REVIEW COMPLETE	
PM	
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UTILITIES	
OTHER	
OTHER	

Oasis Trail
PID 122971
Feasibility Study

June 22, 2026

Prepared for:
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Table of Contents

1. Introduction 1
A. Project History 2
B. Purpose Statement 3
C. Need Elements 3
D. Logical Termini and Independent Utility 4
2. Alternatives 5
A. No Build Alternative 5
B. Build Alternatives 6
i. Segment 1 – Begin Project (Sawyer Point) to Lancaster Street Tunnel 10
ii. Segment 2 – Lancaster Street Pedestrian Access Tunnel to Torrence Road Station 22
iii. Segment 3 – Torrence Road Station to End of Project 44
3. Key Issues 62
A. Safety Analysis 62
i. No Build Alternative 62
ii. Build Alternatives 63
B. SUP Design Issues 63
Segment 1 – Design Considerations 64
Segment 2 – Design Considerations 64
Segment 3 – Design Considerations 65
C. Post-Construction Stormwater Best Management Practices 65
i. No Build Alternative 65
ii. Build Alternatives 65
D. MOT 67
i. No Build Alternative 67
ii. Build Alternatives 67
E. Right-of-Way Requirements 68
i. No Build Alternative 68
ii. Build Alternatives 68
F. Utility Issues 70
i. No Build Alternative 70

ii. Build Alternatives....70
G. Environmental Analysis....70
i. No Build Alternative....70
ii. Build Alternatives....71
4. Public Involvement....74
5. Cost Estimates....75
6. Comparison of Alternatives....76
7. Preferred Alternatives....91
A. Segment 1 – Begin Project to Lancaster Tunnel....91
B. Segment 2 – Lancaster Tunnel to Torrence Road Station....97
C. Segment 3 – Torrence Road Station to End Project....100

List of Figures

Figure 1 – Segments 6
Figure 2 – Desired Shared-Use Path 7
Figure 3 – AREMA Rail Clearance Box 7
Figure 4 – Existing Space Boathouse Drive 11
Figure 5 – Alternative A1 11
Figure 6 – Alternative A2 12
Figure 7 – Alternative A3 13
Figure 8 – Existing Conditions 14
Figure 9 - Alternative B1 14
Figure 10 – Alternative B2 15
Figure 11 – Existing Kemper Lane Potential Access Point 16
Figure 12 – Existing Space 17
Figure 13 – Existing Retaining Wall 17
Figure 14 – Alternative C1 18
Figure 15 – Alternative C2 19
Figure 16 – Lancaster Tunnel 22
Figure 17 – Alternative E2 Shared-Use Path 24
Figure 18 – Hazen Street Access Point 25
Figure 19 – Existing Tie-Back Wall 26
Figure 20 – Alternative F1 26
Figure 21 – Alternative F2 27
Figure 22 – Collins Avenue Bridge 28
Figure 23 – Existing Gladstone Avenue 33
Figure 24 – Gladstone Avenue Access Point 34
Figure 25 – Gladstone Avenue Trash Bins 35
Figure 26 – Existing Torrence Road Station 36
Figure 27 – Alternative G1 377
Figure 28 – Subdivision Improvement Plan 38
Figure 29 - Alternative G2 39

Figure 30 – Alternative G3 40
Figure 31 – Alternative G4 41
Figure 32 – Alternative G5 42
Figure 33 – Existing Hoff Avenue Access....44
Figure 34 – Hoff Avenue Access Point....44
Figure 35 – Existing St. Andrews Street....45
Figure 36 – Alternative H1 46
Figure 37 – Alternative H2 47
Figure 38 – Walworth Tunnel 48
Figure 39 – Walworth Tunnel Access Point....49
Figure 40 – Delta Avenue Bridge 50
Figure 41 – Alternative J1 51
Figure 42 – Alternative J2 52
Figure 43 – Delta Avenue Access Point 54
Figure 44 – Stanley Avenue Bridge....55
Figure 45 – Stanley Avenue Access Point....56
Figure 46 – Congress Avenue Tunnel....57
Figure 47 – Eastern Avenue....57
Figure 48 – Tusculum Avenue Access Point 58
Figure 49 – Donahm Street Access Point....59
Figure 50 – Alternative K1....60
Figure 51– Alternative K2....61
Figure 52 – Preferred Alternative A3....91
Figure 53 – Preferred Alternative B1 92
Figure 54 – Preferred Alternative C3....93
Figure 55 – Preferred Alternative C1....94
Figure 56 – Preferred Kemper Lane Access Point 95
Figure 57 – Preferred Gladstone Avenue....98
Figure 58 – Preferred Alternative G2....99
Figure 59 – Preferred Alternative H2....100

Figure 60 – Preferred Walworth Tunnel Pedestrian Access Point 101
Figure 61 – Preferred Alternative J3.....102
Figure 62 – Preferred Alternative J1.....103
Figure 63 – Preferred Delta Avenue Pedestrian Access Point.....103
Figure 64 – Preferred Tusculum Pedestrian Access Point 104
Figure 65 – Preferred Donham St. Pedestrian Access Point 105
Figure 66 – Preferred Alternative K1 106

List of Tables

Table 1. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 1 (The Montgomery Boathouse Inn to International Friendship Park – Valley of the Sun)

Table 2. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 1 (International Friendship Park – Valley of the Sun)

Table 3. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 1 (International Friendship Park – Valley of the Sun to Rookwood Bridge)

Table 4. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 1 (Rookwood Bridge)

Table 5. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 2 (Lancaster Tunnel Pedestrian Access Point)

Table 6. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 2 (Hazen Street Pedestrian Access Point)

Table 7. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 2 (Columbia Parkway Pedestrian Access Point)

Table 8. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 2 (Torrence Road Station Pedestrian Access Point)

Table 9. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 3 (Hoff Avenue Pedestrian Access Point)

Table 10. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 3 (St. Andrews Street Pedestrian Access Point)

Table 11. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 3 (Walworth Tunnel Pedestrian Access Point)

Table 12. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 3 (Delta Avenue Bridge)

Table 13. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 3 (Delta Avenue, Stanley Avenue, and Tusculum Avenue – Pedestrian Access Point)

Table 14. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 3 (Donham Street Pedestrian Access Point)

Table 15. Evaluation Matrix for the Oasis Trail (PID 122971) Project Alternatives – Segment 3 (Carrel Street – Eastern Terminus)

List of Attachments

Attachment A. OASIS Trail Proposed Access Points Maps

Attachment B. Existing Conditions

Attachment C. Build Alternative Trail Plan Sheets

Attachment D. Build Alternative Pedestrian Access Points

Attachment E. Structure Type Studies

Attachment F. Preliminary BMP Calculation

Attachment G. Environmental Mapping

Attachment H. Public Involvement Summary Report

Attachment I. Preliminary Cost Estimates

1. Introduction

Great Parks of Hamilton County (Great Parks), in coordination with the City of Cincinnati, the Southwest Ohio Regional Transit Authority (SORTA), and the Indiana & Ohio Railway Company (IORY), is advancing the conversion of the northern track of the Oasis rail corridor into a paved shared-use path (PID 122971). This effort is being undertaken in accordance with the guidelines laid out in the *Trail Development Coordination Agreement established on May 13, 2024*.

The proposed shared-use path (SUP) extends from Sawyer Point, near the Montgomery Inn Boathouse, along the downtown Cincinnati riverfront to Carrel Street in the East End neighborhood. The corridor travels through or provides access to several communities, including Mt. Adams, Walnut Hills, East Walnut Hills, Columbia Tusculum, Hyde Park, and the East End. Along its length, the project interfaces with notable landmarks such as the Montgomery Inn, International Friendship Park, and the former Torrence Road Station. The alignment follows the existing Oasis transportation corridor, which parallels the Ohio River.

The project consists of converting the northern railroad track into a paved multi-use path. The path will interact with several notable infrastructure facilities, including the Collins Bridge, the Congress and Delta Avenue pedestrian underpass, the Riverside Drive rail overpass, and the Lancaster and Walworth tunnels.

The southern track has remained in operation for many years, typically seeing about one train movement per week as it continues to serve the dinner train operating on Saturday evenings except during January and February. The dinner train departs from the rear parking lot of the Green Sales Company located at 2172 E. Seymour Avenue, travels south to the Montgomery Inn Boathouse**,** and then returns along the same route.

A Feasibility Study has been conducted to evaluate access points along the corridor, specifically their locations and design options. The study also examines the mainline trail design, with particular attention to areas where design standards may need to be modified due to limited space, structural constraints, or other corridor conditions. The findings of this study will inform design decisions in the next phase of the project, which will advance directly into Stage 1 engineering design.

The project supports long-standing goals to develop a bike trail within Cincinnati's East Community. When complete, the trail will provide a continuous connection between downtown Cincinnati and the Lunken Field area, closing the final gap needed to link Cincinnati to Cleveland via the Ohio to Erie Trail and providing a link to the Little Miami Scenic trail. The corridor will also enhance access for adjacent neighborhoods and businesses.

A. Project History

State Route 32, an east–west highway connecting Cincinnati to Belpre, was constructed in the mid-20th century to provide an improved transportation corridor into and through Appalachian Ohio. Its western terminus is located at I-275, east of downtown Cincinnati. Beginning in the 1990s, Hamilton County and regional partners initiated the Eastern Corridor Program to evaluate how a multimodal transportation corridor could be developed between downtown Cincinnati and the State Route 32 corridor for the benefit of the surrounding communities.

In 1992, A.M. Kinney, Inc. conducted the *Bike Trail in the East Community* study for the City of Cincinnati. The study report, developed in coordination with the City Manager's Office, the Department of Neighborhood Housing and Conservation, and the Department of Public Works, summarized the investigation of a bicycle connection between downtown Cincinnati and the Lunken bicycle corridor. The study recommended developing a trail alignment that would run along the Oasis rail corridor. In February 2001, Cincinnati City Council motioned for a bike/hike trail connection to be built between Lunken and downtown, and a preliminary engineering study was completed by the city as an expansion of the 1992 study. This preliminary engineering study provided an updated alignment for the rail-with-trail concept that reflected changes that had occurred along the corridor over the years including new development, property transfers, and evolving railroad operations. The report presented options to either maintain the rail for continued use or remove the track and use its property for the trail.

A workgroup of participants from 10 organizations collaborated in 2006 and 2007 to initiate the planning strategy for the use of the Oasis line for a bike trail. In 2008, Great Parks, Arcadis (formerly M-E Companies, IBI Group), Ohio River Way, and Human Nature began work on preliminary planning and engineering. A 30% preliminary engineering plan package was produced in 2017, providing an alignment of an asphalt multi-use path to be constructed in place of the northern railroad track. This alignment was presented at an OKI subcommittee meeting in 2018. The Great Parks Comprehensive Master Plan for 2019-2029, adopted in 2019, addressed the need for enhancing pedestrian connections and increasing active transportation access to parks. The ensuing Parks and Facilities Master Plan for 2021-2030, adopted in 2021, specifically listed the Ohio River Trail – The Oasis Corridor as one of four regional trail priorities that would connect the Lunken Loop Trail to the Ohio River Trail at Sawyer Point in downtown Cincinnati. Project development entered a new phase in March 2021 when SORTA, the City of Cincinnati, IORY, and Great Parks executed the *Oasis Corridor – Binding Term Sheet*. This agreement outlined each party's responsibilities and allowed the public agencies to begin pursuing easements and property rights

necessary for trail construction. In May 2024, the same parties executed the *Trail Development Coordination Agreement*, further clarifying roles and enabling SORTA to advance property acquisition for a SUP on the northern track.

B. Purpose Statement

The purpose of this project is to improve active transportation connectivity between Lunken Loop Trail and the Ohio River Trail at Sawyer Point.

C. Need Elements

Regional active transportation advocates have identified regional trail connectivity along the Ohio riverfront in Hamilton County as a critical infrastructure since the 1970s. Trail connectivity along this corridor provides non-motorized vehicles access to parks and recreational activities along the Ohio River and creates alternate transportation options between downtown Cincinnati businesses and surrounding communities, with the goal of eventually providing a cross-county corridor connecting to other regional trails such as the Little Miami Scenic Trail. Multiple transportation entities in the Hamilton County region, including OKI (the area Metropolitan Planning Organization), regional trail advocates, Anderson Township, Clermont County, the Village of New Richmond, and the Ohio Department of Transportation (ODOT), have partnered with Hamilton County and Great Parks to identify opportunities to provide active transportation infrastructure in this corridor.

The Great Parks of Hamilton County regional park district adopted the Comprehensive Master Plan for 2019-2029 to establish goals and priorities for the regional park and trail system. “Create outstanding experiences” was one of five goals identified in the plan, which would be accomplished by creating new shared-use trails, enhancing pedestrian connections, and increasing alternative transportation access to parks. Identified priorities in the Comprehensive Master Plan include building more trails and expanding access for all users. One way to expand access is by enhancing active transportation connections between neighborhoods and parks. Pursuant to the Comprehensive Master Plan, development of the Park and Facilities Master Plan for 2021-2030 considered public input on how to implement the goals and priorities for the park district. Providing a trail connection along the Ohio River between Lunken Loop Trail and the existing Ohio River Trail head at Sawyer Point in downtown Cincinnati is one of four regional trail priorities included in the Parks and Facilities Master Plan. In addition, OKI includes this connection in its 2050 Long Range Transportation Plan and Regional Bicycle Plan and the City of Cincinnati includes the connection in its 2010 Bike Plan.

D. Logical Termini and Independent Utility

The western terminus of the corridor is at Sawyer Point in downtown Cincinnati, where the existing Ohio River Trail alignment is suspended. The eastern terminus of the corridor is at the Lunken Loop Trail that surrounds the Cincinnati Municipal Airport – Lunken Field, which connects to the eastern section of the existing Ohio River Trail and to the Little Miami Scenic Trail.

The proposed project does not rely on any other project to meet the established purpose and need. Additionally, the project is independent of any other transportation improvement in the area and does not preclude any future project. Therefore, independent utility is established for the proposed project.

2. Alternatives

The upcoming section provides an overview of the options being considered for the SUP corridor, outlining both the No-Build and Build alternatives in greater detail. The No-Build alternative reflects current conditions and assumes no new improvements, while the Build alternatives introduce a continuous SUP designed to enhance safety, connectivity, and user experience. These Build options incorporate the desired 12-foot path width and identify areas where physical constraints may limit full implementation. Together, these descriptions outline the available options and how each could shape the corridor moving forward.

A. No Build Alternative

Under the no build alternative, bicycle connectivity within Cincinnati's East Community would not improve, leaving the gap between downtown Cincinnati and the Lunken Field area in place and preventing completion of the connection to the Ohio to Erie Trail and the Little Miami Scenic Trail.

B. Build Alternatives

The corridor is divided into three distinct segments for the build alternative analysis to allow the characteristics, constraints, and opportunities within each portion of the corridor to be presented in a more organized manner. Evaluating Segments 1, 2, and 3 individually allows for more effective comparison of alternatives, assessment of potential access points, and a clearer understanding of how each segment contributes to the overall connectivity and functionality of the proposed trail corridor. See **Figure 1**.

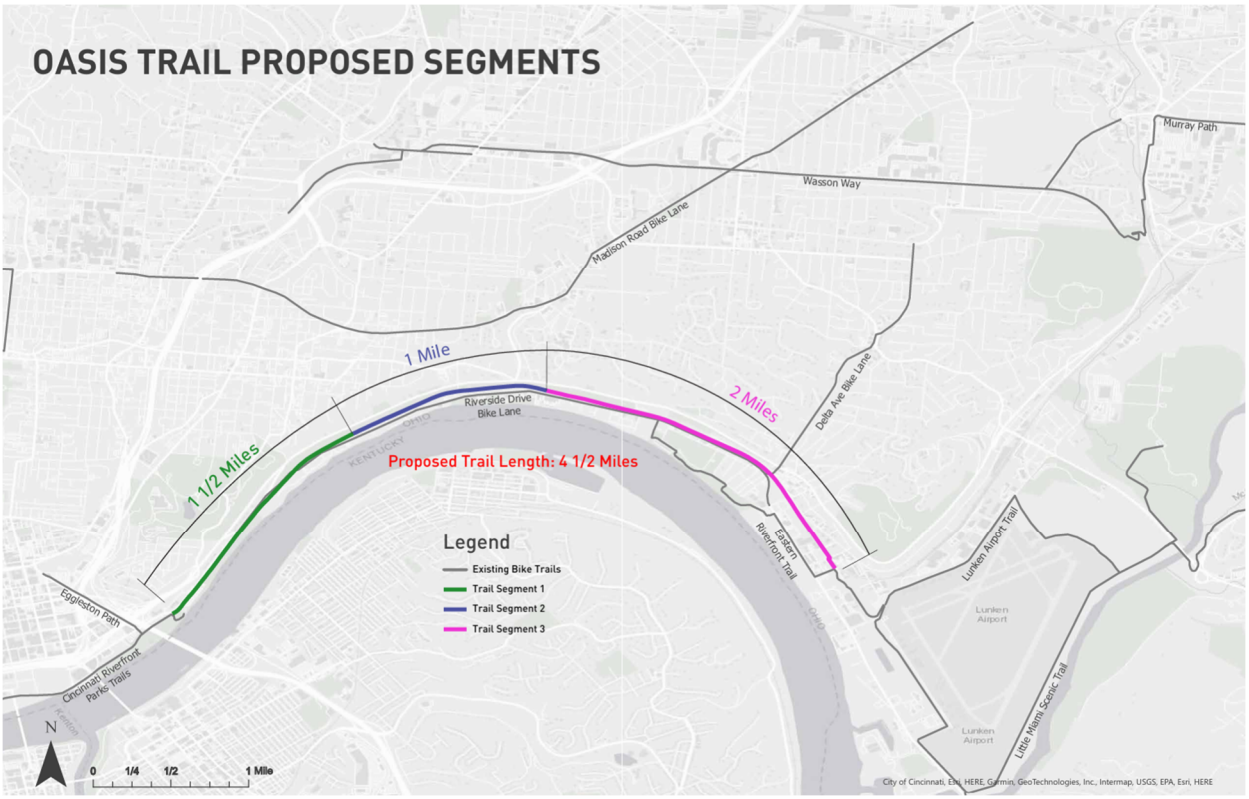


Figure 1 – Segments

Across Segments 1, 2, and 3, the primary objective is to construct a continuous 12-foot-wide shared-use path that reflects Great Parks' desire for a full 12-foot SUP**,** meets current ODOT Multi-Modal Design Guide standards, and comfortably supports two-way bicycle traffic and pedestrian traffic**.** See **Figure 2.** During stage 1 design, opportunities for larger SUP widths - particulary within high pedestrian-congestion zones - will be further evaluated to determine where additional width may improve safety, user comfortm and operational performance.

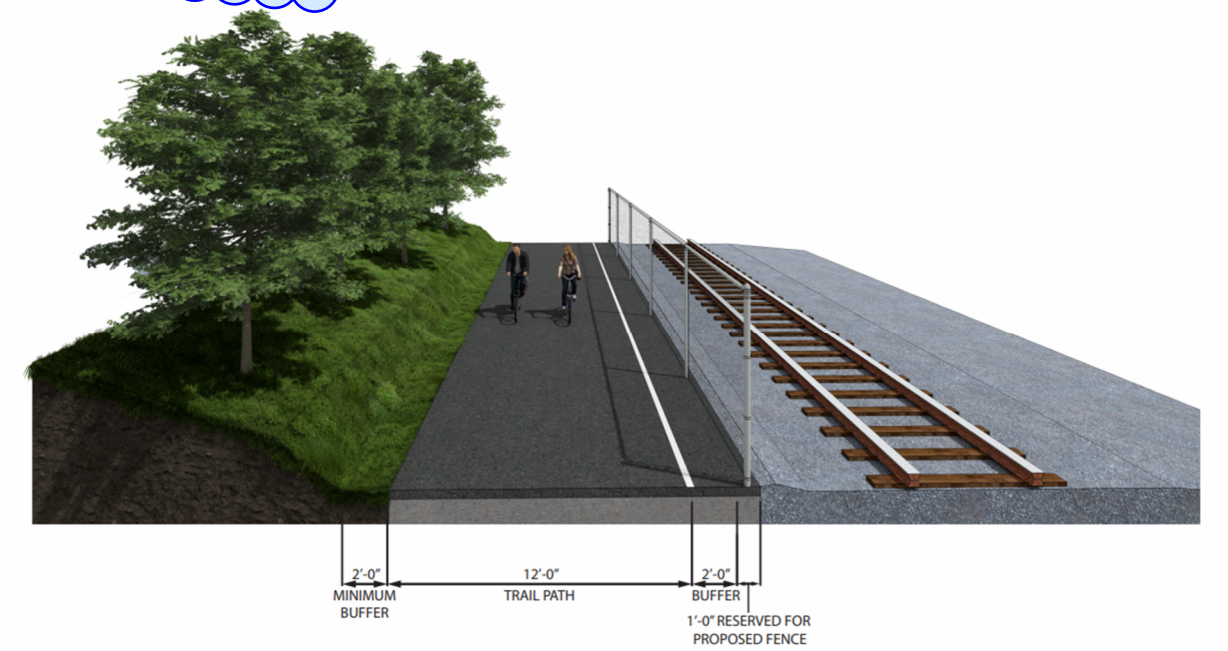


Figure 2 – Desired Shared-Use Path

However, several constrained conditions occur throughout the corridor due primarily to the limited widths of existing bridges, the presence of retaining walls, and the need to maintain AREMA-compliant rail clearances. These constraints restrict where the full trail width can be accommodated and shape the range of feasible design alternatives, including reduced-width trail sections, structural modifications, alignment shifts, or other context-sensitive treatments that balance safety, constructability, cost, and user experience. Refer to **Figure 3** for the applicable clearance envelope and dimensional requirements.

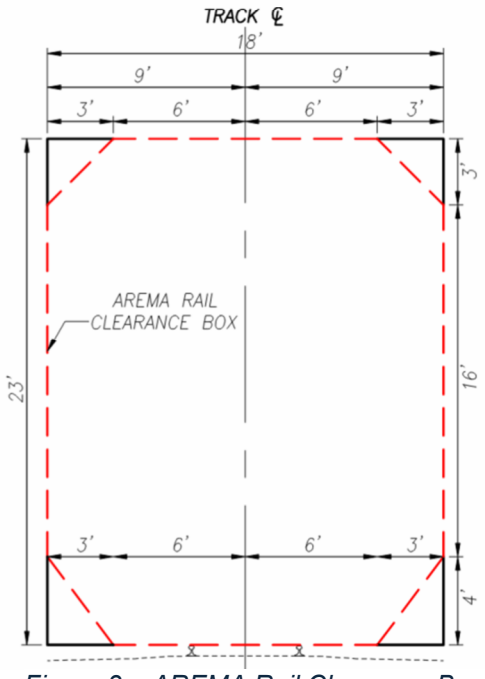


Figure 3 – AREMA Rail Clearance Box

These structural constraints reduce the space available to maintain the desired 12-foot trail width and minimum 2-foot buffers in certain locations. As a result, reduced-width constrained sections and other feasible design treatments were evaluated and are discussed in detail in the sections below.

Across the corridor, potential pedestrian access points were identified to strengthen connections between the trail, nearby neighborhoods, and adjacent business districts. These locations are intended to offer convenient entry and exit opportunities for residents, improve walkability within the East Community, and support local commercial areas by increasing foot traffic and enhancing links between the corridor and surrounding destinations. Several of these access points are expected to function as ADA-accessible connections, with slopes, surfaces, and clearances designed to meet accessibility requirements. Preliminary spacing for each access point has been documented, with detailed distances provided in **Attachment A**.

As part of The Crown urban trail loop, the Oasis Trail will play a key role in connecting several currently disconnected trail segments and improving access between neighborhoods and their business districts. The connection to Walnut Hills will be strengthened through the Oasis link to Sawyer Point and the access point between Kemper Lane and the Rookwood Bridge, creating a direct route via Kemper Lane. Additional access points at Collins and Torrance Station will connect East Walnut Hills to the existing Madison Road bike lane, while the Delta Avenue bike lane will continue to support access from Columbia Tusculum and guide users toward the Mount Lookout Business District.

The most significant challenges to these connections are the steep roadway grades north of the Oasis Trail and the difficulty of crossing Columbia Parkway, a high-speed, multi-lane roadway that presents safety concerns for cyclists and pedestrians. Overcoming these barriers will require additional projects focused on improving safety and comfort at key conflict points, ultimately supporting a more complete and connected trail network for the city.

In addition to access improvements, several locations along the corridor may accommodate trailhead amenities such as bike racks, repair stations, benches, informational signage, and wayfinding elements. Opportunities for scenic viewpoints, including small overlooks or seating areas oriented toward the river, rail corridor, or surrounding hillsides, will be further evaluated during detailed design.

As part of the access-point review, several locations were also identified where street-parking opportunities could be incorporated, either through new pull-off parallel parking or added striping. Walworth Avenue and Hoff Avenue are the two streets with available space to support new on-street parking near proposed access points. Other

access points can rely on existing public parking lots or current on-street parking, particularly in areas such as parks or the recreation center, where public restrooms are also available for trail users. Some of these restroom facilities may have seasonal availability. Additional restrooms may be accessible at nearby restaurants and cafés, though these should not be promoted as official trail amenities.

