in Exhibit 2.6.2. The neighborhood side retaining walls (outlined with a red lens in the illustration on this page) could receive a special formliner treatment to be determined by a subsequent public art process. See Exhibit 2.3.1 for alternative wall treatment should public artist not be engaged.



Pier

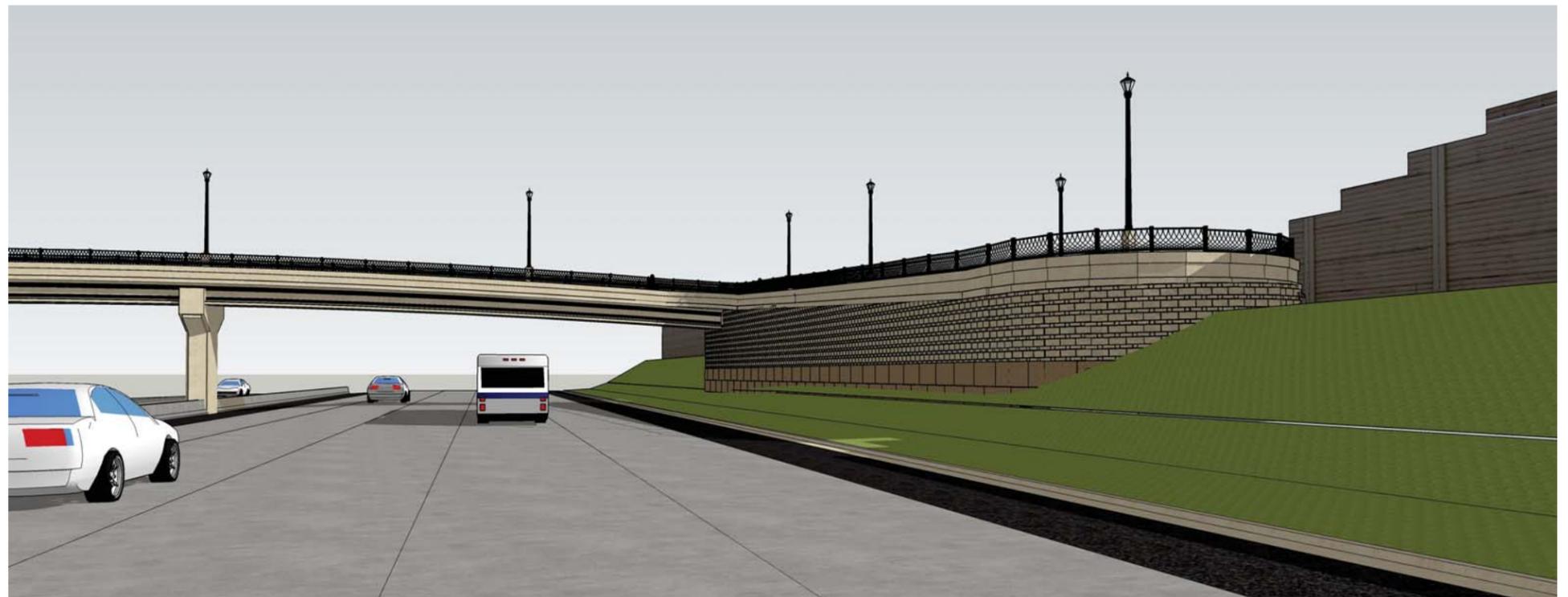
Note: Dimensions shown are approximate to provide general proportions and relative scale for structural elements and aesthetic details. Structural element sizes (column dimensions, cap depth) can be increased as necessary to meet final design capacity requirements (minimum dimensions shown).



Neighborhood Side

Pedestrian ramp, 4.9% max gradient

Public stairway with handrails both side, typical.



Freeway Side

N.B. I-35W to W.B. I-94 Flyover Bridge

Exhibit 2.8.1 - Aesthetic Details

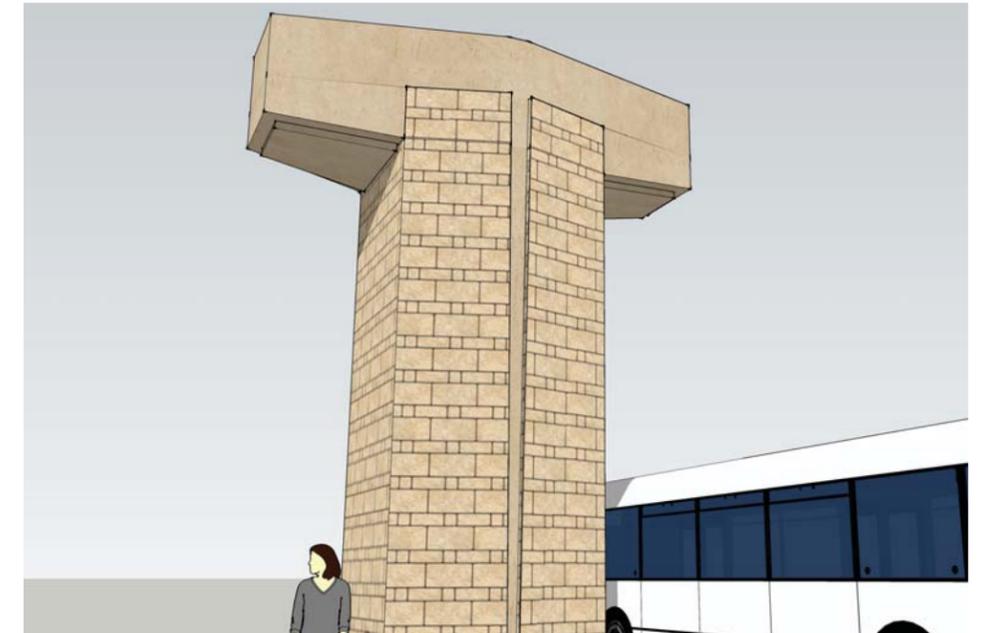
The flyover could have abutments and piers that follow the general architectural details shown below. Further development of the pier shape will be required after selection of the superstructure type.



Steel Girder Pier Visualization



Steel Girder Abutment Wall Precedent



Pier Concept



Box Girder Pier Visualization



Box Girder Abutment Wall Precedent