Emergency access needs were also evaluated throughout the corridor to identify emergency access points where vehicles can enter or exit the proposed Oasis Trail during an emergency. The suitability of each location depends on grading conditions and proximity to adjacent roadways, allowing emergency vehicles to transition smoothly from the right-of-way onto the trail. Tennyson Street, McCullough Street, Carrel Street, and St. Andrews Street are locations where the trail intersects public roads, providing straightforward access for emergency response. Similar conditions exist at Sawyer Point and at the two International Friendship Park access locations, where the trail crosses areas already used by vehicles or lies within park property. The access point between Kemper Lane and the Rookwood Bridge could also support emergency entry using the existing gated connection from Riverside Drive. In addition, the proposed configuration along Gladstone—where the trail briefly joins automobile traffic—would naturally allow emergency vehicles to enter and exit the corridor.

Potential emergency access points were identified at intervals that enable first responders to reach the trail efficiently while minimizing impacts on adjacent properties. Distances between these locations are provided in **Attachment A**, with final spacing and design to be refined during detailed design in coordination with local emergency services.

Across all three segments, certain areas along the trail were identified where design constraints, potential alternatives, and pedestrian access opportunities vary based on surrounding conditions. Identification of these areas help to organize the evaluation of where full-width trail construction is feasible, where reduced-width sections may be required, and where additional treatments—such as retaining walls, bridge modifications, or access improvements—may be necessary. Within these constrained locations, the study identifies where structural limitations occur, outlines the range of feasible design responses, and highlights opportunities for new or improved pedestrian access points, ADA-compliant connections, trailhead amenities, emergency access locations, and potential vista points.

In contrast, areas outside of these constrained locations can accommodate the desired 12-foot path width with standard buffer zones and typical construction treatments. These more flexible areas also present opportunities to incorporate trailhead features—such as bike parking, seating, wayfinding signage, and scenic overlooks—to support user needs and reinforce the trail’s role as a community asset.

The alternatives associated with both the constrained areas and the pedestrian access opportunities are discussed in the following sections to provide a clear understanding of the design considerations and tradeoffs associated with each segment of the corridor. The build alternatives and pedestrian access alternatives within each segment are described below, proceeding from the beginning of the project (Sawyer Point) to the Ohio River Trail at Carrel St.

Segment 1 extends from Sawyer Point near The Boathouse and follows the existing railroad corridor to the Lancaster Street pedestrian access tunnel. The segment includes pedestrian access points at Friendship park and a potential pedestrian access point near the Kemper Lane/Rookwood Bridge.

Segment 2 begins at the Lancaster Street pedestrian access tunnel and follows the existing railroad corridor to the vicinity of the former Torrence Road Station. This segment includes several potential pedestrian access points at Lancaster Street, Hazen Street, Gladstone Avenue, and Torrence Road Station.

Segment 3 extends from the former Torrence Road Station area to the eastern terminus at the Carrel Street connection with the Ohio River Trail. This segment includes potential pedestrian access points at St. Andrews Street, the Walworth Tunnel, Delta Avenue, Stanley Avenue, Eastern Avenue, Donham Street, and the Carrel Street connection.

Additional discussion is provided in the sections that follow.

Segment 1 – Begin Project (Sawyer Point) to Lancaster Street Tunnel

1. Montgomery Inn Boathouse Drive to International Friendship Park – Plaza of the Sun

Three build alternatives were developed for this portion of Segment 1. These alternatives are the following:

Alternative A1: In this section, the SUP utilizes the existing space behind the bollard fence line along the abandoned railroad corridor. See **Figure 4.**



Figure 4 – Existing Space Boathouse Drive

This area provides sufficient width to accommodate a constrained 10-foot-wide SUP with 2-foot buffers between the existing bollard fence and the proposed fence separating the trail from the active railroad. To fit the trail within these limits, the SUP will be paved up to the proposed fence line. See **Figure 5.**

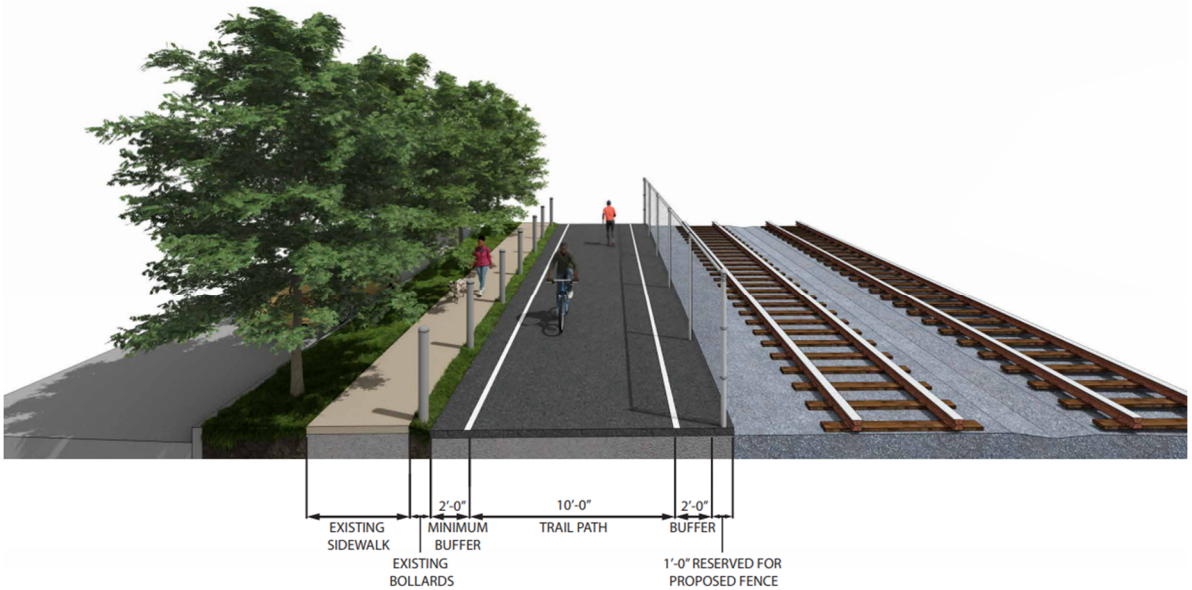


Figure 5 – Alternative A1

Alternative A2: In this alternative, the SUP occupies the space along the abandoned railroad corridor after removal of the existing sidewalk and bollard fence. This configuration allows for an 11-foot-wide SUP with 2-foot buffers on both sides. To support stormwater quality, an 11-foot tree lawn matching the trail width will be added between the existing curb line and the proposed SUP. The trail surface will extend to the proposed fence line separating the trail from the active railroad. See **Figure 6.**

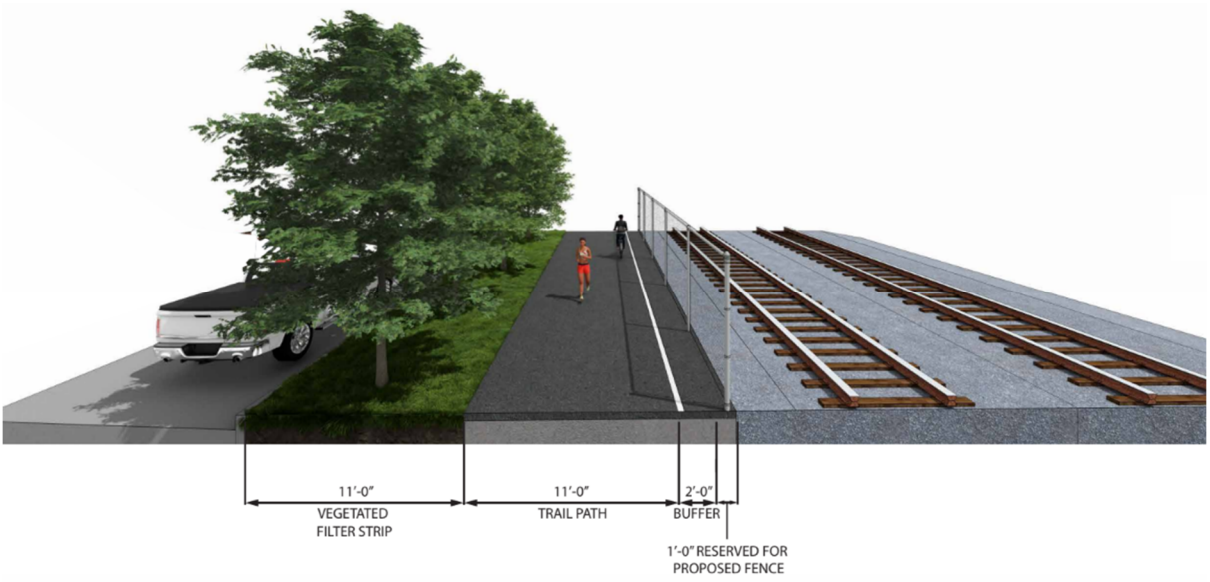


Figure 6 – Alternative A2

Alternative A3: In this alternative, the SUP also utilizes the abandoned railroad corridor following removal of the existing sidewalk and bollard fence. This alignment accommodates a 12-foot-wide SUP with 2-foot fence line buffer. A 10-foot tree lawn will be provided to avoid disturbing the root structures of existing trees. See **Figure 7**.

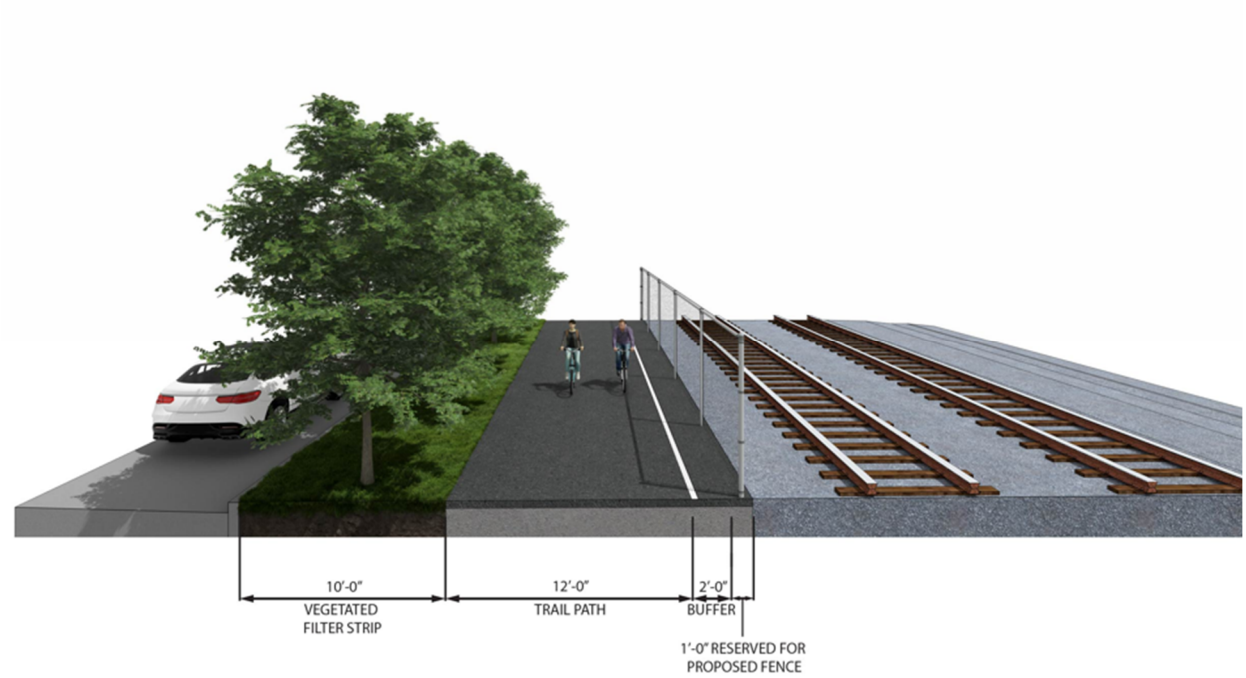


Figure 7 – Alternative A3

2. International Friendship Park – Plaza of the Sun

Alternative B1: Within this section, the SUP follows the available space between the existing retaining wall and the active railroad line, while maintaining required rail clearances and providing a continuous trail connection. See **Figure 8**.



Figure 8 – Existing Condition

This corridor can accommodate a constrained 8-foot-wide SUP with 2-foot buffers on both sides. To fit the trail within the existing limits, the trail surface will extend directly to both the existing retaining wall and the proposed fence separating the trail from the railroad. This constrained condition continues for approximately 200 feet before the corridor widens enough to support the preferred 12-foot trail width. This alignment reflects the most feasible configuration and demonstrates how the trail can be accommodated without major structural modifications. See **Figure 9**.

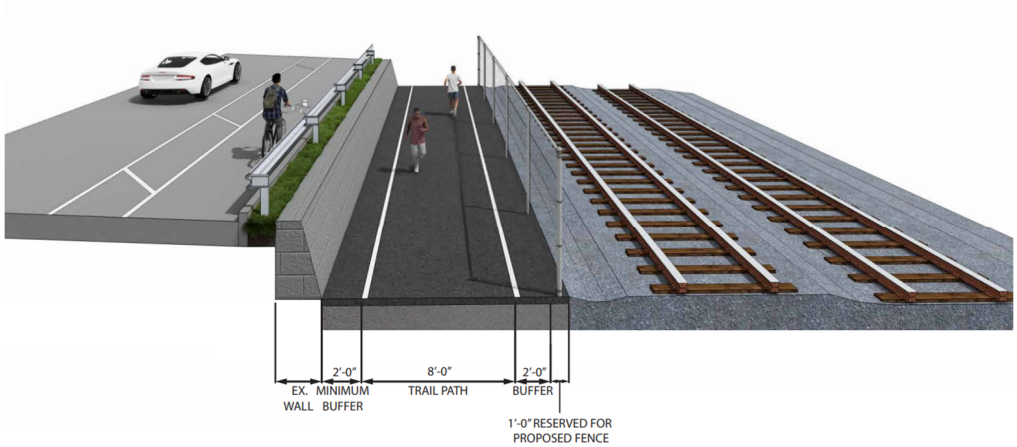


Figure 9 - Alternative B1

Alternative B2: In this alternative, the SUP is positioned between a new retaining wall and the proposed fence along the active railroad. This configuration provides a full 12-foot-wide SUP with 2-foot buffers on both sides. To achieve this width, the existing retaining wall must be removed and rebuilt approximately five feet into Riverside Drive, occupying the space currently used by the on-street bicycle lane. The bicycle lane buffer would be removed to accommodate the shifted wall. This condition continues for approximately 200 feet until the corridor widens enough to fit the desired 12-foot width within the existing wall location**.** See **Figure 10**.

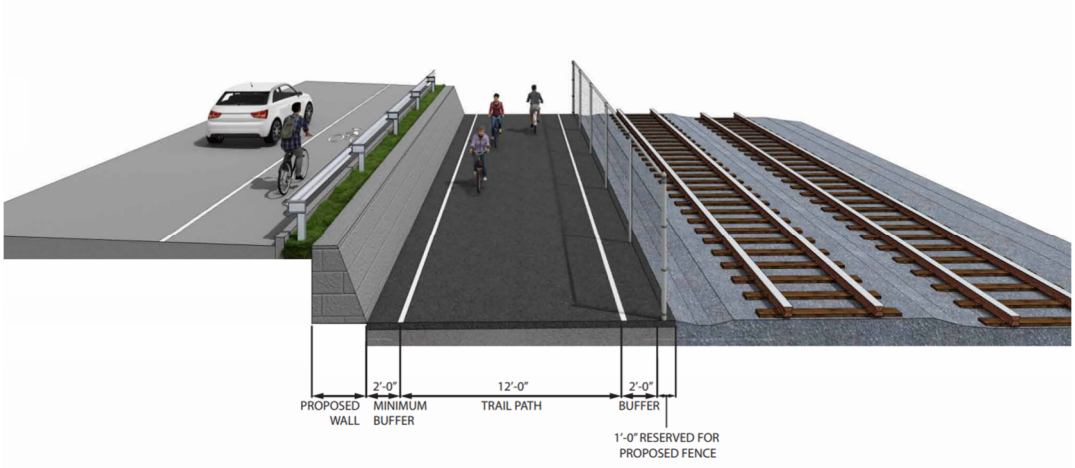


Figure 10 – Alternative B2

3. Kemper Lane Pedestrian Access Point to the Rookwood Bridge

A potential **pedestrian access point** could be established at the existing drive near Kemper Lane on Riverside Drive, providing a convenient and intuitive connection between the Walnut Hills neighborhood and the proposed trail corridor. The existing drive offers a direct approach to the SUP, making it well suited for an ADA-accessible access point with minimal grading or structural modifications. The existing swing gate would be removed, and any broken pavement between the current sidewalk and the proposed SUP would be replaced. This location would give nearby residents a safe, visible entry to the trail and strengthen overall network connectivity within the East Community. Its suitability—along with spacing relative to other access points and emergency access needs—will be further refined during detailed design. See **Figure 11**.



Figure 11 – Existing Kemper Lane Potential Access Point

Alternative C1: This alternative places the SUP within the narrow corridor between the existing retaining wall and the active railroad line **See Figure 12**, making use of the limited space available while maintaining required rail clearances. The existing retaining wall, shown in **Figure 13**, defines the northern edge of the trail envelope, while the active track limits expansion to the south.



Figure 12 – Existing Space



Figure 13 – Existing Retaining Wall

Within these constraints, the alignment is designed to preserve continuous trail connectivity and accommodate appropriate buffer widths wherever feasible. This corridor can support a constrained 9-foot to 10-foot-wide SUP with 2-foot buffers on both sides. To fit the trail within the existing limits, the trail surface will extend directly to both the retaining wall and the proposed fence separating the trail from the railroad. This constrained condition continues for approximately 600 feet before reaching the bridge. See **Figure 14**.

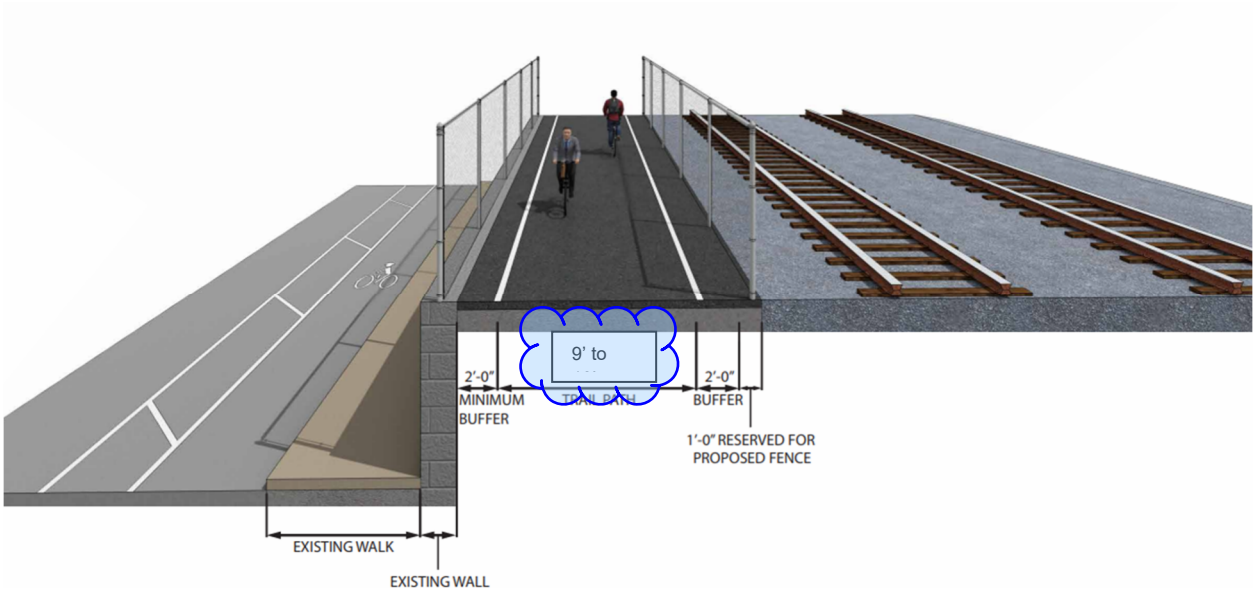


Figure 14 – Alternative C1

Alternative C2: This alternative positions the SUP between a new retaining wall and the proposed fence along the active railroad, allowing for a full 12-foot-wide SUP with 2-foot buffers on both sides. Achieving this width requires removal of the existing retaining wall and construction of a new wall in a shifted alignment. To accommodate the revised wall location, the existing sidewalk and curb inlets will be relocated, and the on-street bicycle-lane buffer will be removed. Within this configuration, the alignment maintains required rail clearances and provides a consistent, unobstructed trail section through the corridor. This condition extends for approximately 600 feet. See **Figure 15**.

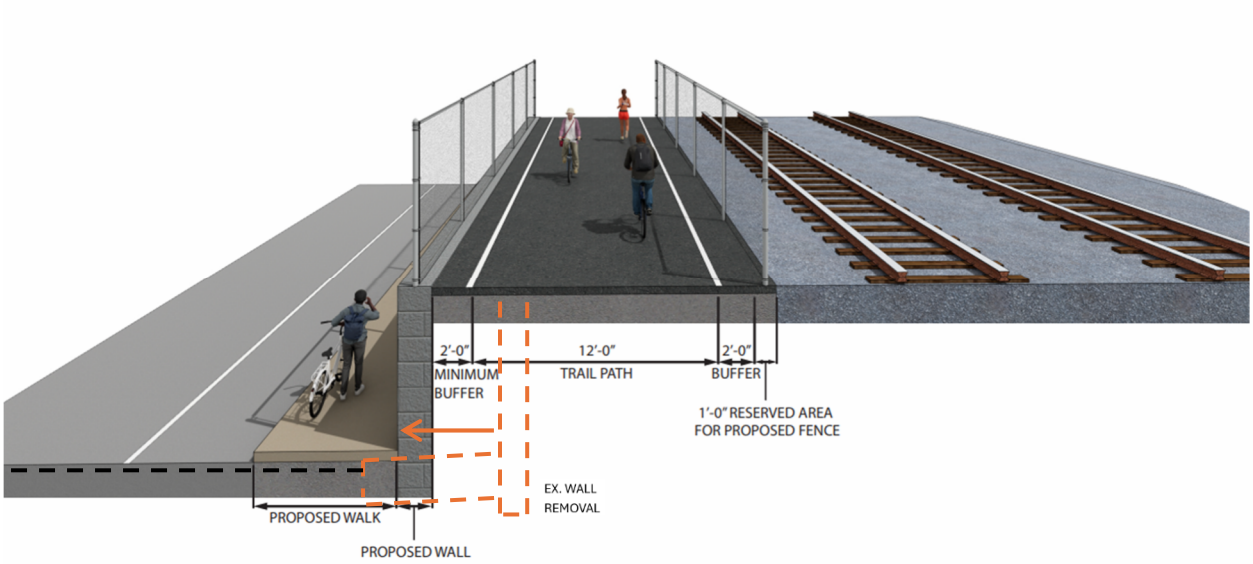


Figure 15 – Alternative C2

Alternative C3: This alternative allows for a full 12-foot SUP with 2-foot buffers on both sides by removing the inactive north track and shifting the active south (main) track approximately 5 feet to the south to accommodate the trail. A sidetrack located south of the main line—from the Rookwood Bridge west to the entrance of International Friendship Park—would also be shifted to match the new alignment. To the south, the relocated tracks would tie back into the existing alignment where the current tracks curve toward the shifted position. To the north, the main line would reconnect through a realigned horizontal curve. In total, approximately 2,750 track-feet of main line and 1,050 track-feet of siding, including the turnout at the north end of the siding, would be shifted as part of this rail realignment.

4. Rookwood Bridge

The Rookwood Bridge is a built-up steel through-plate girder bridge with built-up box floor beams oriented perpendicular to the substructures (abutments and pier). The floor beams frame into the plate girders or bear directly on the substructures at their ends. A deck plate above the floor beams contains ballast that supports the rail ties and tracks. B&N performed a bridge assessment that was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. This assessment is included within **Attachment E** and provides recommendations regarding the existing condition of the bridge. It should be noted that the Southwest Ohio Regional Transit Authority (SORTA) has released the referenced 2024 repair plans for construction bidding, with submissions due in June 2026.

In addition to the work recommended in the bridge assessment report, additional modifications will be required to convert the bridge for shared-use trail purposes. Two trail widths are under consideration for the Rookwood Bridge: a full-width 12-foot trail and a temporarily narrowed 8-foot trail.

8-Foot-Wide Trail on Rookwood Bridge

Alternative D1: If an 8-foot-wide trail is carried over the existing Rookwood Bridge, minimal additional structural work would be required. Within the proposed trail area, ballast, rail ties, and tracks would be removed to create space for construction of the full-depth trail section. Protective fencing would be required on both sides of the trail to prevent users from interfacing with the active rail lines and to protect users from falling from the bridge.

This constrained condition continues along the full length of the bridge approx. 100 feet

Estimated Bridge Construction Cost: $50,000

12-Foot-Wide Trail on Rookwood Bridge

With the current configuration of the two railroad tracks, there is insufficient space to maintain the southern rail line and construct a 12-foot-wide trail within the footprint of the existing northern track. Two alternatives are proposed to accommodate a 12-foot-wide trail on the Rookwood Bridge: (1) maintain the southern rail line in its current location, or (2) relocate the southern rail line.

Alternative D2: This alternative provides a full 12-foot-wide shared-use trail with 2-foot buffers on both sides. Maintaining the southern rail line in its current location while providing the full trail width would require construction of a moment slab that overhangs the existing northern girder by approximately 5 feet 6 inches. A moment slab is designed with sufficient counterbalance on the opposite side such that loads applied to the overhanging portion do not result in overturning. Preliminary calculations show that

the slab would be 1’ thick in the overhang and 2’ thick in the portion over the current bridge to provide the counterbalance weight that can support the dead and live loads in the overhang portion. A 5 feet 6 inch overhang is well beyond standard and would be extremely difficult and costly to construct.

Estimated Bridge Construction Cost: $425,000

Alternative D3: The Rookwood Bridge was originally designed and constructed to accommodate four rail lines; however, only two were ultimately built. As a result, sufficient width exists to relocate the southern rail line farther south, allowing construction of a full-width trail without the addition of major structural elements. Under this alternative, minimal additional bridge work would be required. Within the proposed trail area, ballast, rail ties, and tracks would be removed to allow for construction of the full-depth trail section. Protective fencing would be required on both sides of the trail to separate trail users from active rail operations and to provide fall protection.

Estimated Bridge Construction Cost: $50,000

Implementing this configuration would involve removing the inactive north track and shifting the active south (main) track approximately 5 feet to the south to accommodate the trail. A sidetrack located south of the main line—from the Rookwood Bridge west to the entrance of International Friendship Park—would also be shifted to match the new alignment. To the south, the relocated tracks would tie back into the existing alignment where the current tracks curve toward the shifted position. To the north, the main line would reconnect through a realigned horizontal curve. In total, approximately 2,750 track-feet of main line and 1,050 track-feet of siding, including the turnout at the north end of the siding, would be shifted as part of this rail realignment.

What would the costs for realignment be?

Segment 2 – Lancaster Street Pedestrian Access Tunnel to Torrence Road Station

1. Lancaster Street Pedestrian Access Tunnel

The Lancaster Tunnel is a reinforced concrete structure constructed in 1914 to provide pedestrian access from Riverside Drive to the northern railroad track. The tunnel is currently in a state of severe degradation and has been closed to pedestrian use. See **Figure 16**.



Figure 16 – Lancaster Tunnel

Based on its present condition, rehabilitation is not considered feasible, and use of the existing tunnel or retaining walls for the trail is not recommended. Three alternatives were evaluated: abandonment, rehabilitation, and replacement. Relocating the tunnel was not evaluated, as it offers no significant benefit and would likely result in higher costs due to the need to abandon the existing structure.

Alternative E1: Rehabilitation

The tunnel exhibits significant structural distress, including large cracks in the headwall (approximately 2 inches wide), concrete crushing at the tunnel crown, and heaving of the tunnel floor. These conditions indicate that the tunnel walls and foundations have shifted inward.

The retaining walls at the north end of the tunnel, which support the stairway, display multiple extensive longitudinal cracks (up to 1.5 inches wide) and appear to be separating from the tunnel structure.

Based on these findings and previous inspection reports, the advanced state of deterioration precludes rehabilitation to a condition suitable for public use. Rehabilitation is therefore not recommended.

Estimated Tunnel Construction Cost: N/A

Alternative E2: Abandonment

This alternative involves permanently discontinuing pedestrian use of the existing tunnel. The tunnel would be blocked from public access by either constructing walls at the entrances or filling the tunnel.

If only the entrances are sealed, the structure would continue to deteriorate—potentially at an accelerated rate due to increased humidity—and could fail while trail users or rail traffic are present above. Therefore, filling the tunnel is recommended.

Due to the geotechnical properties of the Oasis Corridor, the fill material should be lightweight to minimize fill-induced settlement.

Estimated Tunnel Construction Cost: $150,000

Pedestrians could instead be directed to a potential at-grade connection at nearby Hazen Street.

This abandonment of the tunnel allows the SUP to maintain a full 12-foot width with 2-foot buffers on both sides as it passes above the former tunnel location. See **Figure 17**.

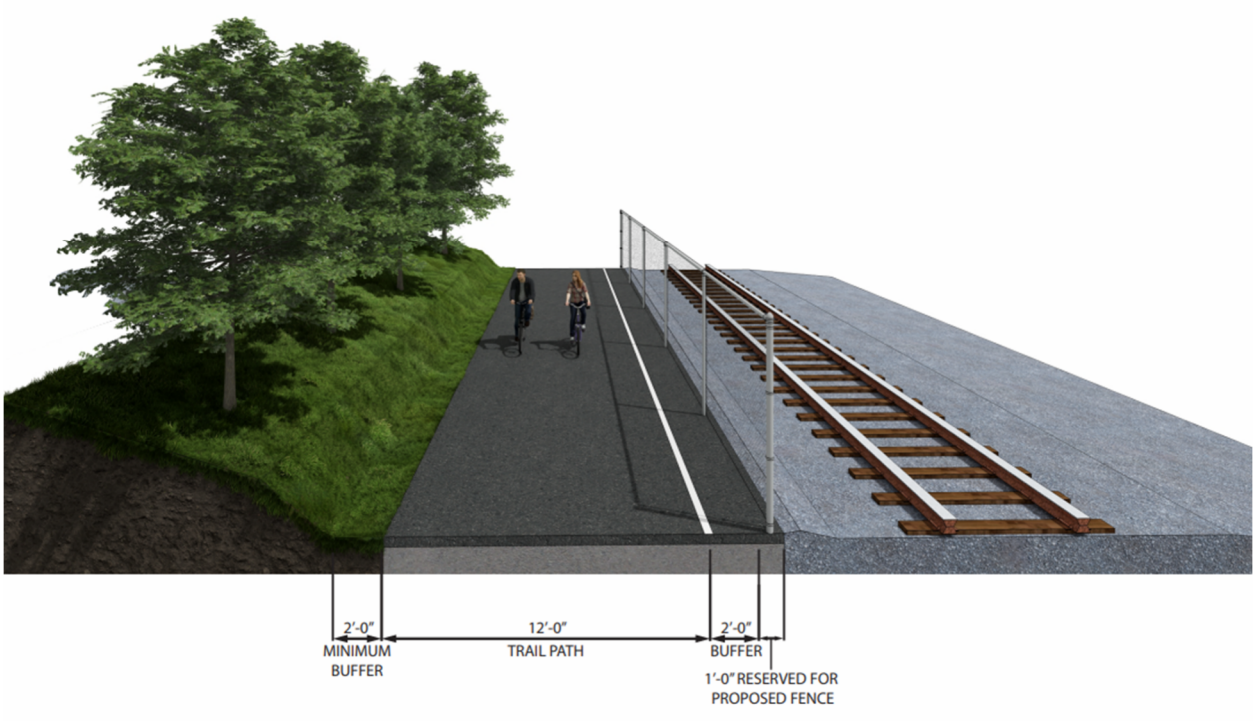


Figure 17 – Alternative E2 Shared-Use Path

Alternative E3: Replacement

Replacement of the tunnel would require removal of the existing structure and installation of a precast concrete three-sided arch. The existing stairs and retaining walls would be replaced with an ADA- and ODOT-compliant ramp.

This alternative would require a long-term temporary closure of the railroad tracks, including removal and replacement of the southern tracks. Removal of the tunnel would necessitate excavation of the fill material above the structure. Due to the compromised condition of the existing tunnel, partial removal is not recommended; complete removal should occur prior to new construction.

Construction of the new tunnel would include a three-sided precast concrete structure and ADA- and ODOT-compliant ramps leading to the trail. The ramp would ascend at a slope of 1 vertical to 13 horizontal, with 5-foot landings provided for every 30 inches of vertical rise. Meeting these requirements would result in a ramp approximately 350 feet in length.

A retaining wall along the trail side of the ramp would extend the full length of the ramp and vary in height from approximately 20 feet to 1 foot. Given the site's geotechnical conditions, anchoring of this wall is anticipated.

To minimize disturbance to the hillside north of the corridor, construction of a drilled shaft retaining wall behind the existing wall is recommended. This wall would vary in height from approximately 30 feet to 1 foot and would require multiple rows of ground anchors along most of its length.

The retaining walls along the north side of the corridor would be significant in size and complex to construct due to the soil conditions and slopes typical of the site. These walls would be the main cost driver of the replacement alternative.

Estimated Tunnel Construction Cost = $43,000,000

2. Hazen Street Pedestrian Access Point

The Hazen Street location presents an opportunity to establish a new pedestrian access point that would strengthen connectivity between the surrounding neighborhood and the proposed SUP corridor. Although Hazen Street does not continue across the rail corridor and dead-ends before the tracks, and no formal crossing or designated access route exists at this location, its proximity to Riverside Drive and the rail line makes it a logical and intuitive connection point for trail users. Establishing a new crossing at this location would enhance local mobility and improve trail visibility for nearby residents, however its implementation would require coordination with the railroad to ensure the crossing is designed in compliance with railroad requirements. See **Figure 18**.



Figure 18 – Hazen Street Access Point

Alternative F1: In this alternative, the SUP descends from the proposed alignment, crosses the southern active track, and continues over the existing tie-back wall, see **Figure 19**, before transitioning down Hazen Street to Riverside Drive using a 12-foot-wide, ADA-compliant switchback pathway.



Figure 19 – Existing Tie-Back Wall

The design would follow the principles outlined in ODOT's Multimodal Design Guide**,** incorporating accessible grades, appropriate turning radii, and required landings where slopes reach up to 7.69%. The alignment affects six private parcels, and the inclusion of intermediate landings ensures compliance with accessibility standards as the trail descends to Riverside Drive. See **Figure 20**.

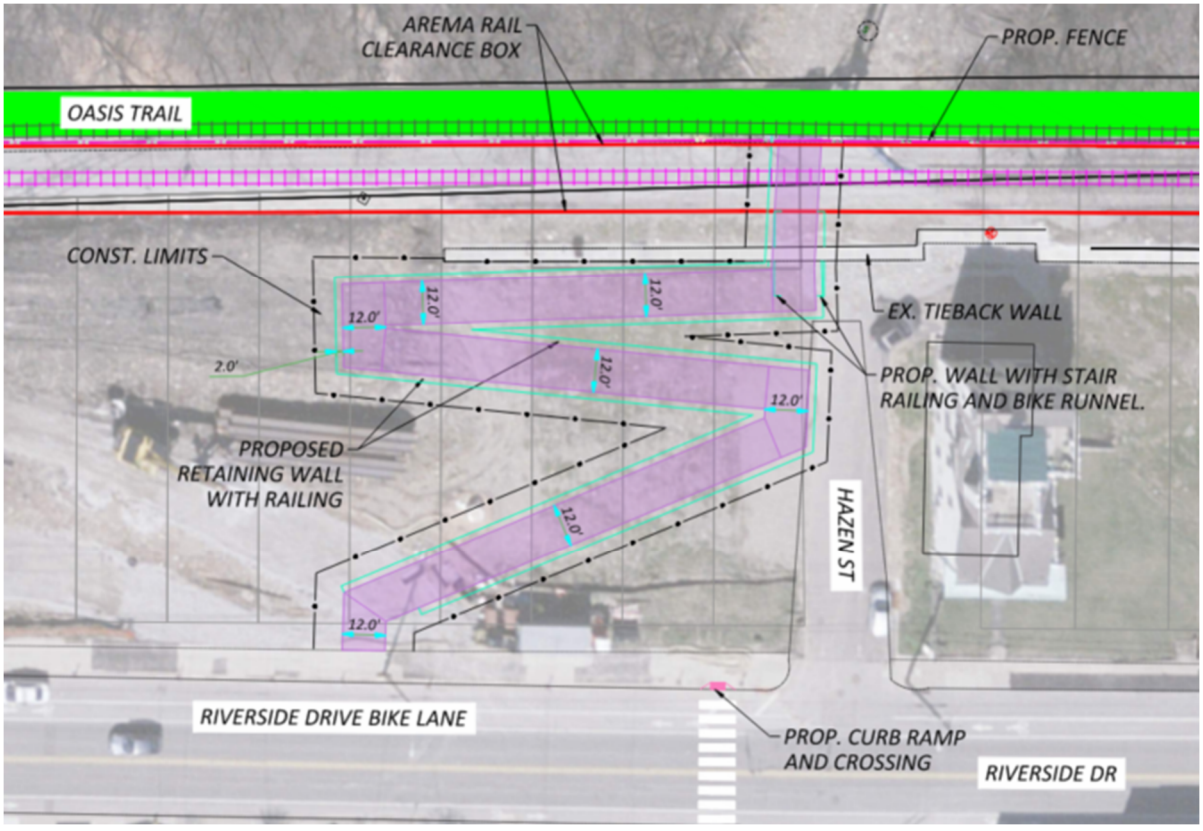


Figure 20 – Alternative F1

Alternative F2: This alternative utilizes the existing steep roadway grade (16.0%) along Hazen Street by introducing a 10-foot-wide **side path** that follows the current right-of-way and existing street grades. To rise above the existing tie-back wall, the design incorporates a set of proposed steps with an adjacent runnel to support bicycle and stroller access. The alignment affects one private parcel and provides a direct, space-efficient connection. See **Figure 21**.

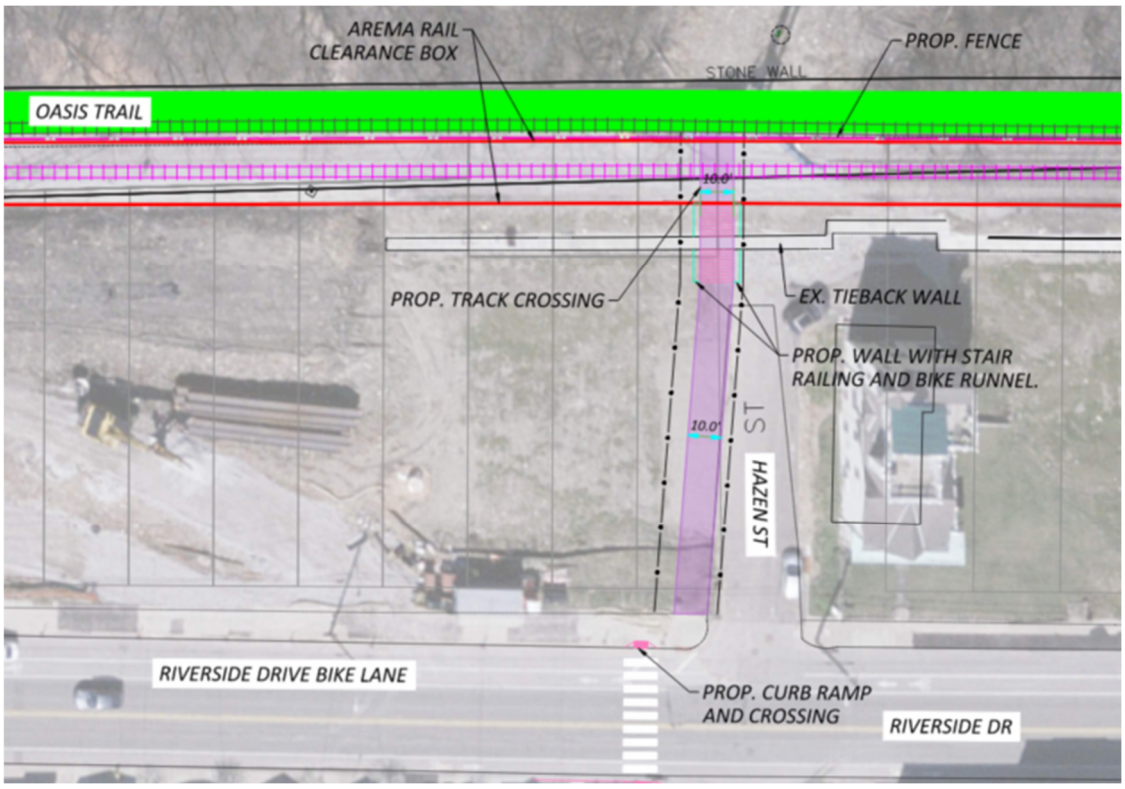


Figure 21 – Alternative F2

3. Collins Avenue Bridge

The existing bridge over Collins Avenue is a through-girder superstructure consisting of three through-plate girders that carry two railroad tracks over Collins Avenue. See **Figure 22**.



Figure 22 – Collins Avenue Bridge

The bridge was rehabilitated in 2021. Major work items included heat straightening of damaged steel, in-kind replacement of portions of the backwalls, and repainting of the structure.

The bridge currently provides a minimum vertical clearance of 10'-6", located beneath the northern girder (G1) over the northbound traffic lane. Girder 1 has a history of vehicular impacts and was subject to the heat straightening noted above. The existing superstructure has an approximate depth of 22 inches from the bottom of girder to the top of ballast, which would become the top of the proposed trail. Original construction plans are not available; therefore, information regarding foundation design is unknown. The rear (west) abutment appears to be a full-height reinforced concrete abutment, while the forward abutment appears to consist of a reinforced concrete cap on a stone abutment.

Four superstructure options were evaluated using the 12-foot SUP section:

- Option 1 – Composite Prestressed Concrete Box Beams
- Option 2 – Reinforced Concrete Slab
- Option 3 – Prefabricated Steel Pedestrian Truss
- Option 4 – Reinforced Concrete Deck on Existing Superstructure

All options were analyzed using a 90 psf pedestrian live load and an H10 vehicular live load in accordance with the AASHTO LRFD Guide Specifications for Design of Pedestrian Bridges.

Utilities

Several utilities are located near the bridge, including underground telecommunications, water, and gas lines, as well as overhead electric lines. One utility pipe is carried by the bridge; it is located underground outside the bridge limits and runs along the south face of Girder 2 (G2).

Option 1 – Composite Prestressed Concrete Box Beams

This option involves removing all existing bridge material north of the middle through-girder (G2) and constructing a new, independent trail superstructure. G2 and G3 would remain in service for railroad operations.

The proposed superstructure would consist of CB12-48 prestressed concrete box beams designed in accordance with archived ODOT Standard Drawing PSBD-1-13, bearing on the existing abutments. A minimum 6-inch-thick concrete deck would be cast on the beams, resulting in an overall superstructure depth of approximately 19 inches, including camber effects. Concrete barriers (2 feet high by 1 foot wide) would be constructed on the deck, with fencing mounted to the barriers. This configuration allows drainage to be controlled and prevents runoff from discharging onto the railroad structure or roadway below.

Given the history of vehicular impacts at this location, prestressed concrete box beams may present long-term maintenance considerations. Per ODOT Bridge Design Manual Section 404.4.1, damage to box beams can require specialized repair techniques. Because these beams rely on bond between concrete and prestressing strand, timely repair of cracks and spalls is critical to maintaining structural performance.

Beam erection would require crane access. Due to the steep grade of Collins Avenue, crane operations from the roadway are likely impractical, and use of the railroad corridor is anticipated. Delivery trucks would likely stage north of the bridge on Collins Avenue to minimize reach requirements and avoid conflicts with overhead utilities. Tree removal or trimming would also be required.

Option 2 – Reinforced Concrete Slab

This option consists of removing all existing bridge material north of G2 and replacing it with a new reinforced concrete slab superstructure, independent of the railroad structure. G2 and G3 would remain in service.

The proposed structure would consist of a 16-inch-thick reinforced concrete slab supported on the existing abutments. Concrete barriers and fencing would be similar to Option 1, providing consistent drainage control.

Construction would require temporary closure of Collins Avenue during formwork, shoring, and curing operations.

This option is expected to be the most resilient to vehicular impacts. Due to the roadway alignment, impacts are likely to occur at relatively low speeds and would likely result in minor surface repairs.

Option 3 – Prefabricated Steel Pedestrian Truss

This option includes removal of all existing bridge material north of G2 and replacement with a prefabricated steel pedestrian truss, independent of railroad operations.

The truss would consist of weathering steel with an asphalt walking surface. To minimize structural depth, an underhung floor beam configuration would be used. Preliminary estimates indicate an overall depth of approximately 1 foot-6 inches from the walking surface to the lowest structural element.

Concrete barriers and fencing would be consistent with the previous alternatives.

Prefabricated trusses are typically constructed from tubular steel members with welded connections. For a structure of this size, member sizes would be relatively small, resulting in limited lateral impact resistance. Given the history of vehicular impacts at this location, this option may present maintenance challenges and could require trail closures for inspection and repair following impacts.

Erection would require crane access similar to Option 1 and would likely utilize the railroad corridor. Tree removal or trimming would also be required.

Option 4 – Reinforced Concrete Deck on Existing Superstructure

This option retains the existing superstructure with minor modifications. The northern railroad track and ties would be removed and replaced with a reinforced concrete deck. The existing minimum vertical clearance of 10'-6" would remain unchanged.

To reduce the frequency of vehicular impacts, installation of low-clearance warning bars is recommended. While this alternative does not improve vertical clearance, the existing structure has demonstrated resilience to impacts.

Vertical Clearance

The purpose of the superstructure options is to evaluate options for increasing vertical clearance over Collins Avenue for the proposed trail crossing. The existing minimum clearance is 10'-6" under G1, while the clearance under G2 is approximately 11'-9".

ODOT standards require a minimum vertical clearance of 14'-6" over local roads, with an additional 1 foot for pedestrian bridges, resulting in a total requirement of 15'-6" per the ODOT Location and Design Manual (L&D), Volume 1.

Each option was evaluated to determine the required increase in trail profile to meet the following criteria: maintain existing clearance, exceed G2 clearance by 1 inch, or achieve 15'-6" clearance.

Profile Increase Required for Vertical Clearance			
Superstructure Alternative	**Maintain Existing***	**G2 Controls****	**Provide 15'-6"**
Option 1	0'-0"	1'-1"	4'-9"
Option 2	0'-0"	0'-10"	4'-7"
Option 3	0'-0"	1'-0"	4'-8"
Option 4	0'-0"	N/A	N/A

* Existing minimum vertical clearance is 10 feet 6 inches under G1 and over northbound lane.
** Existing vertical clearance at G2 is 11 feet 9 inches.

Limitations and Considerations

Change in Exposed Height of Abutment for Profile Changes			
Superstructure Alternative	**Maintain Existing**	**G2 Controls**	**Provide 15'-6"**
Option 1	0%	8%	36%
Option 2	0%	6%	35%
Option 3	0%	8%	36%
Option 4	0%	N/A	N/A

Average exposed height of the abutment under the proposed trail is 13.1 feet.

Due to the absence of original construction plans, the capacity of the existing abutments and foundations cannot be verified. Therefore, the ability of the abutments to support additional loads associated with profile increases is uncertain. Potential mitigation measures include the use of lightweight fill.

Adjustments to the trail profile can be made without impacting the southern active railroad track; however, grading cannot extend into required railroad clearances. As a

result, a short retaining wall or self-stabilizing material would be required to accommodate grade transitions.

Estimate of Probable Costs

Estimated constructs costs have been calculated for each of the proposed superstructure alternatives. ODOT's Summary of Contracts Awarded and bid data from similar projects were used to determine the costs of each of the major bridge work items. The cost estimates shown in this report are based on 2025 cost data and contain no contingency or inflation as they have been applied to the overall project costs by the prime consultant.

The primary goal of Options 1, 2, and 3 is to raise the minimum vertical clearance to reduce the amount of bridge impacts by vehicles on Collins Ave.; therefore, the construction cost estimate for these alternatives includes the costs to raise the profile needed to make G2 the location of minimum vertical clearance. Option 4 cannot accommodate changes in vertical clearance without major impacts to the adjacent railroad and does not include any costs for profile adjustments.

Construction Cost Estimate	
Superstructure Alternative	**Initial Construction Cost**
Option 1	$280,000
Option 2	$270,000
Option 3	$330,000
Option 4	$100,000

Recommendation

B&N does not recommend the use of Options 1, 2, or 3 without adjustments to the trail profile as it would not significantly increase the vertical clearance and the existing superstructure has proven to be very resilient to vehicular impact. Due to the large cost difference between B&N recommends the use of Option 4 with 12ft SUP. As stated above we would also recommend installing low clearance bars over Collins Avenue to help reduce vehicular impacts to the bridge.

4. Gladstone Avenue

Gladstone Avenue is planned to function as a low-speed shared street where vehicles, pedestrians, and cyclists operate within the same roadway environment. The corridor already includes several speed humps that help manage vehicle speeds and reinforce the intended traffic-calming character. See **Figure 23**.



Figure 23 – Existing Gladstone Avenue

To maintain a continuous and accessible SUP, the proposed 12-foot-wide SUP will be positioned as close as possible to the active track AREMA zone to maximize usable width within the constrained Gladstone Avenue corridor. Approximately 25 feet minimum of cross-sectional space is available between the railroad fence line and the existing retaining walls; accounting for a 7-foot parked-vehicle envelope leaves roughly 18 feet for the operational shared space zone. See **Figure 24**.

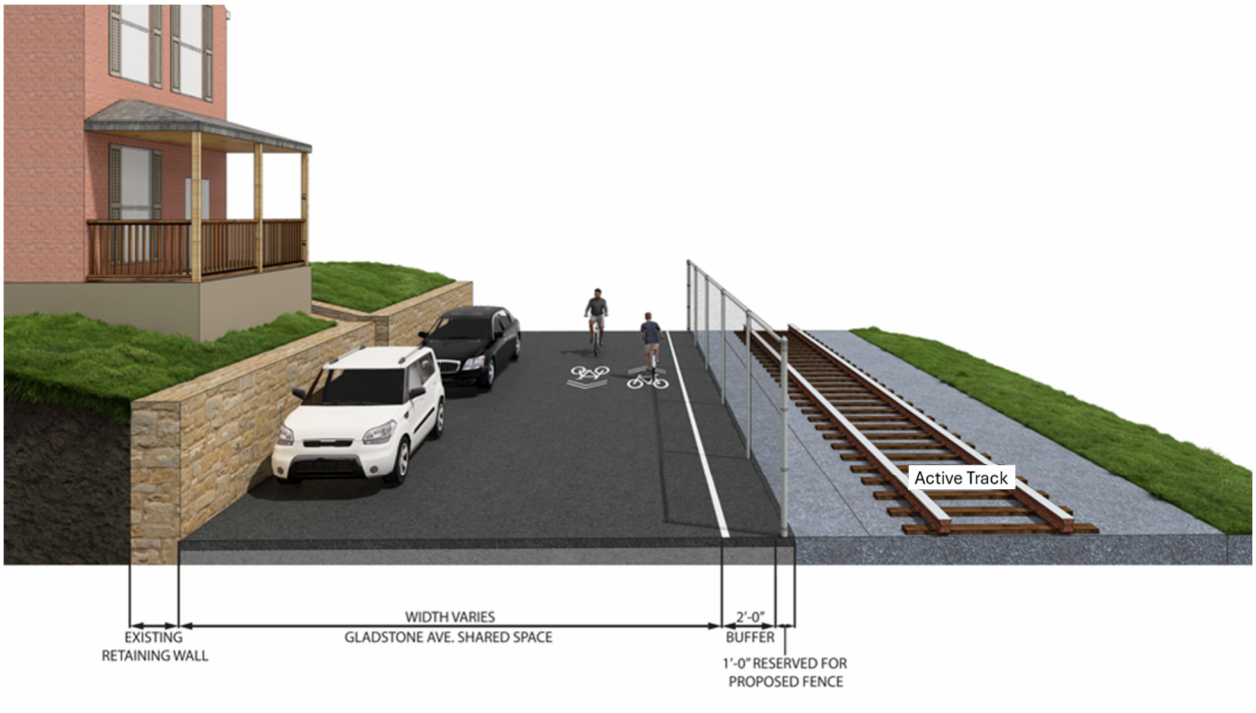


Figure 24 – Gladstone Avenue Access Point

The entire Gladstone Avenue corridor will be resurfaced, with full-depth pavement reconstruction provided where it is necessary to support SUP structural requirements and accommodate vehicular loading. New speed humps will be installed to reinforce traffic calming and maintain appropriate operating speeds. The corridor will also incorporate sharrow pavement markings and associated signage to delineate shared-use operations and guide user movement.

Existing homeowners currently place their trash bins on the abandoned rail line, see **Figure 25**, where the SUP will be constructed; therefore, coordination will be required to identify new bin-placement locations or to establish a centralized collection area within the existing turnouts that maintains operational efficiency and minimizes conflicts with trail users.



Figure 25 – Gladstone Ave Trash Bins

A new fence line is proposed along the edge of the trail alignment adjacent to the railroad, establishing a controlled interface with the rail corridor and enhancing user safety. Collectively, these treatments formalize the shared-use environment and provide a technically compliant, multimodal connection along Gladstone Avenue.

5. Torrence Road Station

Torrence Road Station serves as a key multimodal access point along the corridor, blending its historic rail-related features with modern active-transportation improvements. The station area retains several legacy elements that reflect its long-standing role in local mobility, and the proposed design approach seeks to respect and complement this historic character. See **Figure 26.**



Figure 26 – Existing Torrence Road Station

To enhance connectivity between Torrence Road Station and the surrounding neighborhoods, four pedestrian access alternatives have been developed—two providing connections to Riverside Drive and two linking to Columbia Parkway. Each option is designed to integrate seamlessly with the proposed SUP and maintain compatibility with the historic character of the station area. Together, these alternatives offer a range of approaches for improving neighborhood access while supporting safe, multimodal circulation throughout the corridor.

Riverside Drive Connection Alternatives

Alternative G1: This alternative is primarily contained within City property and the Torrence Road right-of-way, with one private property impact required to accommodate the necessary horizontal and vertical geometry. Under this configuration, Torrence Road will be removed and replaced with the proposed 12-foot-wide SUP**,** establishing a dedicated multimodal corridor in place of the existing roadway. The SUP is designed with a maximum 5% running slope in accordance with the ODOT Multimodal Design Guide.

To achieve an accessible connection between the SUP and Riverside Drive, the alignment incorporates an ADA-compliant switchback pathway that manages the elevation change while maintaining comfortable, accessible grades for all users. A series of new retaining walls with protective railings is required to support grade transitions, provide structural stability, and ensure adequate width throughout the accessible route**.**

The alignment is intentionally configured to avoid disturbance to the historic Torrence Station, preserving the structure in place and creating an opportunity to incorporate interpretive plaques, benches, and other context-sensitive amenities that highlight the corridor's rail history. This approach provides a direct, fully accessible connection to Riverside Drive while maintaining ADA compliance, minimizing property impacts, and respecting the historic character of the site. See **Figure 27**.

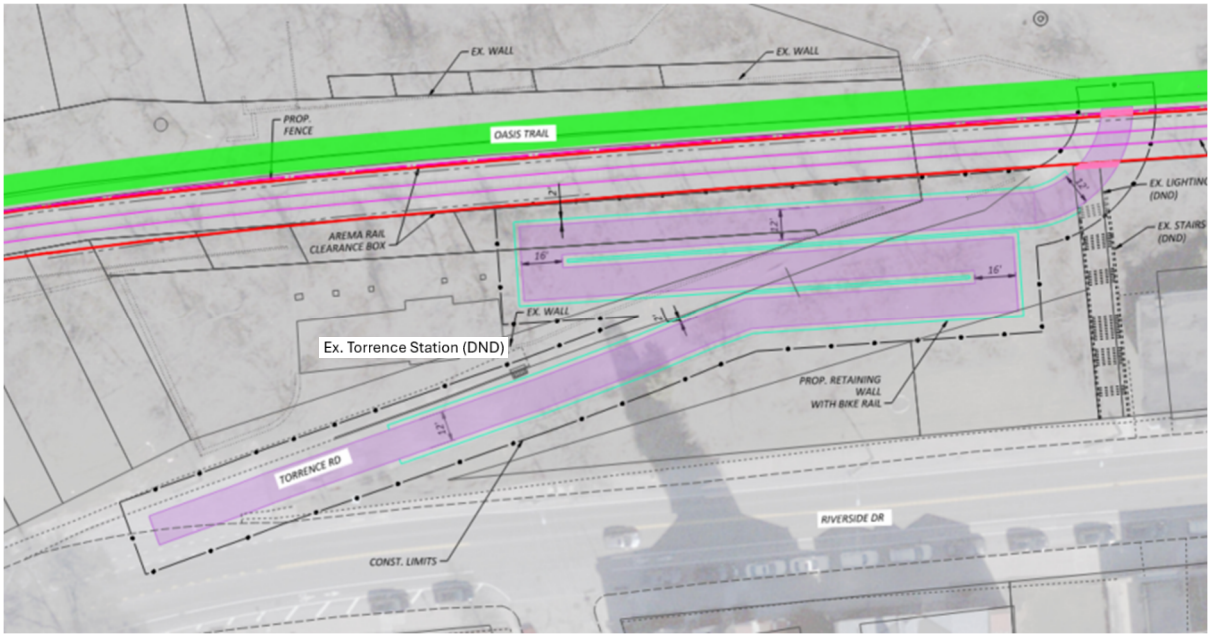


Figure 27 – Alternative G1

Alternative G2: This alternative shifts the access route to follow the previously designed Torrence Road Station subdivision improvement plan submitted to the City in 2024. See **Figure 28**.

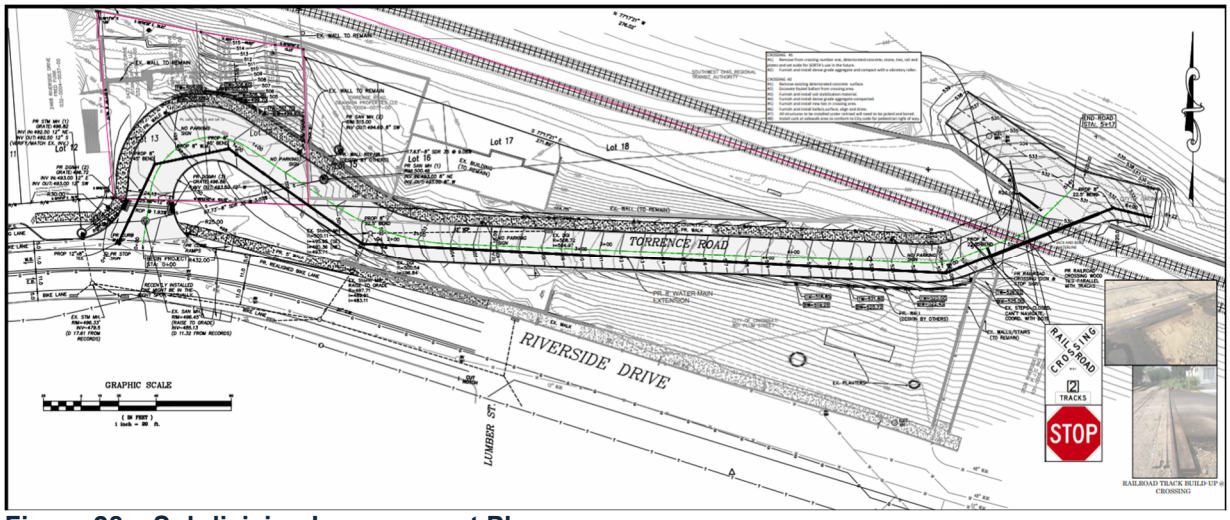


Figure 28 – Subdivision Improvement Plan

By aligning the connection with the proposed roadway configuration it supports long-term maintainability, preserves the historic setting of the station area**,** and reduces overall project costs.

In the interim, before development of the improvement plan begins, a 8-ft sidewalk could be installed within the Torrence Road right-of-way, following the existing roadway grade of approximately 8% to maintain pedestrian access and continuity. See **Figure 29.**

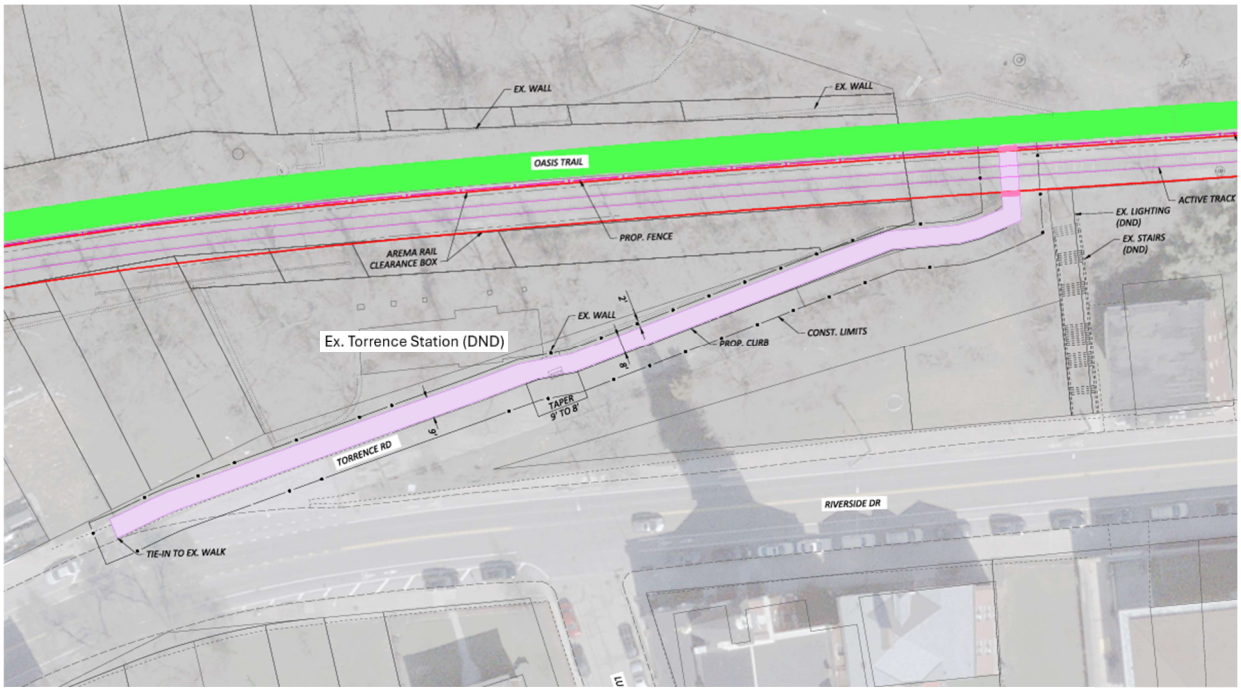


Figure 29-Alternative G2

This facility provides a safe, functional connection while avoiding premature grading or disturbance and ensuring compatibility with the future permanent configuration.

Given the benefits of leveraging the previously designed Torrence Road Station subdivision improvement plan submitted to the City in 2024, the preferred approach is to wait for the planned development to proceed**.** This strategy ensures that the permanent access route is constructed in coordination with the future roadway configuration, improving overall constructability**,** reducing redundant work, and lowering long-term costs. It also preserves the historic character of the station area while allowing a temporary sidewalk to maintain pedestrian connectivity in the interim. Collectively, these factors make deferring construction until the planned development begins the most efficient, cost-effective, and context-sensitive alternative.

Columbia Parkway Alternatives

Alternative G3: This alternative provides pedestrian access to Columbia Parkway and the hillside neighborhoods of East Walnut Hills, Evanston, and Hyde Park**,** which are located north of the station**.** See **Figure 30**.

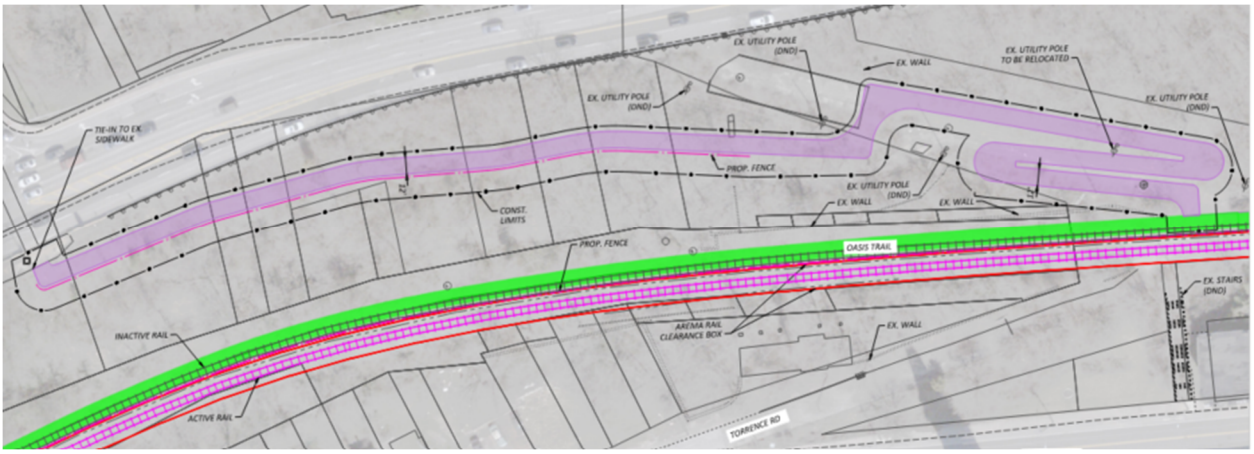


Figure 30 – Alternative G3

The proposed 12-foot-wide SUP is designed to maintain maximum grades of 5%**,** requiring substantial earthwork and the construction of new retaining walls to navigate the steep topography. Achieving ADA-compliant slopes and landings may further expand the footprint of required earthwork and structural elements, resulting in impacts to 11 City-owned parcels as well as portions of the Torrence Road right-of-way.

The steep terrain also introduces significant slope stability concerns**,** necessitating detailed slope stability evaluations and potentially additional structural measures to ensure long-term safety and performance. These geotechnical constraints heighten the importance of careful grading design and may influence alignment selection, wall heights, and construction methods.

Given the sensitivity of the surrounding landscape and the proximity of historic resources, thoughtful design will be essential to ensure that new structural and grading elements integrate with and complement the historic character of the station area while minimizing encroachments. Figures illustrating the conceptual are provided in **Attachment D.**

Alternative G4: This alternative shifts closer to Columbia Parkway before traversing down the hillside toward Torrence Station, allowing the 12-foot-wide SUP to maintain maximum grades of 5% while following a more favorable terrain profile. See **Figure 31**.

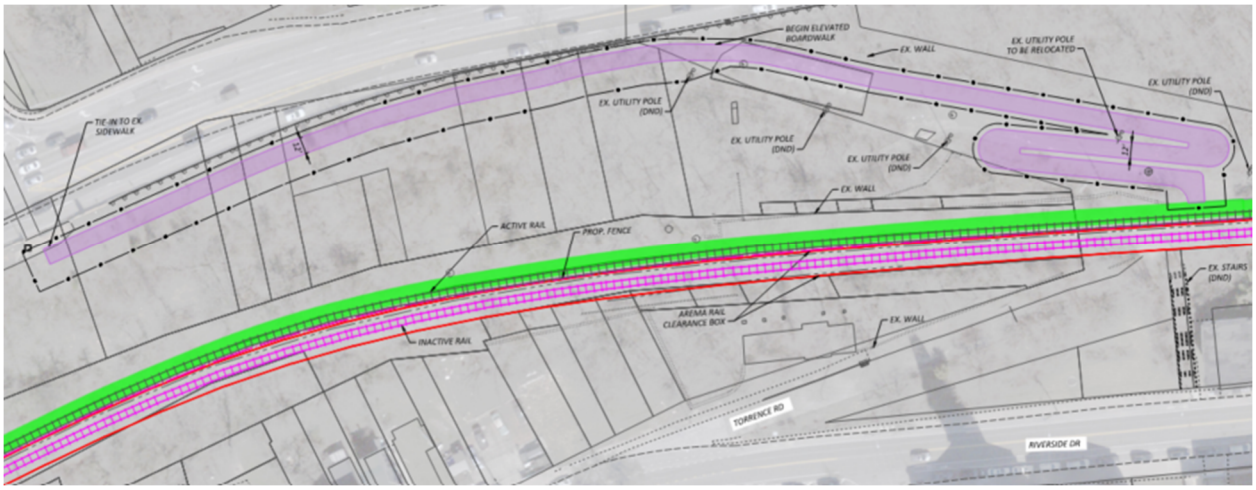


Figure 31 – Alternative G4

This shift reduces required earthwork and limits the need for extensive retaining-wall structures, decreasing construction complexity and long-term maintenance demands. The revised routing results in a slightly longer walking distance, but the improved terrain conditions help offset more intensive structural and grading requirements. Even with these refinements, achieving ADA-compliant slopes and landings results in impacts to 11 City-owned parcels as well as portions of the Torrence Road right-of-way.

To address remaining grade challenges along steeper segments, portions of the alignment transition to an elevated boardwalk structure, enabling the trail to maintain ADA-compliant slopes while minimizing disturbance to the hillside. This approach also helps avoid deeper cuts that could exacerbate slope stability concerns, which will require detailed slope stability evaluations and potentially targeted structural measures to ensure long-term safety and performance. These geotechnical constraints reinforce the importance of careful grading design and may influence final alignment selection, boardwalk lengths, and construction methods.

Implementation of this alternative will also require coordination with the potential Torrence Road Subdivision Improvement Plan, ensuring that the SUP alignment, grading transitions, and right-of-way needs are compatible with future roadway and utility improvements. Early coordination will help avoid redundant construction, reduce long-term conflicts, and support a cohesive multimodal network.

Given the sensitivity of the surrounding landscape and the proximity of historic resources, thoughtful design will be essential to ensure that new structural and grading elements integrate with and complement the historic character of the station area while minimizing encroachments.

Alternative G5: An access point located between Gladstone Avenue and Torrence Road Station provides a direct connection from the hillside neighborhoods to the SUP, giving users a straightforward, convenient path down to the trail where they can travel east or west along the corridor. See **Figure 32**.

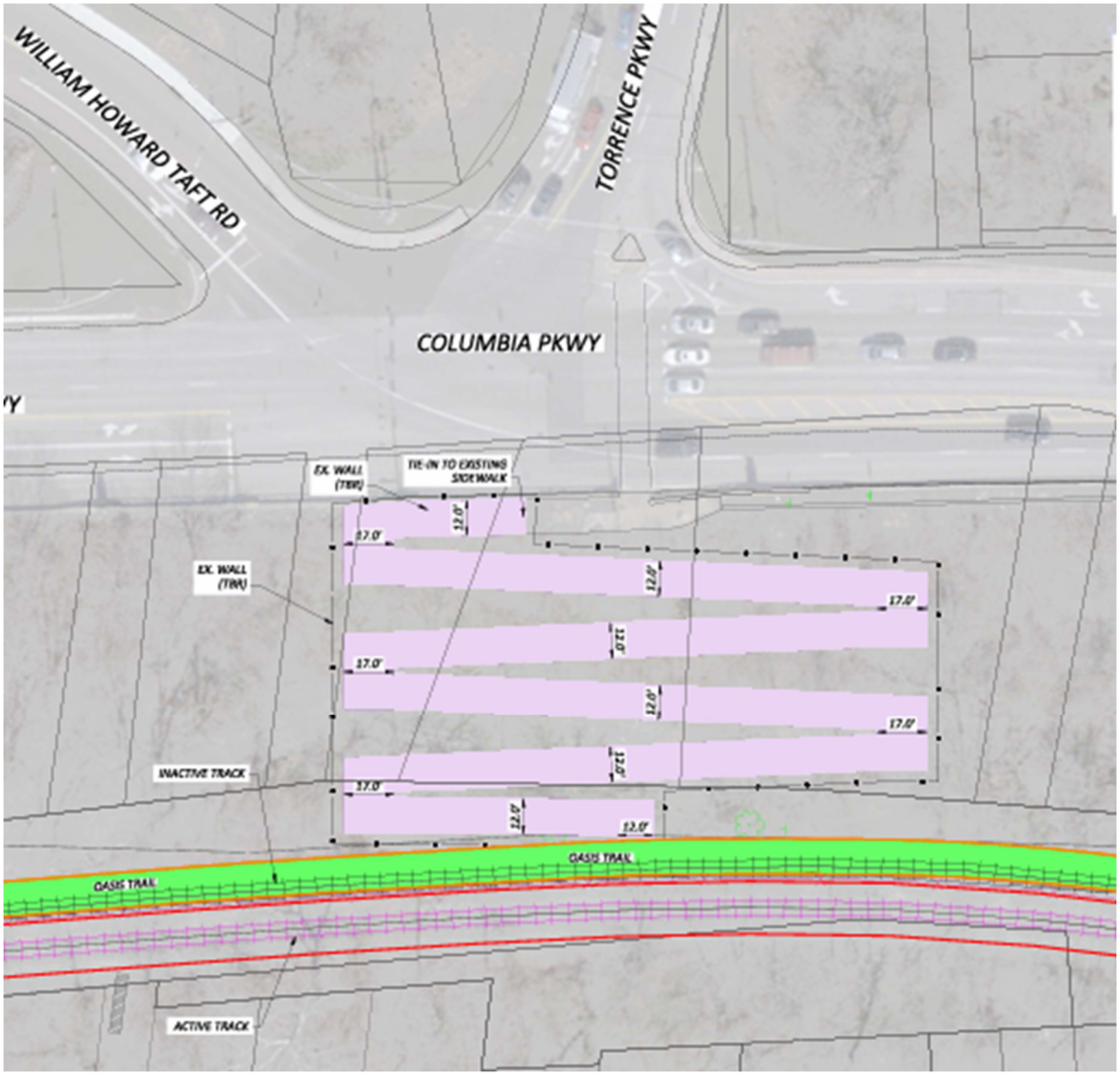


Figure 32 – Alternative G5

The proposed 12-foot-wide connection is designed to maintain a maximum slope of 5%, utilizing an elevated switchback boardwalk to navigate the steep hillside while preserving ADA-compliant accessible grades. The elevated structure minimizes earthwork and slope disturbance, reducing the need for large retaining-wall systems and limiting impacts to the surrounding terrain. It also creates opportunities for vista overlooks and small seating areas at landing points, enhancing the user experience and highlighting views of the river valley and the historic station setting.

The steep terrain however introduces significant slope stability concerns**,** necessitating detailed slope stability evaluations and potentially additional structural measures to ensure long-term safety and performance. These geotechnical constraints heighten the importance of careful grading design and may influence alignment selection, wall heights, and construction methods. The elevated boardwalk helps address these challenges by spanning unstable or erosion-prone areas**,** reducing the need for deep cuts, heavy fills, or large retaining structures that could further destabilize the slope. By distributing loads through piers and minimizing ground disturbance, the boardwalk provides a more stable and predictable solution on steep, sensitive terrain.

The footprint associated with the boardwalk, landings, and trail width introduces property impacts along the hillside, including localized vegetation removal and property impacts affecting 3 City-owned parcels. Even with these considerations, the configuration provides a stable, predictable, and fully accessible connection between the hillside neighborhoods and the SUP while supporting seamless east–west mobility along the SUP and minimizing long-term impacts to the natural and historic setting.

Alternative G5, while comparatively more costly, is identified as the preferred option because it delivers the most direct, intuitive, and fully accessible connection between the hillside neighborhoods and the station area, all while remaining outside the Torrence Road right-of-way. Its elevated boardwalk configuration minimizes disturbance to the steep hillside, addresses slope-stability challenges, and enhances user experience through predictable grades and improved views. The design also creates opportunities for vista overlooks and small seating areas at landing points, showcasing the river valley and the historic station setting.

Importantly, G5 can be advanced independently of the potential Torrence Station Subdivision Improvement Plan, ensuring compatibility with future roadway, utility, and access modifications without creating conflicts or rework. Because of these long-term mobility, safety, and connectivity benefits, G5 is well-positioned not only as the preferred alternative but also as a strong candidate for inclusion in a **future city project** focused on resilient trail design and thoughtful station access across the corridor.

Segment 3 – Torrence Road Station to End of Project

1. Hoff Avenue Connection

In this section, the existing Hoff Avenue access from Riverside Drive provides a direct but limited pedestrian route into the corridor. The current configuration includes a narrow approach path and a stairway that limits movement for pedestrians and bicyclists. See **Figure 33.**



Figure 33 – Existing Hoff Avenue Access

The proposed improvements widen the existing access path to approximately 5 feet and enhance the stairs with a bicycle runnel to support rolling access. **See Figure 34**.

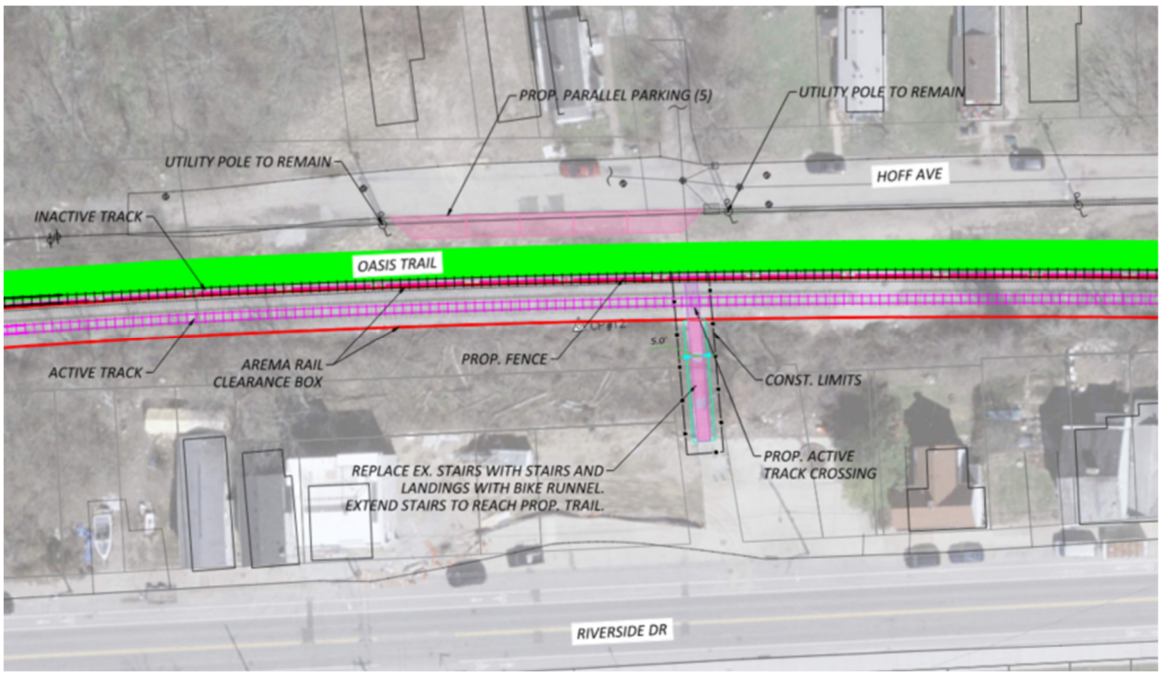


Figure 34 – Hoff Avenue Access Point

While these upgrades improve overall usability, the configuration still limits full ADA access**,** as the steep topography and stair-based approach prevent the path from meeting accessible-route standards. However, this option remains inexpensive relative to other alternatives, relying on modest modifications rather than major structural interventions. To complete the connection, a designated pedestrian crossing of the active railroad will be added, creating a safer and more direct multimodal link for users approaching the corridor. The adjacent right-of-way along Hoff Avenue also offers the potential to accommodate limited pedestrian parking**,** further supporting access and improving overall access planning**.** Although not fully accessible, the improvements provide a more predictable and functional connection for most users and strengthen multimodal connectivity through thoughtful trail design**.**

2. **St. Andrews Street**

The existing St. Andrews Street railroad crossing provides a direct at-grade connection between the neighborhood and the rail corridor, but its current configuration offers limited pedestrian accommodation. The crossing surface, approach grades, and pedestrian delineation require improvement to support safe and comfortable multimodal use. See **Figure 35**.



Figure 35 – Existing St. Andrews Street

Alternative H1 – Switchback Path: In this alternative, a 12-foot-wide connection is constructed using a switchback alignment to create a more gradual and accessible route from Riverside Drive to the St. Andrews Street crossing. The configuration is designed to maintain 5% maximum grades**,** supporting ADA accessibility and providing controlled slopes that improve user comfort while navigating the steep hillside. Achieving these grades requires new retaining structures and careful grading design to balance cut-and-fill needs and maintain slope stability. The alignment remains entirely within SORTA property. This approach enhances accessibility and offers a predictable, comfortable walking and rolling experience while preserving a direct connection to the crossing. See **Figure 36**.

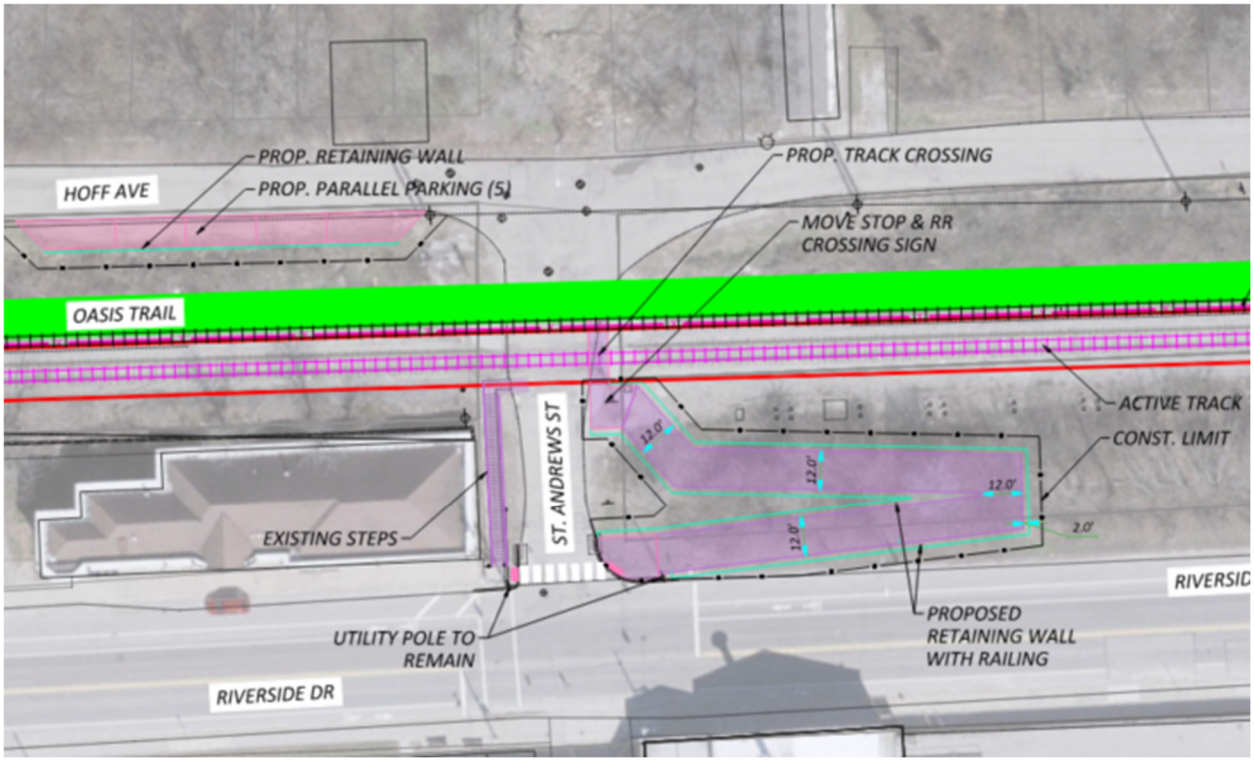


Figure 36 – Alternative H1

Alternative H2: This alternative reconstructs the existing stairway with improved tread geometry, new handrails, and a bicycle runnel to support rolling access. While the configuration remains inexpensive compared to more extensive structural options, it does not provide full ADA accessibility due to the steep topography and stair-based design. Even so, it offers a more direct and compact connection between Riverside Drive and the crossing, improving overall user convenience. See **Figure 37**.

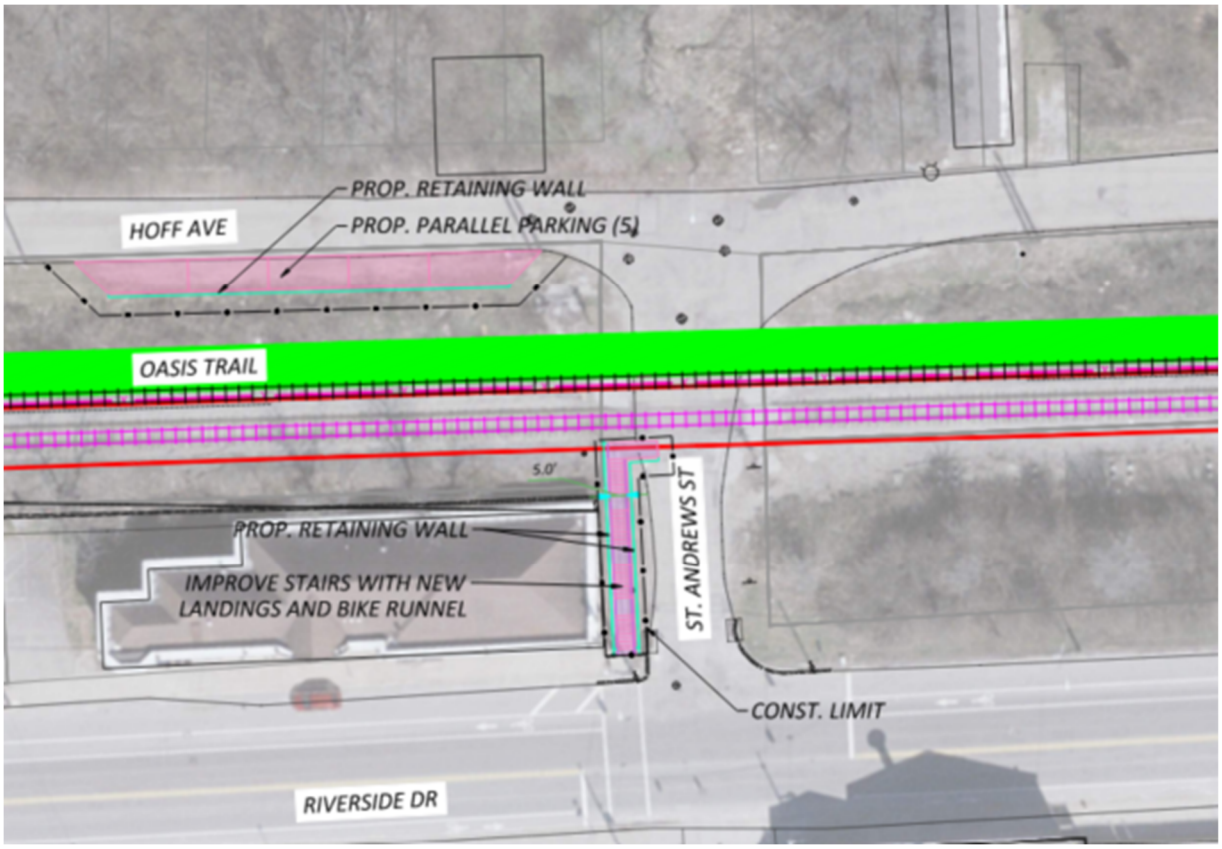


Figure 37 – Alternative H2

Alternative H2—the stair option—is identified as the preferred alternative due to its low cost, compact footprint, and straightforward constructability. While it does not provide full ADA accessibility from Riverside Drive, the improved tread geometry, new handrails, and integrated bicycle runnel create a direct and functional connection between Riverside Drive and the corridor. To support accessible access needs, ADA-compliant parking spaces are proposed along Hoff Avenue, allowing users with mobility limitations to reach the corridor from a flatter, more manageable approach.

Users seeking an alternate route may also travel along St. Andrews Street, which carries very low traffic volumes, though its 25% grade makes it significantly steeper and less comfortable for many travelers.

3. Walworth Tunnel

The existing Walworth Tunnel provides a unique grade-separated connection beneath the active railroad, but the current stairway and approach conditions limit its usability for pedestrians and bicyclists. See **Figure 38.**



Figure 38 – Walworth Tunnel

B&N has completed a structure assessment of the Walworth tunnel including our recommendations for the structures current condition, which was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. There are no structure modifications that would be required to convert the rail to trail above the tunnel with the full-width trail.

Estimated Construction Cost = $20,000

Potential improvements include upgrading the existing tunnel stairs with improved tread geometry, new handrails, and a bicycle runnel to better support rolling access. At the top of the stairs along Walworth Avenue, a small collector node would be created to organize pedestrian movements and provide space for bicycle amenities such as short-term parking or a basic repair station. From this collector node, a new connector path would follow the curb line to reach more favorable terrain, allowing less than 5% slopes and meet ADA accessibility expectations**.** Together, these enhancements would transform the tunnel approach into a more inclusive connection. See **Figure 39**.

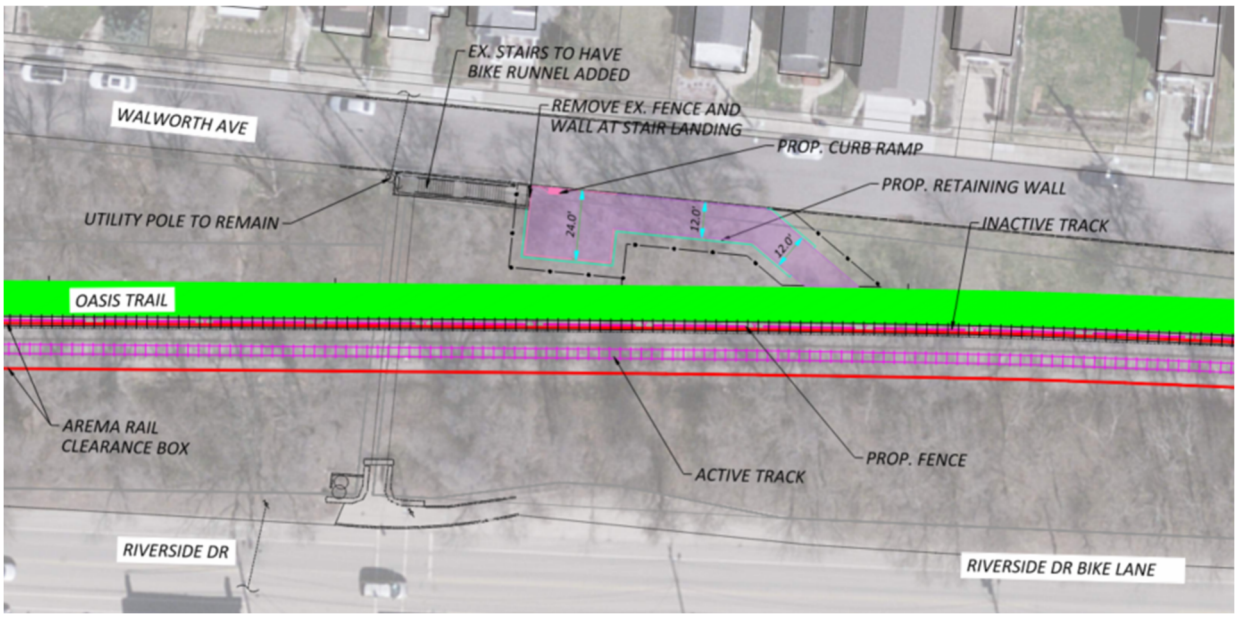


Figure 39 – Walworth Tunnel Access Point

4. Delta Avenue Bridge

The Delta Avenue bridge and the approximately 500-foot preceding retaining-wall segment present several feasibility considerations related to available corridor width, existing structural constraints, and the proximity of the active railroad. See **Figure 40.**



Figure 40 – Delta Avenue Bridge

The Delta Bridge is a built-up steel through-plate girder bridge with built-up box floor beams oriented perpendicular to the substructures (abutments and pier). The floor beams frame into the plate girders or bear directly on the substructures at their ends. A deck plate above the floor beams contains ballast that supports the rail ties and tracks. B&N performed a bridge assessment that was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. This assessment is included in this feasibility study as an appendix and provides recommendations regarding the existing condition of the bridge. It should be noted that the Southwest Ohio Regional Transit Authority (SORTA) has released the referenced 2024 repair plans for construction bidding, with submissions due in June 2026.

In addition to the work recommended in the bridge assessment, additional modifications will be required to convert the bridge for shared-use trail purposes. Two trail widths are under consideration for the Delta Bridge: a full-width 12-foot trail and a constrained 8-foot trail.

Three alternatives were evaluated to determine how the SUP could be accommodated within this constrained area.

8-Foot-Wide Trail on Delta Bridge

Alternative J1: In this alternative, the existing retaining wall remains in place, and the SUP is fitted within the current corridor limits. If an 8-foot-wide trail is carried over the existing Delta Bridge, minimal additional structural work would be required. Within the proposed trail area, ballast, rail ties, and tracks would be removed to create space for construction of the full-depth trail section. Protective fencing would be required on both sides of the trail to prevent users from interfacing with the active rail lines and to protect users from falling from the bridge. See **Figure 41.**

Estimated Bridge Construction Cost: $50,000

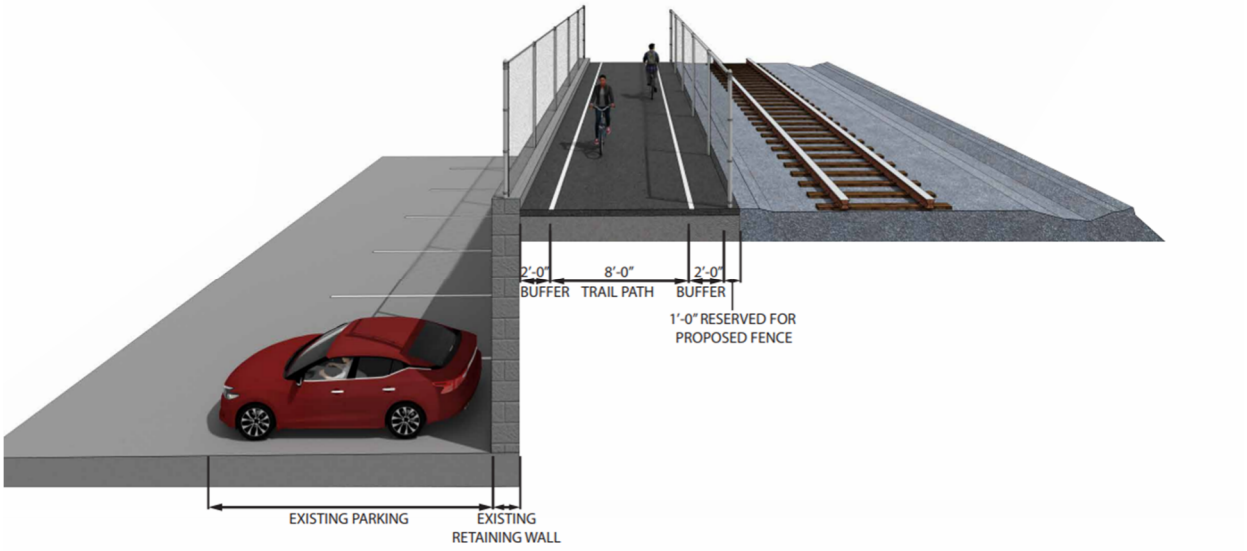


Figure 41 – Alternative J1

12-Foot-Wide Trail on Delta Bridge

With the current configuration of the two railroad tracks, there is insufficient space to maintain the southern rail line and construct a 12-foot-wide trail within the footprint of the existing northern track and the retaining wall and Delta Ave Bridge. Two alternatives are proposed to accommodate a 12-foot-wide trail on the Delta Bridge: (1) maintain the southern rail line in its current location, or (2) relocate the southern rail line.

Alternative J2: Maintaining the southern rail line in its current location while providing the full trail width would require construction of a moment slab that overhangs the existing northern girder by approximately 5 feet 6 inches. A moment slab is designed with sufficient counterbalance on the opposite side such that loads applied to the overhanging portion do not result in overturning. A 5 feet 6 inches overhang is beyond standard and would be difficult to construct.

Estimated Bridge Construction Cost: $450,000

The new alignment accommodates a 12-foot-wide shared-use trail with 2-foot buffer widths, improving user comfort and safety and meeting modern trail design expectations. However, achieving this width requires the existing retaining wall also to be shifted approximately 5 feet into the current parking lot, resulting in the loss of roughly 25 parking spaces and forcing a full reconfiguration of the remaining lot. This has a significant negative impact, reducing valuable parking capacity and disrupting existing site operations. Additionally, the structural work needed to relocate the retaining wall, reconstruct the parking area, and integrate the new trail geometry introduces a high expense, making this option substantially more costly than other alternatives. While the trail improvements enhance multimodal comfort, the combined effects of parking loss and elevated construction costs remain major drawbacks that must be carefully weighed. See **Figure 42**.

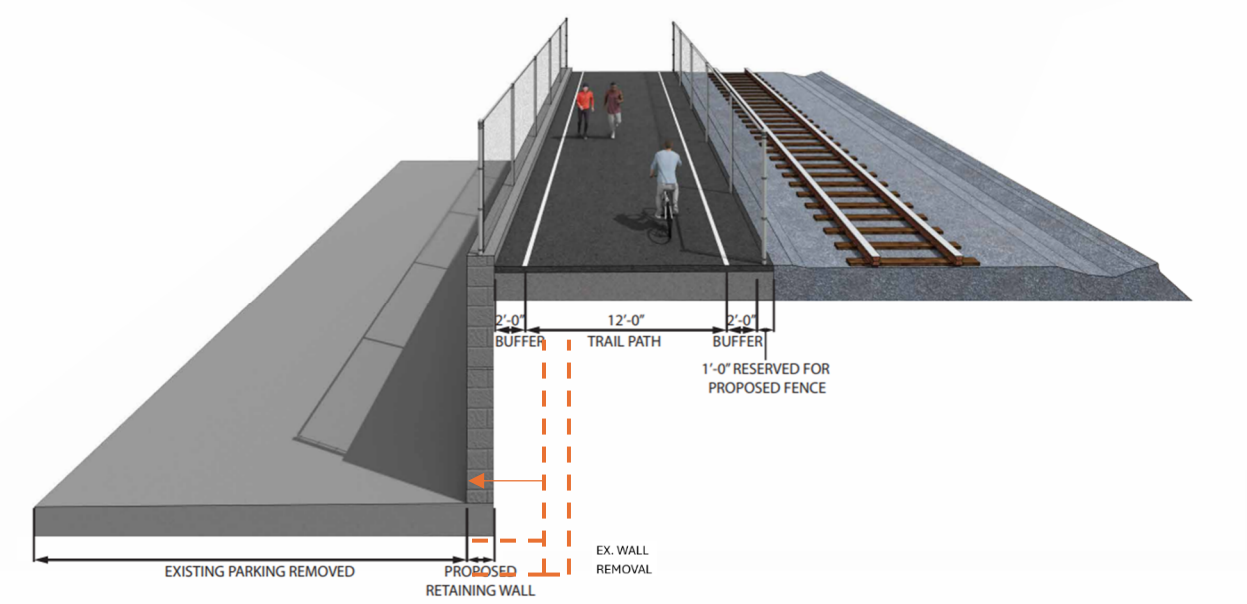


Figure 42 – Alternative J2

Alternative J3: The Delta Bridge was originally designed and constructed to accommodate four rail lines; however, only two were ultimately built. As a result, sufficient width exists to relocate the southern rail line farther south, allowing construction of a full-width trail without the addition of major structural elements. Under this alternative, minimal additional bridge work would be required. Within the proposed trail area, ballast, rail ties, and tracks would be removed to allow for construction of the full-depth trail section. Protective fencing would be required on both sides of the trail to separate trail users from active rail operations and to provide fall protection.

Estimated Bridge Construction Cost: $50,000

In this alternative, the existing retaining wall remains in place, and the adjacent railroad tracks are shifted laterally to create additional horizontal clearance. This shift allows for a 12-foot-wide shared-use trail with standard buffers without requiring new retaining-wall construction

Implementation of this configuration would involve removing the inactive north track and shifting the active south (main) track by flattening the existing horizontal curvature—from approximately 2°00’30” (approximate 2,877-foot radius) to 1°50’00” (approximate 3,125-foot radius). This adjustment shifts the main track roughly 8 feet south across the Delta Bridge and along the adjacent retaining walls. In total, approximately 1,750 track-feet of main line would be realigned as part of this rail geometry modification.

What is the cost of this realignment?

5. Delta Avenue Pedestrian Access Point

A potential pedestrian access point on the east side of the Delta Avenue bridge could provide a 12-foot-wide ADA-accessible connection from the SUP to Eastern Avenue. To establish this link, a portion of the existing site wall would be removed to create a clear opening from the new access path to the existing sidewalk. The descending alignment is organized into two legs: Leg 1 at approximately a 4% grade and Leg 2 at approximately a 7.69% grade, balancing the steep site conditions while remaining within acceptable ADA requirements for accessible routes. Achieving these controlled slopes requires careful layout to maintain appropriate landings and transitions. Retaining walls with railings are necessary along the upper portion of the path near its connection with the shared-use trail to manage elevation changes and support the widened corridor. See **Figure 43.**

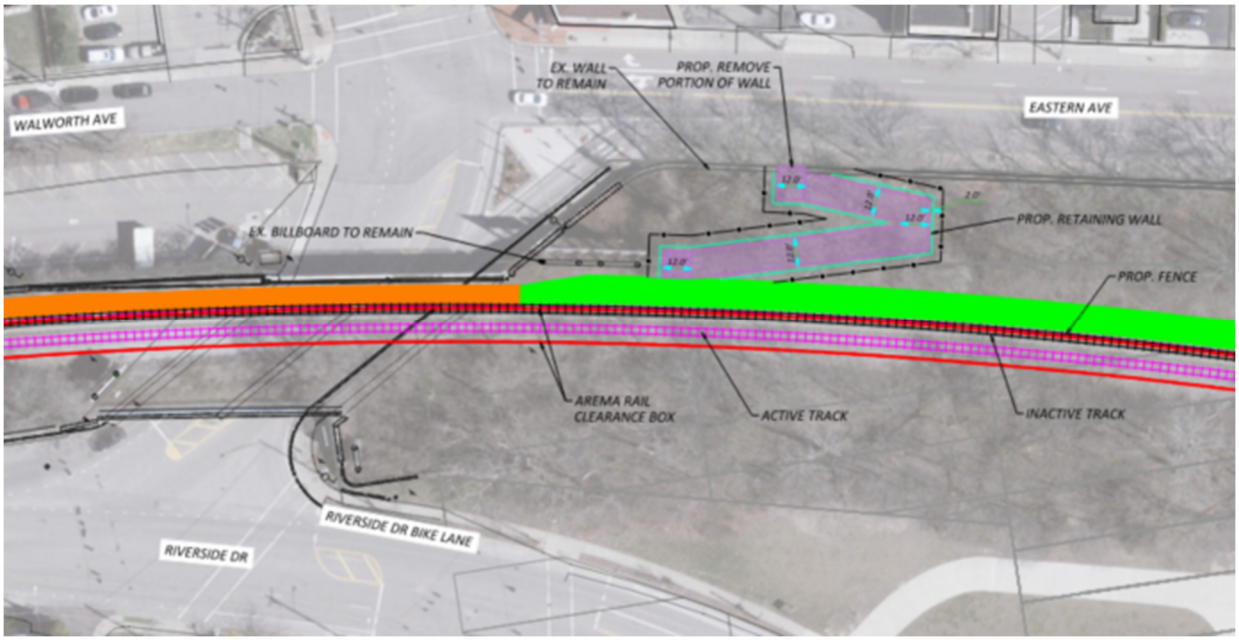


Figure 43 – Delta Avenue Access Point

6. Stanley Avenue Bridge

B&N has completed a structure assessment of the Stanley Avenue Bridge including our recommendations for the structures current condition, which was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. To convert the northern track to the trail would require the removal of the rail tracks, ties, and some ballast with the proposed trail replacing them. A fence on both north and south sides of the trails would be required to separate trail users from active rail and prevent users from falling off the bridge.

Estimated Bridge Construction Cost = $50,000

In this section, the existing Stanley Avenue Bridge provides sufficient width to accommodate an 11-foot-wide SUP within the current structural and horizontal constraints. While narrower than the desired full 12-foot section with buffers, the 11-foot width remains feasible and provides adequate space for two-way bicycle and pedestrian travel. This option minimizes construction impacts and avoids the need for track shifts or structural widening. See **Figure 44.**

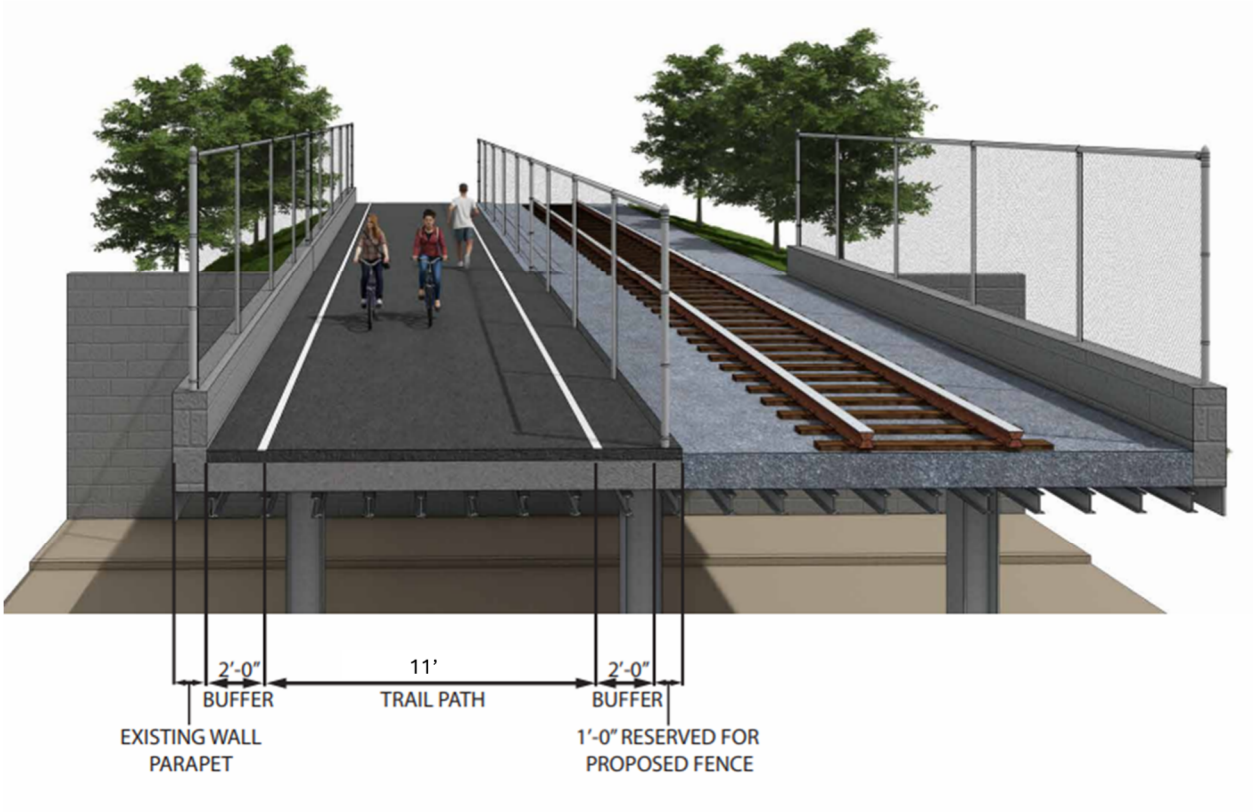


Figure 44 – Stanley Avenue Bridge

7. Stanley Ave Pedestrian Access

A potential pedestrian access point on the west side of the Stanley Avenue Bridge could provide a 12-foot-wide ADA-accessible connection from the shared-use trail to Stanley Avenue. To establish this link, a portion of the existing site wall must be removed to create a clear opening that ties the new access path into the existing sidewalk network. The descending alignment consists of two legs: Leg 1 at approximately a 3% grade over 200 feet, followed by Leg 2 at approximately a 4.7% grade over 190 feet. This configuration allows the path to navigate the existing topography while remaining within acceptable ADA requirements for accessible routes. Achieving these controlled slopes requires careful layout to maintain appropriate landings and transitions that support accessibility and user comfort. Due to the elevation change between the bridge and street level, new retaining walls are required along the upper portion of the path to support the widened corridor and maintain stable grades. Together, these improvements create a more intuitive and inclusive access point informed by thoughtful access planning. See **Figure 45**.

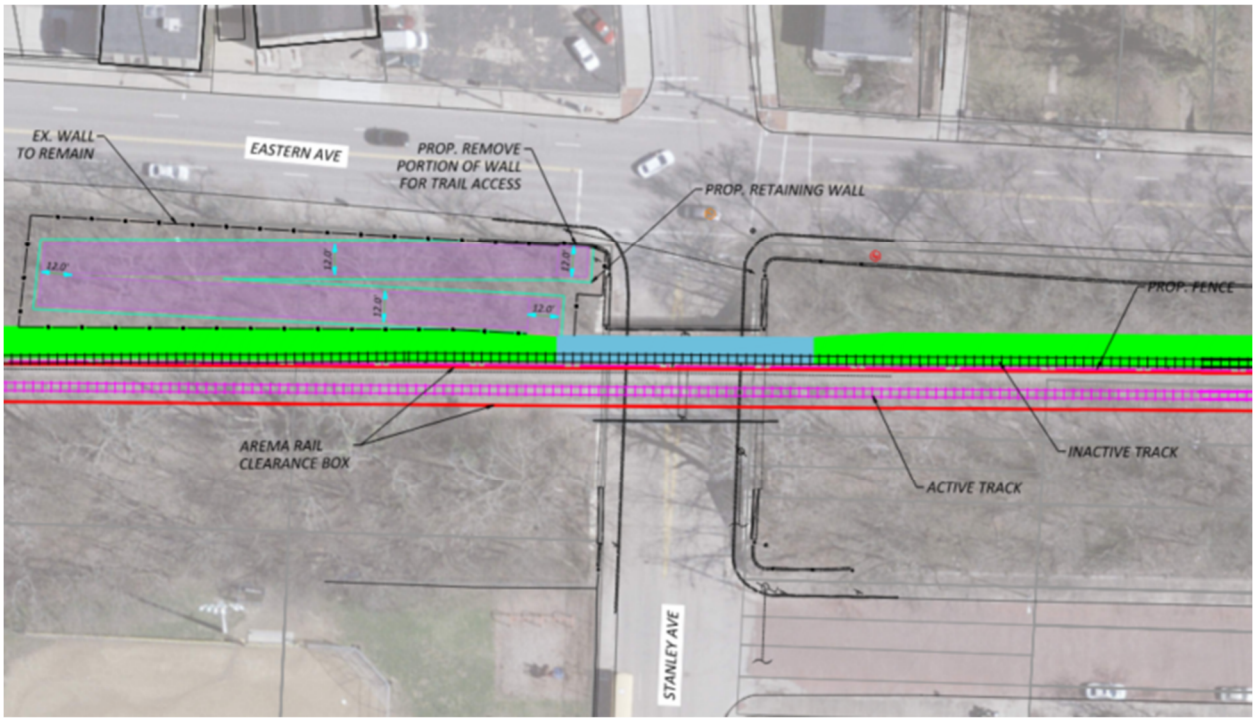


Figure 45 – Stanley Avenue Access Point

8. Congress Avenue Tunnel/Eastern Avenue Pedestrian Access

Congress Avenue Tunnel: B&N has completed a structure assessment of the Congress tunnel, See **Figure 46** including our recommendations for the structures current condition, which was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. There are no structure modifications that would be required to convert the rail to trail above the tunnel with the full-width trail.



Figure 46 – Congress Avenue Tunnel

Estimated Construction Cost = $20,000

Although the tunnel does not directly connect to the proposed SUP, users can comfortably reach the corridor by traveling along Eastern Avenue, which carries a low volume of vehicular traffic and offers a suitable on-street route for pedestrians and cyclists. See **Figure 47**.



Figure 47 – Eastern Avenue

From Eastern Avenue, users can access the SUP through the potential new connection points described in the Stanley Avenue access point alternative as well as the existing approach from Tusculum Avenue below. Together, these access points create multiple opportunities for neighborhood-level entry into the corridor and significantly strengthen overall trail connectivity. This distributed access network enhances local mobility and supports more intuitive, equitable movement throughout the area, consistent with thoughtful access planning.

9. Tusculum Avenue Access Point:

The existing Eastern Avenue crosswalk at Tusculum Avenue provides a natural pedestrian crossing point and a logical location for a new 12-foot-wide connection to the shared-use path. Establishing this link would require removal of the end of the existing site wall to create a clear opening into the corridor, resulting in only a small impact to adjacent private property. The existing curb ramp can remain, allowing the new connection to tie seamlessly into the current sidewalk network. With low traffic volumes along Eastern Avenue, this location supports comfortable walking and biking access, enabling users from Tusculum Avenue and nearby residential blocks to transition easily onto Eastern Avenue and continue toward the proposed access points at Stanley Avenue or Delta Avenue. See **Figure 48**.

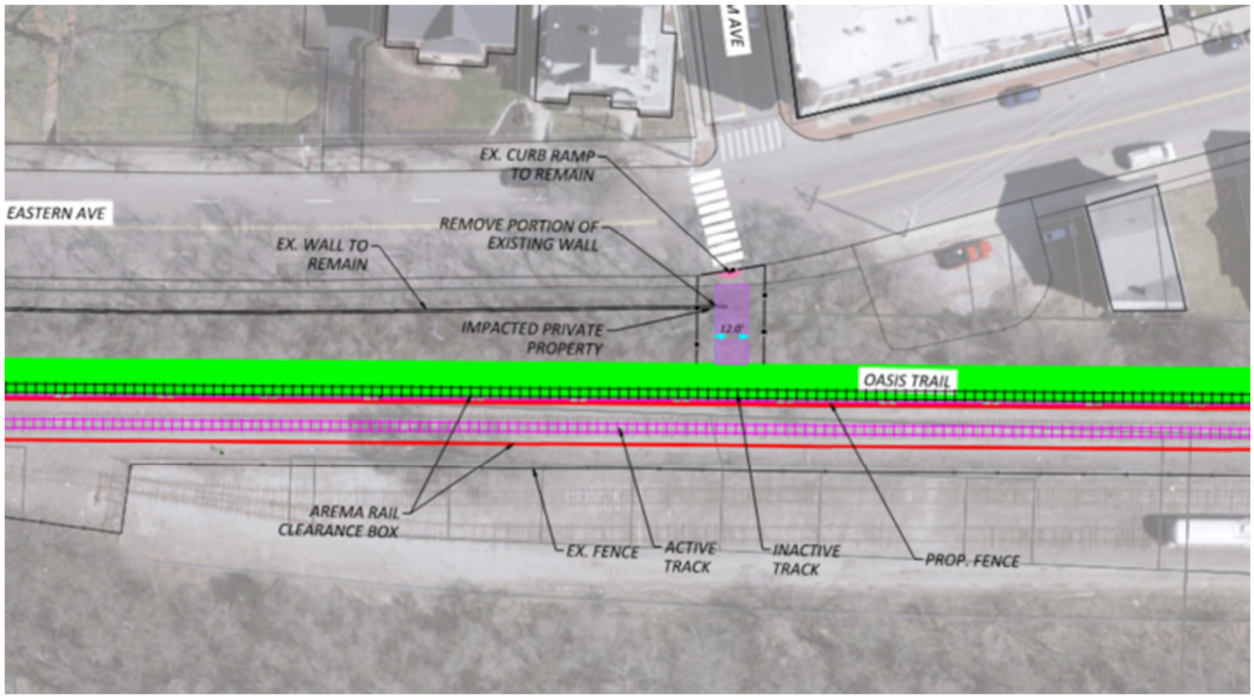


Figure 48 – Tusculum Avenue Access Point

10. Donham Street

A potential pedestrian access point to Donham Street behind Daylily Deli could create an additional neighborhood-scale connection to the shared-use path. The concept includes an 11-foot-wide connection approximately 80 feet long, descending at about a 5% grade, which aligns well with the gentle topography leading toward Donham Street. Establishing this connection would allow residents and visitors approaching from the Donham Street corridor to reach the SUP without relying solely on Eastern Avenue or the larger access points at Stanley and Tusculum Avenues, strengthening corridor-wide trail connectivity. See **Figure 49**.

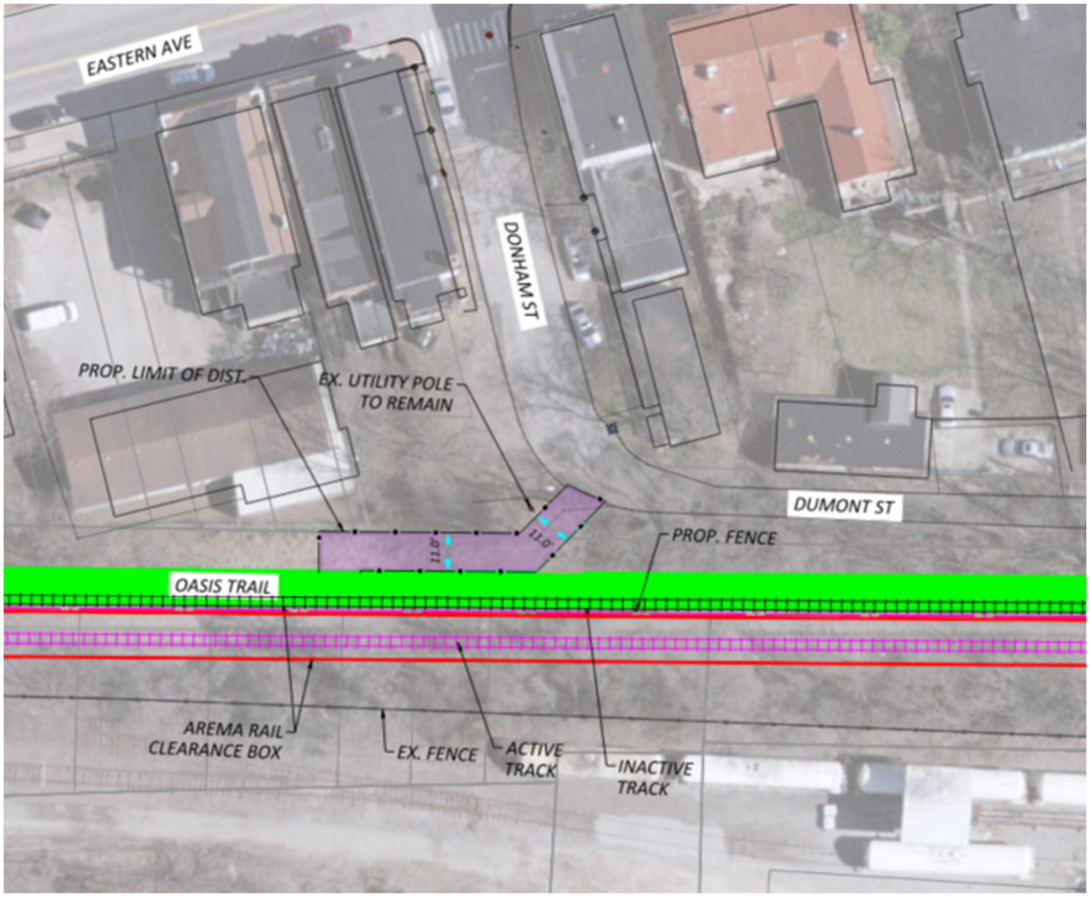


Figure 49 – Donham Street Access Point

11. End of Project (Carrel Street Connection)

The Carrel Street access point serves as the eastern terminus of the project and provides a connection between the Oasis Trail and the Ohio River Trail. Pedestrians and bicyclists accessing or exiting the trail at this location must cross the railroad, Dumont Street, and Carrel Street. Existing conditions include a steep grade change between the top-of-rail/trail elevation and Carrel Street, creating challenges related to accessibility, user comfort, and compliance with current design guidelines.

Two alternatives were developed to address these constraints.

Alternative K1: This alternative provides a direct, straight 12-foot-wide connection on the east side of Carrel Street. The alignment crosses the existing railroad tracks and follows the existing grade of Carrel Street, which reaches an approximately 11% slope for a short distance before connecting to Dumont Street. New curb ramps are installed at the Dumont Street intersection crossing to support accessible movement and tie the facility into the Ohio River Trail. The simplified geometry, which avoids the need for switchbacks, results in a more streamlined and constructible design. See **Figure 50**.

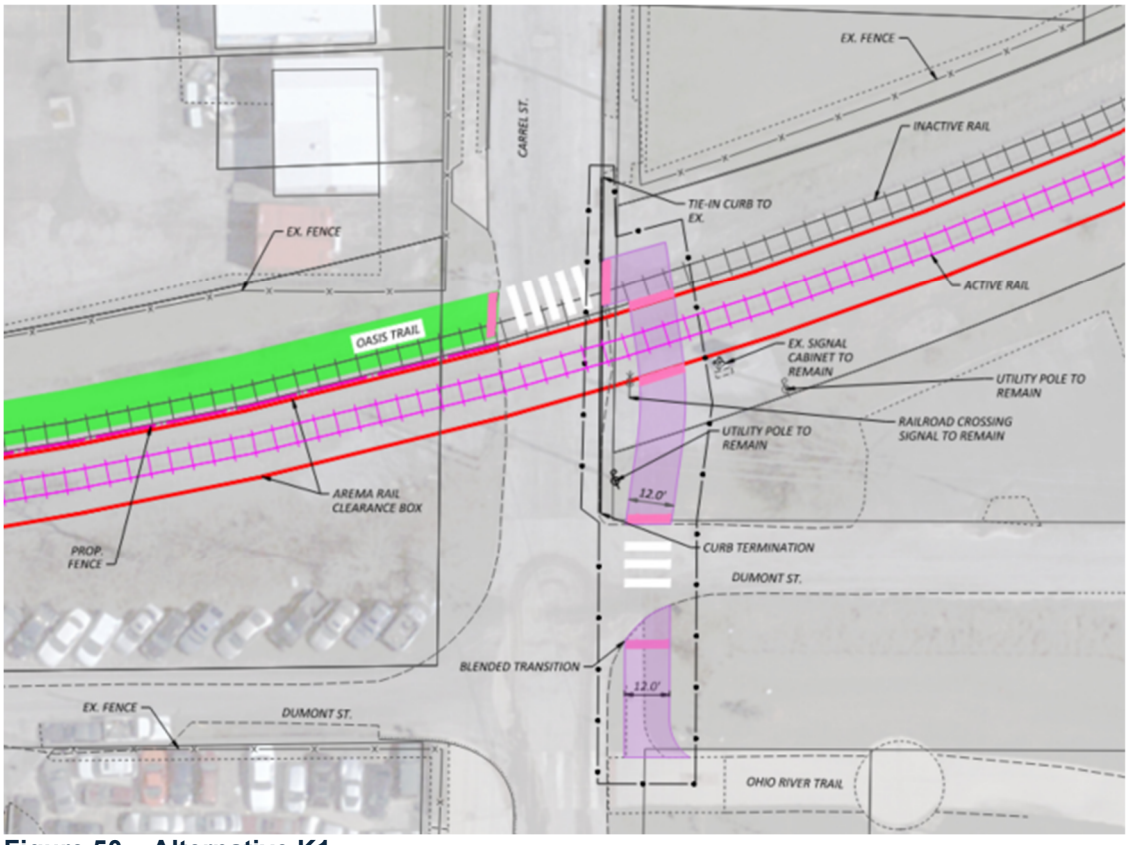


Figure 50 – Alternative K1

Alternative K2: This alternative proposes a switchback alignment on the east side of Carrel Street, providing a 12-foot-wide connection designed to with 5% grades along the ramp segments. Implementing this option requires a curb extension that removes one travel lane on Carrel Street to accommodate the additional ramp length needed for compliant slopes. The configuration results in one property impact, limited to the area necessary to fit the switchback within the constrained area. To further minimize effects on adjacent business parking and nearby utilities, the switchback is arranged within a compact footprint, reducing the horizontal envelope relative to other alternatives. See **Figure 51**.

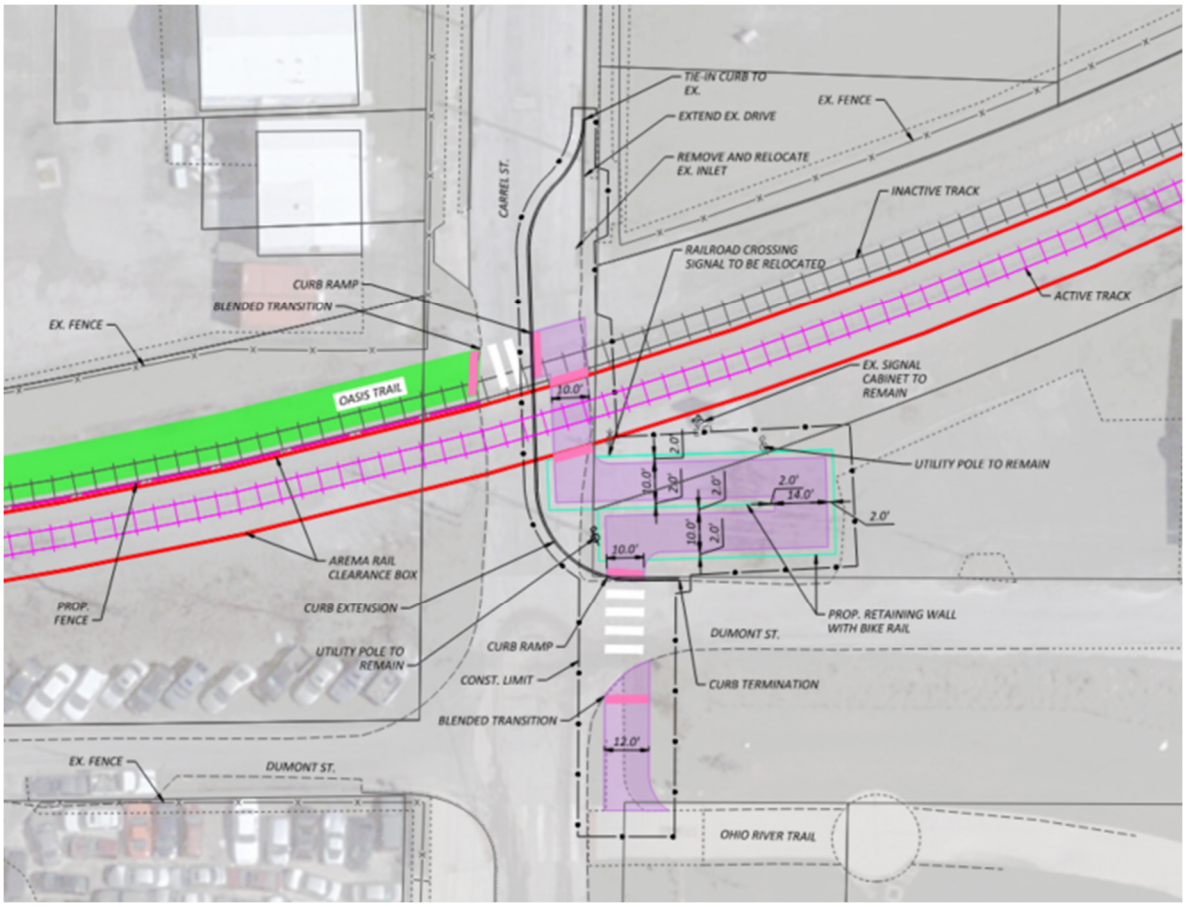


Figure 51– Alternative K2

Alternative **K1**, which follows the Carrel Street alignment, is the preferred option due to its strong balance of constructability, user experience, and cost efficiency. By utilizing the existing Carrel Street corridor, K1 minimizes structural needs, reduces grading complexity, and limits property impacts—resulting in a less expensive solution compared to alternatives requiring switchbacks or more extensive retaining structures.

3. Key Issues

This section summarizes the technical studies and other information considered as part of the evaluation and selection of a preferred alternative.

A. Safety Analysis

i. No Build Alternative

Under the condition that no path is built, bicyclists would continue to rely on the existing bike lanes along Riverside Drive in the western portion of the project area and the Ohio River Trail in the eastern portion. Between the western project terminus and the eastern entrance to International Friendship Park, no dedicated bicycle facilities are present. In this segment, bicyclists must either share the roadway with vehicular traffic or share the internal park path with pedestrians to continue traveling east–west.

Pedestrians currently utilize the sidewalk along Riverside Drive; however, several segments lack a tree lawn buffer and have little separation from moving traffic. Additionally, pedestrians are required to make an unsignalized and unprotected crossing at the intersection of Riverside Drive and Kemper Lane, which is a safety concern and may present discomfort for pedestrian users.

User experience along the existing corridor can be evaluated using ODOT's Level of Traffic Stress (LTS) methodology, which rates bicycle comfort on a scale from 1 (very low stress) to 4 (high stress). Riverside Drive currently has an LTS rating of 3 according to ODOT's Safety Viewer, indicating a medium-stress environment generally suitable for "enthused and confident" cyclists rather than the broader bicycling population. The Ohio River Trail maintains an LTS rating of 1, offering a low-stress facility appropriate for users of all ages and abilities.

A review of pedestrian crash data for the project area using the ODOT Transportation Information Mapping System (TIMS) indicates that no pedestrian-related crashes have been reported within the past five years. However, this absence of reported incidents may be attributable, at least in part, to low levels of bicycle and pedestrian activity resulting from the limited availability of comfortable, continuous facilities throughout the corridor.

ii. Build Alternatives

The proposed shared-use path will be separated from roadway traffic and is expected to have an LTS rating of 1. An LTS 1 environment is suitable for users of all ages and abilities and is anticipated to make the facility more appealing to a broader range of users than the no build alternative. Any segment-specific safety considerations or variations in LTS associated with the individual build alternatives are described below.

Segment 1

Potential bicycle and pedestrian conflicts with automobiles could occur at the drive openings for The Boathouse and both International Friendship Park entrances.

Segment 2

Potential bicycle and pedestrian conflicts with automobiles may occur within the shared-space section along Gladstone Avenue and the crossing at St Andrews Street.

Segment 3

Potential bicycle and pedestrian conflicts with automobiles may occur at the crossings of St. Andrews Street, Tennyson Street, McCullough Street, Carrel Street, and Bumont Street.

B. SUP Design Issues

This section describes the design criteria used for the SUP alternatives. Across all three segments, the desired minimum width for the SUP is 12 feet to support two-way bicycle and pedestrian travel and to meet current design guidance for regional trail facilities. In constrained locations where the available corridor narrows due to adjacent roadway features, retaining walls, or railroad right-of-way limitations, the trail width may be reduced to 8 feet. A significant challenge throughout the corridor is ensuring that all pedestrian access points meet ADA accessibility guidelines for horizontal and vertical alignments. Because all three segments are adjacent to an active rail line, coordination with the Indiana & Ohio Railway is required.

In several locations, the existing hillside and retaining-wall configurations encroach into the available corridor, further limiting the ability to maintain the desired trail width. To address these limitations, retaining walls may be required along the uphill side of the trail to support the widened trail platform, stabilize the slope, and minimize grading impacts. These walls will help maintain consistent trail width and alignment while reducing impacts to adjacent properties and existing vegetation. Further evaluation of retaining-wall locations, heights, and structural requirements will occur during detailed design, when refined survey data, geotechnical information, and grading analyses are available. This additional evaluation will ensure that wall placement is optimized for constructability, cost, and long-term performance.

Throughout the corridor, fencing is proposed between the trail and the active railroad to enhance user safety. The trail is designed for a 20-mile-per-hour design speed, consistent with AASHTO guidance for SUPs with moderate bicycle volumes and rolling terrain. The proposed horizontal and vertical alignments have been developed to comply with current ADA accessibility guidelines, with grades, cross slopes, and transition areas falling within allowable limits. As design progresses, additional verification will confirm that all accessibility requirements continue to be met. Existing conditions plans, build alternative plan sheets, and structure type studies are provided in **Attachments B, C, D, and E**, respectively.

Segment 1 – Design Considerations

Within Segment 1, several locations require reduced trail widths due to existing physical constraints, including narrow sections adjacent to retaining walls, roadway features, and railroad right-of-way limits. Achieving the desired 12-foot width in this segment could require modifications to the Rookwood Bridge and the preceding retaining wall if the track shift is not chosen as the preferred alternative. These improvements may include widening the bridge deck, adjusting parapet locations, or reconstructing portions of the retaining wall to provide adequate lateral clearance for the trail. These structural adjustments ensure that the trail can maintain a consistent width where feasible while accommodating the constrained geometry of the corridor.

Segment 2 – Design Considerations

A notable challenge within this segment is the shared-space condition along Gladstone Avenue, where the roadway is narrow and bordered by residential properties on one side and the active rail corridor on the other. These constraints limit available construction space and will require detailed coordination, phased construction, and open communication with residents to minimize disruptions. Achieving the desired 12-foot trail width will also require modifications to the Collins Avenue Bridge, including widening the bridge deck, adjusting parapet locations, reconstructing portions of the retaining wall, and raising the trail profile to achieve the necessary vertical clearance over Collins Avenue. These improvements provide for a continuous, accessible alignment through one of the most constrained areas of the corridor.

Segment 3 – Design Considerations

Several street-crossing improvements are required to support the proposed trail alignment and to provide safe, accessible connections to the surrounding roadway network. Pavement repairs and upgrades are needed at the Tennyson Street, McCullough Street, and Carrel Street crossings to address existing surface deficiencies and provide smooth transitions between the roadway and the SUP. These improvements may include localized pavement replacement, curb-ramp reconstruction, crosswalk enhancements, and adjustments to drainage structures. Achieving the desired 12-foot width in this segment will require modifications to the Delta Avenue Bridge and the preceding retaining wall, including potential bridge-deck widening, parapet adjustments, or retaining-wall reconstruction to provide adequate lateral clearance for the trail.

C. Post-Construction Stormwater Best Management Practices

This section summarizes the post-construction stormwater best management practices (BMPs) considered for the project. BMPs are measures designed to reduce pollutant loading and manage runoff quality by treating, detaining, or infiltrating stormwater generated by new impervious surfaces. The investigation of BMPs was conducted to determine which practices are likely to be incorporated into the project area while also meeting treatment requirements.

i. No Build Alternative

No post-construction stormwater BMPs would be required under the no build alternative.

ii. Build Alternatives

The total project earth-disturbed area used to evaluate post-construction stormwater BMP requirements is estimated at approximately 20.0 acres. This total includes the pedestrian-access alternatives and the larger earth-disturbed area associated with Torrence Road Station. The expanded earth-disturbed area reflects the combined footprint of the SUP, associated access points, grading limits, and structural modifications anticipated throughout the corridor. The final earth-disturbed area footprint will be fully calculated and verified during the detailed design phase, when refined survey data and construction limits are available. Based on the estimated 20.0-acre project earth-disturbed area, the required post-construction stormwater treatment area is 4.0 acres. The BMP analysis is provided in **Attachment F**.

Given the project site’s location in an urban corridor, constraints such as retaining walls, roadways, railroad tracks, steep grades, and limited grassy areas are predominantly present. Thus, there are limited locations where BMPs can be effectively sited, built, and maintained. In cases where proposed BMPs are determined to be unmaintainable due to

physical or operational limitations, ODOT's standard process for BMP mitigation will be followed. This process includes investigating the feasibility of BMP utilization and securing compensatory mitigation in coordination with ODOT to ensure regulatory compliance.

1. **Segment 1 – Beginning of Project (Sawyer Point) to Lancaster Street Tunnel**

Alternative A2: This alternative provides an opportunity to incorporate vegetated filter strips—vegetated areas designed to treat runoff from adjacent surfaces—alongside the path. Beginning at The Boathouse drive entrance and continuing to the International Friendship Park – Plaza of the Sun entrance, an 11-foot-wide filter strip is proposed to treat surface runoff from the adjacent 11-foot trail. The overall treatment provided is approximately 1.50 acres.

2. **Segment 2 – Lancaster Street Tunnel to Torrence Road Station**

Due to the steep hillside on the north side of the trail and the proximity of the active railroad on the south side, there is insufficient space within Segment 2 to accommodate any post-construction BMPs. The corridor is significantly constrained by both the natural topography and the minimum clearance requirements associated with the active railroad, leaving no feasible area for stormwater treatment features without compromising trail width, railroad safety, or slope stability. As a result, no post-construction BMP alternatives have been identified or selected for Segment 2.

3. **Segment 3 – Torrence Road Station to End Project**

Similar to Segment 2, the steep hillside on the north side of the trail and the proximity of the active railroad on the south side create substantial spatial limitations within Segment 3. These constraints prevent the incorporation of post-construction BMPs, as the available corridor width is fully occupied by the trail, required buffers, and railroad safety clearances. Given these conditions, no post-construction BMP alternatives have been identified or selected for Segment 3.

D. MOT

This section discusses the temporary traffic impacts required to construct the various build alternatives.

i. No Build Alternative

There would be no maintenance of traffic (MOT) impacts under the no build alternative.

ii. Build Alternatives

The MOT impacts that would occur for the project alternatives are discussed below.

1. Segment 1 – Begin Project (Sawyer Point) to Lancaster Street Tunnel

Construction of all build alternatives will result in temporary traffic impacts along Riverside Drive, particularly at driveways where curb ramp, grading, or access adjustments will require short-term lane closures or brief access restrictions. Temporary traffic control will also be required at the Rookwood Bridge underpass, with the extent and duration of temporary traffic control dependent on the preferred alternative selected. Structural activities—such as deck installation, structural member replacement, or abutment repairs—may necessitate short-duration lane restrictions or temporary closures to traffic traveling beneath the bridge to maintain safe work zones.

Rail service will remain active throughout construction; therefore, railroad flaggers will be required to maintain safe operations and coordinate train movements during work activities.

2. Segment 2 – Lancaster Street Tunnel to Torrence Road Station

Construction of all alternatives will result in temporary traffic impacts along Collins Avenue at the Collins Avenue Bridge. Structural work on the existing trestle—such as installing a new deck or replacing structural members—may require short-term closures or lane restrictions on the roadway beneath the structure.

All alternatives will also require temporary traffic impacts along Gladstone Avenue. A full closure of Gladstone Avenue will be necessary to construct the proposed path adjacent to the roadway. During this closure, residents will be directed to park on Collins Avenue. A minimum of a 4-foot pedestrian access route will be maintained along Gladstone Avenue to provide continued pedestrian access between Collins Avenue and residential properties.

Rail service will remain active throughout construction; therefore, railroad flaggers will be required to maintain safe operations and coordinate train movements during work activities.

3. Segment 3 – Torrence Road Station to End Project

Construction of all alternatives will result in temporary traffic impacts along St. Andrews Street, Walworth Avenue, Stanley Avenue, Eastern Avenue, Tennyson Street, McCullough Street, and Carrel Street. Work at intersections—including curb ramp and crosswalk construction—will require temporary lane and shoulder closures. Structural work on the existing bridges, including the Delta Avenue Bridge and the Stanley Avenue Bridge, may also require short-term closures or lane restrictions to accommodate deck replacement, structural repairs, or abutment work depending on the preferred alternative chosen.

The railroad line will remain active for the duration of the project; therefore, railroad flaggers will be required throughout construction to maintain safe rail operations.

Construction access will be required from multiple points along the corridor to accommodate equipment, materials, and staging needs. However, no significant access challenges are anticipated for any of the alternatives; the corridor provides adequate opportunities for contractor ingress and egress with appropriate coordination and temporary traffic control measures.

E. Right-of-Way Requirements

This section outlines the anticipated impacts on private property and provides an estimate of the permanent property acquisition required for construction of each SUP alternative and pedestrian access points within each segment. As project development progresses, the project team will coordinate with adjacent property owners to discuss the proposed improvements and potential impacts.

i. No Build Alternative

There would be no right-of-way impacts under the no build alternative.

ii. Build Alternatives

1. Segment 1 – Begin Project (Sawyer Point) to Lancaster Street Tunnel

Private property impacts would occur under both Hazen Street pedestrian access alternatives. Alternative F1 would affect 0.32 acres across six parcels, while Alternative F2 would affect 0.06 acres on a single parcel**.** No other permanent private property impacts are anticipated within Segment 1. All remaining improvements are fully contained within existing public or SORTA-owned property, utilizing available space without requiring additional acquisition. The proposed trail alignment, buffer zones, and supporting features—such as retaining walls, drainage components, and safety fencing—can be accommodated within the current corridor limits. As design development continues, the project team will verify right-of-way boundaries to ensure all elements remain fully

contained within the existing footprint. The impacted areas described above are illustrated in **Attachment D**.

2. Segment 2 – Lancaster Street Tunnel to Torrence Road Station

Private property impacts are associated with four of the five Torrence Road Station pedestrian access build alternatives. Alternative G1 would affect 0.06 acres across two parcels—the southern parcel owned by the City of Cincinnati/Greater Cincinnati Water Works, and the larger northern parcel privately owned. Alternative G2 remains entirely within the public right-of-way of Torrence Road, avoiding any additional property impacts. Alternative G3 would impact 1.53 acres across nine parcels, seven owned by the City of Cincinnati (Cincinnati Parks Board), with the remaining two parcels privately owned or owned by an undetermined entity. Alternative G4 would impact 0.53 acres across eleven parcels, two of which are not City-owned. Alternative G5 would affect 0.64 acres across three parcels, all owned by the City of Cincinnati (Cincinnati Parks Board). No other permanent right-of-way impacts are anticipated within Segment 2 for any design alternatives. All proposed improvements fall entirely within existing public or SORTA-owned right-of-way, utilizing available space without requiring additional property acquisition. The proposed trail alignment, buffer areas, and supporting features—such as retaining walls, drainage components, and safety fencing—can be constructed within the current corridor limits. As design progresses, the project team will continue to verify right-of-way boundaries to ensure all elements remain fully accommodated within the existing footprint. The impacted areas described above are illustrated in **Attachment D**.

3. Segment 3 – Torrence Road Station to End Project

Private property impacts are associated with the Delta Avenue Bridge Alternative J2, which would affect 0.10 acres on one privately owned parcel if the bridge is widened. The Tusculum Avenue pedestrian access alternative would also result in private property impacts, affecting 0.001 acres within a single privately owned parcel. Both Carrel Street pedestrian access alternatives would require the use of private property: Alternative K1 would impact 0.01 acres, and Alternative K2 would impact 0.05 acres, with both alternatives affecting the same privately owned parcel. No other permanent right-of-way or private property impacts are anticipated within Segment 3 for any associated design alternatives. All remaining improvements are fully contained within existing public or SORTA-owned right-of-way, utilizing available space without requiring additional property acquisition. The proposed trail alignment, buffer areas, and supporting features—such as retaining walls, drainage elements, and safety fencing—can be constructed within the current corridor limits. As design advances, the project team will continue to verify right-of-way boundaries to ensure all elements remain fully

accommodated within the existing footprint. The impacted areas described above are illustrated in **Attachment D**.

F. Utility Issues

Utility impacts for each segment are summarized below. Further coordination with the utility providers will occur throughout project development.

No Build Alternative

There would be no impacts to utilities under the no build alternative.

Build Alternatives

1. **Segment 1 – Begin Project (Sawyer Point) to Lancaster Street Tunnel**

No major utility impacts are anticipated within Segment 1, which lies along the railroad corridor. However, caution will be required during construction due to the proximity of existing overhead electric lines at the Bains Street intersection signal and at the overhead crossing near the Rookwood Bridge.

2. **Segment 2 – Lancaster Street Tunnel to Torrence Road Station**

No major utility impacts are anticipated within Segment 2, which lies along the railroad corridor. However, caution will be required during construction due to the proximity of existing overhead electric lines at Gladstone Avenue and at the Torrence Road Station.

3. **Segment 3 – Torrence Road Station to End Project**

No major utility impacts are anticipated within Segment 3, which lies along the railroad corridor. However, caution will be required during construction due to the proximity of existing overhead electric lines at all street crossings.

G. Environmental Analysis

The following is a summary of environmental resources within the Oasis Trail (PID 122971) project vicinity and the anticipated involvement with those resources. The summary is based on readily available literature review sources and a field survey for ecological resources.

No Build Alternative

There would be no impact to ecological features (habitats), Section 4(f)/6(f) resources, cultural resources, regulated materials, or drinking water resources under the no build alternative.

Build Alternatives

The following is a summary of environmental resources within the project vicinity and the anticipated involvement with those resources. The summary is based on readily available literature review sources and a field survey for ecological resources.

Ecological Resources: An ecological field survey was completed in early 2026. Ecological resource mapping is included in **Appendix G**. Survey findings are summarized below:

Aquatic Ecology: No streams, wetlands, or jurisdictional ditches were identified. A stormwater retention pond is located east of 3107 Walworth Avenue.

Vegetative Communities: The project study area land cover consists of 59.47 acres of Developed, Medium Intensity (DM), 30.181 acres of Upland Forested (UF), and 0.070 acres of Developed Open Space (DS).

Federally Threatened and Endangered Species: 30.18 acres of suitable wooded habitat for endangered bat species was identified within the project study area. Periods of tree cutting restrictions will likely be required to avoid impacts during the bat summer roosting season.

State Listed Species: Suitable habitat for two state listed species, Maypop (*Passiflora incarnata*) and Running buffalo clover (*Trifolium stoloniferum*), was identified within the project study area. Presence/absence surveys will be required for these state listed species during the appropriate seasons to determine impacts.

Soil Types: The project study area is made up primarily of Eden Urban land complex, 25 to 40 percent slopes; Eden flaggy silt clay loam, 40 to 60 percent slopes; Urban land-Alfic Udarents-Eden complex, 25 to 60 percent slopes; Urban land-Mollic Udarents complex, loamy substratum, 0 to 12 percent slopes, occasionally flooded; urban land, 0 to 12 percent slopes, occasionally flooded; Urban land-Udorthents complex, 0 to 12 percent slopes; and Urban land-Udorthents complex, 0 to 12 percent slopes, occasionally flooded.

Waterway Permits: The project study area is located in an ineligible watershed as identified on the Ohio Environmental Protection Agency (EPA) 401 Water Quality Certification mapper. No streams, wetlands, or jurisdictional ditches were identified during the ecological field survey; therefore, waterway permits are not likely to be required.

Floodplains: Based on a review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels, the project study area contains designated special flood hazard areas. The project area falls within Zone AE. A copy of the FEMA FIRM is included in **Appendix G**.

Cultural Resources: Based on a review of the Ohio State Historic Preservation Office (OHPO) geographic information system (GIS) database, several sites listed in the National Register of Historic Places (NRHP) are located in the project study area. A Section 106 Scoping Request Form will be required. Several Ohio Historic Inventory sites, but no Ohio Archaeological Inventory sites, have been identified in the project study area. There are also buildings that are at least 50 years old in the project vicinity. If these properties are impacted and are found to be eligible for listing in the NRHP, additional consideration will be required. The OHPO database map is included in **Appendix G**.

Section 4(f) Cultural Resources: Because NRHP listed sites are present within the project study area, Section 4(f) coordination is anticipated.

Section 4(f) Recreational Resources: TM Berry International Friendship Park is a narrow strip of green space between Riverside Drive and the Ohio River that will intersect the Great Parks Oasis Trail. Section 4(f) coordination will be required.

In addition, Section 4(f) coordination may be required for Sawyer Point Pickleball & Tennis Courts, a series of publicly owned racquetball sport courts along E Pete Rose Way, and for Ferry Street Park, just south of Riverside Drive.

Section 6(f) Resources: TM Berry International Friendship Park was acquired using Land & Water Conservation Fund (LWCF) Grant No. 39-00990 in 1984. It was acquired to extend Eden Park along the Ohio River. Section 6(f) coordination will be required for TM Berry International Friendship Park. The LWCF Grant Listing is included in **Appendix G.**

Noise and Air Quality: Noise and air quality impacts will be evaluated in accordance with ODOT Office of Environmental Services (OES) guidance after a preferred alternative has been selected. Any option that adds capacity, moves travel lanes more than 50 percent closer to sensitive receivers, or alters the vertical alignment of the travel lanes will require a noise analysis. If necessary, a noise analysis and, if warranted and feasible, consideration for noise abatement will be undertaken. Because this is an all-purpose trail project, noise and air quality impacts are not anticipated.

Drinking Water Resources:

Drinking Water: Based on a review of the Ohio EPA's Drinking Water Source Protection Areas Map, the study area is partially located within the Greater Miami SSA. A copy of the map is included in **Appendix G**.

Water Wells: Based on the Ohio Department of Natural Resources' Water Wells Database Maps, 4 water wells and 19 sealed wells are recorded in the project vicinity. Impacts to water wells will be evaluated as the project design progresses.

Farmland: Based on a review of TigerWEB Mapping by the US Census Bureau, the project is located within the Cincinnati Urbanized Area boundary. No farmland impacts are anticipated.

Regulated Materials: A search of the Ohio Regulatory Property Search (ORPS) identified the following sites within or adjacent to the project study area:

Resource Conservation and Recovery Act (RCRA) Database (US EPA)

- City of Cincinnati (1108 Eastern Avenue)
- Lackner Sign Co. (1120 Eastern Avenue)
- Pendleton Heritage Center (2760 Eastern Avenue)
- Railroad Bridge Over Eastern Avenue (3450 Eastern Avenue)

Bureau of Underground Storage Tank Regulations (BUSTR) Database – Leaking Underground Storage Tank (LUST) Locations

- Adams Landing (1262 Eastern Avenue) – 1 SUS/CON from regulated underground storage tank (UST)
- Value Oil Co. (2740 Eastern Avenue) – 1 SUS/CON from regulated UST
- Columbia Square/Cell Tower Site (3526 Eastern Avenue)
- George Brandstetter & Sons (4021 Dumont Street) – 6 tanks
- Diversified Opthalmics (250 McCullough Street) – 6 tanks

Division of Environmental Response and Revitalization Database (Ohio EPA)

- American Compress Steel Co., Cincinnati (925 Eastern Avenue)

Superfund Enterprise Management System (SEMS) (US EPA)

- Kinder Morgan Emergency Response (3806 Kellogg Avenue) – Superfund (Non-National Priorities List)

Based on the identified database listings, additional research and coordination would be required if excavation near these parcels exceeds 6 feet or if right-of-way acquisition from these parcels is necessary. A Regulated Materials Review (RMR) Screening with file reviews will be required. The ORPS Report is included in **Appendix G.**

Public Involvement: Great Parks has posted articles explaining the Oasis Trail Feasibility Study, published a press release, and made several social media posts requesting public input on the proposed project. Great Parks received written comments that will be considered during the design phase of the project. Public involvement

activities will continue through detailed design of the project to gather feedback from residents in the area, consistent with ODOT's public involvement guidance.

Conclusion: The project would likely meet the thresholds of a C2 level categorical exclusion (CE) document. The document would be completed using ODOT's online EnviroNet system. Once Stage 1 plans are available, the technical studies will be completed and submitted for review and coordination.

4. Public Involvement

To be included after the public meeting.

5. Cost Estimates

Preliminary construction cost estimates have been developed for each build alternative within Segments 1, 2, and 3, including all potential pedestrian access points at Kemper Lane, Hazen Street, Riverside Drive, Columbia Parkway, Hoff Avenue, St. Andrews Street, Walworth Avenue, Delta Avenue, Stanley Avenue, Tusculum Avenue, Congress Avenue, Donham Street, and the Carrel Street trail connection. These preliminary estimates are summarized below and provided in **Attachment I** as well as within the evaluation matrices shown in **Tables 1** through **15** in Section 6. More detailed construction cost estimates will be prepared during development of the preferred alternative in the detailed design phase, when project elements and construction assumptions can be refined and validated.

COST ESTIMATE SUMMARY OF OASIS TRAIL						
	To and From	Alternatives				
BEGIN PROJECT (SAWYER POINT) TO MONTGOMERY INN BOAT HOUSE	$111,771.01	0				
MONTGOMERY INN BOAT HOUSE TO INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN (ALTERNATIVES)		A1 $986,829.59	A2 $1,213,736.01	A3 $1,155,087.02		
INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN (ALTERNATIVES)		B1 $116,793.56	B2 $361,603.42			
INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN ALTERNATIVES TO KEMPER LN ACCESS POINT	$929,638.84					
KEMPER LN ACCESS POINT TO ROOKWOOD BRIDGE (ALTERNATIVES)		C1 $228,347.14	C2 $1,831,544.88	C3 $255,279.42		
ROOKWOOD BRIDGE (ALTERNATIVES)		D1 $90,509.29	D2 $533,807.94	D3 $381,339.20		
ROOKWOOD BRIDGE TO LANCASTER TUNNEL	$630,793.57					
LANCASTER ST. PEDESTRIAN ACCESS TUNNEL		E1 N/A	E2 $172,950.00	E3 $49,611,220.72		
LANCASTER ST. PEDESTRIAN ACCESS TUNNEL TO HAZEN ST. ACCESS POINT	$266,136.67					
HAZEN ST. ACCESS POINT		F1 $487,832.53	F2 $60,568.68	No Build		
HAZEN ST. ACCESS POINT TO COLLINS AVE. BRIDGE	$1,214,720.97					
COLLINS AVE BRIDGE MODIFICATIONS		$325,444.80	$313,914.80	$383,094.80	$117,904.80	
GLADSTONE AVE.	$533,256.81					
GLADSTONE AVE. TO TORRENCE RD STATION	$544,070.07					
TORRENCE RD STATION		G1 $496,988.81	G2 $70,489.24	G3 $459,485.72	G4 $2,788,793.63	G5 $3,570,866.94
TORRENCE TO HOFF AVE. CONNECTION	$587,147.01					
HOFF AVE. CONNECTION	$87,237.95					
HOFF AVE. CONNECTION TO ST. ANDREWS ST.	$622,277.55					
ST. ANDREWS ST.		H1 $354,856.36	H2 $120,297.94			
ST. ANDREWS ST. TO WALWORTH TUNNEL	$1,294,306.91					
WALWORTH TUNNEL	$85,887.77					
WALWORTH TUNNEL TO DELTA AVE. BRIDGE		J1 $278,874.96	J2 $1,686,574.80	J3 $427,848.97		
DELTA AVE. PEDESTRAIN ACCESS POINT	$258,462.83					
DELTA AVE. ACCESS POINT TO STANLEY AVE. ACCESS POINT	$305,962.84					
STANLEY AVE. ACCESS POINT	$276,030.69					
STANLEY AVE. BRIDGE	$87,704.84					
STANLEY AVE. BRIDGE TO CONGRESS TUNNEL/TUSCULUM AVE. ACCESS POINT	$259,615.01					
TUSCULUM AVE. ACCESS POINT	$9,777.89					
TUSCULUM AVE. ACCESS POINT TO DONHAM ST. ACCESS POINT	$197,234.07					
DONHAM ST. ACCESS POINT	$19,918.21					
DONHAM ST. ACCESS POINT TO CARREL ST.	$597,515.02					
CARREL ST		K1 $42,268.12	K2 $214,234.12			
INCIDENTALS	$970,000.00					

The project has secured $8 million and $6 million in US EPA Community Multiscale Air Quality Model (CMAQ) grants; however, a remaining funding gap of approximately $3.52 million exists for design and construction, excluding real estate acquisition and transfers. This gap will be covered through Great Parks' local match**.** Great Parks continues to lead efforts to secure additional grant funding and private contributions to close the shortfall. For this project, "local match" refers to funds available to support capital construction, which may or may not include levy revenue.

6. Comparison of Alternatives

The following section presents a series of comparison matrices used to evaluate the project's design alternatives and potential access points. Each matrix provides a structured, side-by-side review of the options based on the key criteria identified within the matrix. Together, these evaluations establish a clear basis for determining the most practical and effective configuration for advancing the SUP project.

Evaluation Matrices for Segment 1 Shared-Use Path Alternatives and Associated Pedestrian Access Points (Oasis Trail, PID 122971)

Table 1 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 1				
Feature Consideration	The Montgomery Boathouse Inn to International Friendship Park – Valley of the Sun			
	No Build Alternative	Alternative A1	Alternative A2	Alternative A3
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	There are no off-street existing bicycle facilities within this segment. Traveling next to vehicular traffic is a safety concern.	Three pedestrian bicycle conflict points with vehicular traffic – at driveway entrances	Three pedestrian bicycle conflict points with vehicular traffic – at driveway entrances	Three pedestrian bicycle conflict points with vehicular traffic – at driveway entrances
Bicycle Level of Traffic Stress	LTS 4	LTS 2	LTS 2	LTS 2
Engineering Issues				
Width of SUP (feet)	N/A	10 feet	11 feet	12 feet
Trail Design Issues	N/A	Constrained	None	None
Structures Required	None	None	None	None
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	0.00
Ecological Resources				
Threatened & Endangered Species	No impact	No impact	No impact	No impact
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	TM Berry International Friendship Park	TM Berry International Friendship Park	TM Berry International Friendship Park
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$986,830	$1,213,736	$1,155,087
Conclusion				
Recommendation	Not Recommended	Not Recommended	Not Recommended	Recommended as Preferred Alternative

Table 2 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 1				
Feature Consideration	International Friendship Park – Valley of the Sun			
	No Build Alternative	Alternative B1	Alternative B2	
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	
Safety Analysis				
Safety Issues	There are no off-street existing bicycle facilities within this segment. Traveling next to vehicular traffic is a safety concern.	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	
Bicycle Level of Traffic Stress	LTS 4	LTS 1	LTS 1	
Engineering Issues				
Width of SUP (feet)	N/A	8 feet (110ft)	12 feet	
Trail Design Issues	N/A	Constrained 8ft width that gradually opens up to 12ft over 110ft	None	
Structures Required	None	None	Retaining Wall	
Utility Relocations/Issues	None	None	Storm and Sanitary Sewer Relocation	
ADA Accessibility	N/A	Yes	Yes	
Property Impacts				
Property Impacts (acres	None	0.00	0.00	
Ecological Resources				
Threatened & Endangered Species	No impact	No impact	No impact	
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	TM Berry International Friendship Park	TM Berry International Friendship Park	
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$116,794	$361,603	
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative	Not Recommended	

Table 3 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 1				
Feature Consideration	International Friendship Park – Valley of the Sun to Rookwood Bridge			
	No Build Alternative	Alternative C1	Alternative C2	Alternative C3
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	There are no off-street existing bicycle facilities within this segment. Traveling next to vehicular traffic is a safety concern.	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	LTS 4	LTS 1	LTS 1	LTS 1
Engineering Issues				
Width of SUP (feet)	N/A	9 to 10 feet (600ft)	12 feet	12 feet
Trail Design Issues	N/A	Constrained	None	None
Structures Required	None	None	Retaining Wall Relocation	Railroad Track shift
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	0.00
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$228,347	$1,831,545	$255,279
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative 2	Not Recommended	Recommended as Preferred Alternative 1

Table 4 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 1				
Feature Consideration	Rookwood Bridge			
	No Build Alternative	Alternative D1	Alternative D2	Alternative D3
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	There are no off-street existing bicycle facilities within this segment. Traveling next to vehicular traffic is a safety concern.	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	LTS 4	LTS 1	LTS 1	LTS 1
Engineering Issues				
Width of SUP (feet)	N/A	8 feet	12 feet	12 feet
Trail Design Issues	N/A	Constrained condition without required 1 foot minimum side buffers on both sides of trail	None	None
Structures Required	None	None	Bridge widening reconstruction	Railroad track shift
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	0.00
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$90,509	$533,808	$381,339
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative 2	Not Recommended	Recommended as Preferred Alternative 1

Evaluation Matrices for Segment 2 Shared-Use Path Alternatives and Associated Pedestrian Access Points (Oasis Trail, PID 122971)

Table 5 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 2				
Feature Consideration	**Lancaster Tunnel Pedestrian Access Point**			
	No Build Alternative	**Alternative E1**	**Alternative E2**	**Alternative E3**
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	**No**	**Yes**	**No**	**Yes**
Safety Analysis				
Safety Issues	**The existing tunnel is currently closed due to deterioration and safety reasons.**	**No pedestrian/bicycle conflict points with vehicular traffic**	**No pedestrian/bicycle conflict points with vehicular traffic**	**No pedestrian/bicycle conflict points with vehicular traffic**
Bicycle Level of Traffic Stress	**LTS 4**	**LTS 1**	**LTS 1**	**LTS 1**
Engineering Issues				
Width of SUP (feet)	**N/A**	**8 feet**	**12 feet**	**12 feet**
Trail Design Issues	**N/A**	**Renovation or replacement of tunnel would require the construction under the existing active track and replacement of existing stairs**	**None**	**None**
Structures Required	**None**	**Rehabilitate existing tunnel walls and stairway**	**Abandon existing tunnel and stairway**	**Replace tunnel and stairway**
Utility Relocations/Issues	**None**	**None**	**None**	**None**
ADA Accessibility	**N/A**	**No**	**N/A**	**No**
Property Impacts				
Property Impacts (acres)	**None**	**0.00**	**0.00**	**0.00**
Ecological Resources				
Threatened & Endangered Species	**No impact**	**Suitable habitat for federally listed bats**	**Suitable habitat for federally listed bats**	**Suitable habitat for federally listed bats**
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	**None**	**None**	**None**	**None**
Preliminary Cost Estimates				
Estimated Construction Costs	**N/A**	**N/A**	**$172,950**	**$49,611,221**
Conclusion				
Recommendation	**Not Recommended**	**N/A**	**Recommended as Preferred Alternative**	**Not Recommended**

Table 6 — Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 2				
Feature Consideration	Hazen Street Pedestrian Access Point			
	No Build Alternative	Alternative F1	Alternative F2	
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	
Safety Analysis				
Safety Issues	N/A	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	
Engineering Issues				
Width of SUP (feet)	N/A	12 feet	10 feet	
Trail Design Issues	N/A	Grades and tieback wall require the use of switchbacks and retaining walls to make an accessible path to proposed trail	Grades and tieback wall require the use of steps	
Structures Required	None	Retaining walls and railings	Retaining walls/curbs, railings, bicycle runnel, and steps	
Utility Relocations/Issues	None	None	None	
ADA Accessibility	N/A	YES	No	
Property Impacts				
Property Impacts (acres)	None	0.32 (6 Parcels)	0.06 (1 Parcel)	
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$487,833	$60,569	
Conclusion				
Recommendation	Recommended as Preferred Alternative	Not Recommended	Not Recommended	

Table 7 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 2				
Feature Consideration	**Columbia Parkway Pedestrian Access Point**			
	No Build Alternative	**Alternative G5**		
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	**No**	**Yes**		
Safety Analysis				
Safety Issues	**N/A**	**No pedestrian/bicycle conflict points with vehicular traffic**		
Bicycle Level of Traffic Stress	**N/A**	**LTS 1**		
Engineering Issues				
Width of SUP (feet)	**N/A**	**12 feet**		
Trail Design Issues	**N/A**	**Grades require the use of switchbacks and retaining walls or elevated boardwalk to make an accessible path to proposed trail**		
Structures Required	**None**	**Retaining walls or elevated boardwalk with railings**		
Utility Relocations/Issues	**None**	**None**		
ADA Accessibility	**N/A**	**Yes**		
Property Impacts				
Property Impacts (acres)	**None**	**0.64 (3 Parcels)**		
Ecological Resources				
Threatened & Endangered Species	**No impact**	**Suitable habitat for federally listed bats**		
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	**None**	**None**		
Preliminary Cost Estimates				
Estimated Construction Costs	**N/A**	**$3,570,867**		
Conclusion				
Recommendation	**Recommended as Preferred Alternative**	**Not Recommended**		

Table 8 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 2					
Feature Consideration		Torrence Road Station Pedestrian Access Point			
	No Build Alternative	Alternative G1	Alternative G2	Alternative G3	Alternative G4
	Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes	Yes
	Safety Analysis				
Safety Issues	N/A	No pedestrian/ bicycle conflict points with vehicular traffic	No pedestrian/ bicycle conflict points with vehicular traffic	No pedestrian/ bicycle conflict points with vehicular traffic	No pedestrian/ bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	LTS 1	LTS 1
	Engineering Issues				
Width of SUP (feet)	N/A	12 feet	8 feet to 9 feet	12 feet	12 feet
Trail Design Issues	N/A	Grades require the use of switchbacks and retaining walls to make an accessible path to proposed trail	Walk follows existing grade of Torrence Road	Grades require the use of switchbacks and retaining walls to make an accessible path to proposed trail	Grades require the use of switchbacks and retaining walls to make an accessible path to proposed trail
Structures Required	None	Retaining walls or elevated boardwalk with railings	None	Retaining walls with railings	Retaining walls, elevated boardwalk with railings
Utility Relocations/Issues	None	None	None	None	None
ADA Accessibility	N/A	Yes	YES	YES	YES
	Property Impacts				
Property Impacts (acres)	None	0.06 (1 Parcel)	0.00	1.53 (11 Parcels)	0.53 (9 Parcels)
	Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
	Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None	None
	Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$496,989	$70,489	$459,486	$2,788,794
	Conclusion				
Recommendation	Not Recommended	Not Recommended	Recommended as Preferred Alternative	Not Recommended	Not Recommended

Evaluation Matrices for Segment 3 Shared-Use Path Alternatives and Associated Pedestrian Access Points (Oasis Trail, PID 122971)

Table 9 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	**Hoff Avenue Pedestrian Access Point**			
	No Build Alternative	**Build Alternative**		
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	**No**	**Yes**		
Safety Analysis				
Safety Issues	**N/A**	**Access requires crossing of active track**		
Bicycle Level of Traffic Stress	**N/A**	**LTS 1**		
Engineering Issues				
Width of SUP (feet)	**N/A**	**5 feet**		
Trail Design Issues	**N/A**	**Existing steps need renovation for use with a bicycle**		
Structures Required	**None**	**Steps with bicycle runnel, railings, and retaining walls**		
Utility Relocations/Issues	**None**	**None**		
ADA Accessibility	**N/A**	**No**		
Property Impacts				
Property Impacts (acres)	**None**	**0.00**		
Ecological Resources				
Threatened & Endangered Species	**No impact**	**Suitable habitat for federally listed bats**		
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	**None**	**None**		
Preliminary Cost Estimates				
Estimated Construction Costs	**N/A**	**$87,238**		
Conclusion				
Recommendation	**Not Recommended**	**Recommended as Preferred Alternative**		

Table 10 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	St. Andrews Street Pedestrian Access Point			
	No Build Alternative	Alternative H1	Alternative H2	
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	
Safety Analysis				
Safety Issues	N/A	Access requires crossing of active track	Access requires crossing of active track	
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	
Engineering Issues				
Width of SUP (feet)	N/A	12 feet	5 feet	
Trail Design Issues	N/A	Grades require switchback to create an accessible path to trail access	Existing steps need renovation for use with bicycle	
Structures Required	None	Retaining walls and railings	Steps with bicycle runnel, railings, and retaining walls	
Utility Relocations/Issues	None	None	None	
ADA Accessibility	N/A	Yes	No	
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	No impact	
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$354,856	$120,298	
Conclusion				
Recommendation	Not Recommended	Not Recommended	Recommended as Preferred Alternative	

Table 11 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	**Walworth Tunnel Pedestrian Access Point**			
	No Build Alternative	**Build Alternative**		
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	**No**	**Yes**		
Safety Analysis				
Safety Issues	**N/A**	**Walworth Avenue is low stress and the tunnel is easy to use. Adding a runnel to existing stairs will improve usability.**		
Bicycle Level of Traffic Stress	**N/A**	**LTS 1**		
Engineering Issues				
Width of SUP (feet)	**N/A**	**12 feet**		
Trail Design Issues	**N/A**	**None**		
Structures Required	**None**	**Retaining walls and railings**		
Utility Relocations/Issues	**None**	**None**		
ADA Accessibility	**N/A**	**Yes**		
Property Impacts				
Property Impacts (acres)	**None**	**0.00**		
Ecological Resources				
Threatened & Endangered Species	**No impact**	**Suitable habitat for federally listed bats**		
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	**None**	**None**		
Preliminary Cost Estimates				
Estimated Construction Costs	**N/A**	**$85,888**		
Conclusion				
Recommendation	**Not Recommended**	**Recommended as Preferred Alternative**		

Table 12 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	Delta Avenue Bridge			
	No Build Alternative	Alternative J1	Alternative J2	Alternative J3
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	N/A	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	LTS 1
Engineering Issues				
Width of SUP (feet)	N/A	8 feet	12 feet	12 feet
Trail Design Issues	N/A	Constrained	None	None
Structures Required	None	None	Bridge widening and retaining wall relocation	Railroad track shift
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	None	0.10 (1 Parcel)	None
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$278,875	$1,686,575	$427,849
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative 2	Not Recommended	Recommended as Preferred Alternative 1

Table 13 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	Delta Avenue, Stanley Avenue, and Tusculum Avenue – Pedestrian Access Point			
	No Build Alternative	Delta Avenue Access Build Alternative	Stanley Avenue Access Build Alternative	Tusculum Avenue Access Build Alternative
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	N/A	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	LTS 1
Engineering Issues				
Width of SUP (feet)	N/A	12 feet	12 feet	12 feet
Trail Design Issues	N/A	Requires switchbacks in trail access	Requires switchbacks in trail access	None
Structures Required	None	Removal of existing retaining wall section, reinforcement of slope with new retaining walls	Removal of existing retaining wall section, reinforcement of slope with new retaining walls	None
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	0.001 acres (1 Parcel)
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$258,463	$276,031	$9,778
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative	Not Recommended	Recommended as Preferred Alternative

Table 14 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	**Donham Street Pedestrian Access Point**			
	No Build Alternative	**Build Alternative**		
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	**No**	**Yes**		
Safety Analysis				
Safety Issues	**N/A**	**No pedestrian/bicycle conflict points with vehicular traffic**		
Bicycle Level of Traffic Stress	**N/A**	**LTS 1**		
Engineering Issues				
Width of SUP (feet)	**N/A**	**11 feet**		
Trail Design Issues	**N/A**	**Avoiding existing utility poles and/or existing vegetation**		
Structures Required	**None**	**None**		
Utility Relocations/Issues	**None**	**None**		
ADA Accessibility	**N/A**	**Yes**		
Property Impacts				
Property Impacts (acres))	**None**	**0.00**		
Ecological Resources				
Threatened & Endangered Species	**No impact**	**Suitable habitat for federally listed bats**		
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	**None**	**None**		
Preliminary Cost Estimates				
Estimated Construction Costs	**N/A**	**$19,918**		
Conclusion				
Recommendation	**Not Recommended**	**Recommended as Preferred Alternative**		

Table 15 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	Carrel Street – Eastern Terminus			
	No Build Alternative	Alternative K1	Alternative K2	
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	
Safety Analysis				
Safety Issues	N/A	Two pedestrian bicycle conflict points with vehicular traffic – at street crossings	Two pedestrian bicycle conflict points with vehicular traffic – at street crossings	
Bicycle Level of Traffic Stress	N/A	LTS 2	LTS 2	
Engineering Issues				
Width of SUP (feet)	N/A	12 feet	10 feet	
Trail Design Issues	N/A	Follows existing grade of Carrel Street	Requires road diet of Carrel Street with switchback	
Structures Required	None	None	Retaining wall and railings	
Utility Relocations/Issues	None	None	None	
ADA Accessibility	N/A	Yes	Yes	
Property Impacts				
Property Impacts (acres)	None	0.01 (1 Parcel)	0.05 (1 Parcel)	
Ecological Resources				
Threatened & Endangered Species	No impact	No impact	No impact	
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	$42,268	$214,234	
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative	Not recommended	

7. Preferred Alternatives

The preferred alternatives for Segments 1, 2, and 3 were selected based on the engineering and environmental analyses summarized in this Feasibility Study report, along with public input received throughout the project. In coordination with the City of Cincinnati and Great Parks**,** these alternatives reflect the agencies' shared priorities for safety, connectivity, and long-term maintainability. A summary of the preferred alternative for each segment is provided below.

A. Segment 1 – Begin Project to Lancaster Tunnel

The Montgomery Boathouse Inn to International Friendship Park – Valley of the Sun

Alternative A3 places the shared-use path within the abandoned railroad corridor, made available through removal of the existing sidewalk and bollard fence. Given the heavy pedestrian use in this area, this alignment is designed to support a preferred 12-foot-wide shared-use path, providing comfortable two-way travel and reducing user conflicts. A 2-foot buffer is included along the fence line to enhance safety and separation. To protect existing mature trees, the alternative incorporates a 10-foot tree lawn, ensuring construction avoids disturbance to critical root zones. This alternative effectively accommodates high user demand while maintaining the corridor's existing environmental features. International Friendship Park – Plaza o□the Sun. **See Figure 52.**

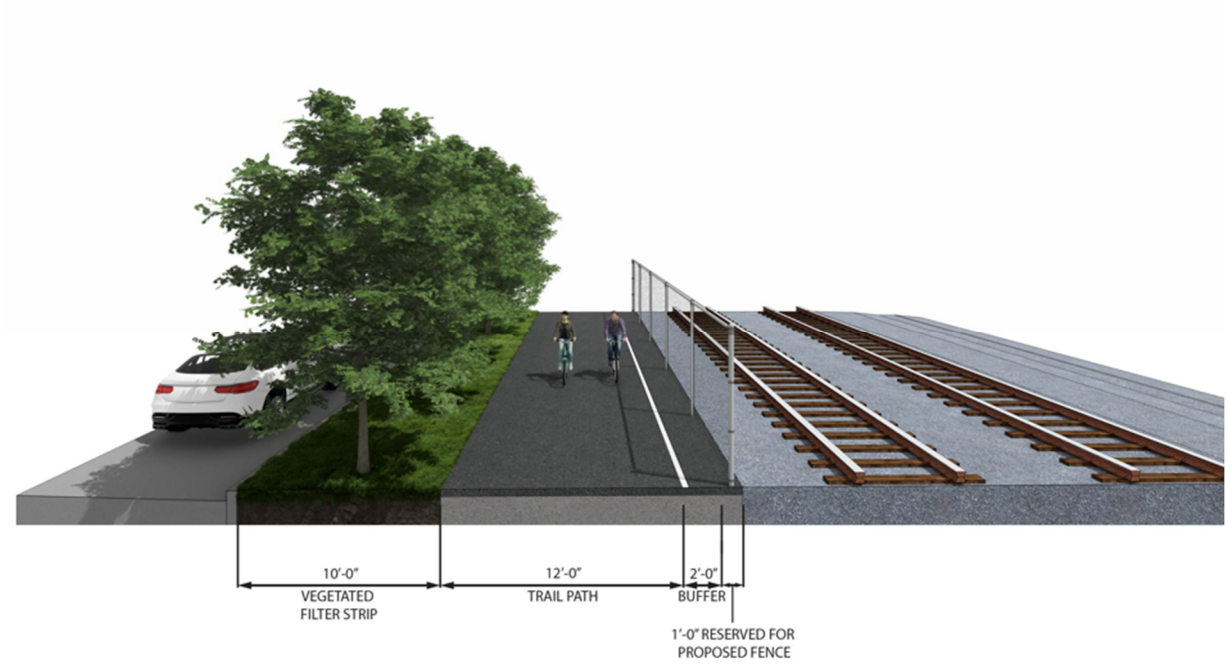


Figure 52 – Preferred Alternative A3

International Friendship Park – Plaza of the Sun

Alternative B1 was selected as the Preferred Alternative for the International Friendship Park – Plaza of the Sun segment. This alternative was chosen based on its minimal construction impacts and associated costs while accommodating the constraints of the corridor. The proposed trail width is constrained to 8 feet for a portion of the alignment, widening to 12 feet over a 110-foot section, allowing it to fit within the available space while still providing areas of expanded width for improved user flexibility. A key advantage of Alternative B1 is that it eliminates the need to replace the existing retaining wall, avoiding structural work, utility relocations, and preventing the removal of the buffered bike lane along Riverside Drive, and eliminating the need for relocation of existing storm and sanitary sewer infrastructure. As a result of these reduced impacts and avoided improvements, Alternative B1 is also the least costly option for this segment. See **Figure 53**.

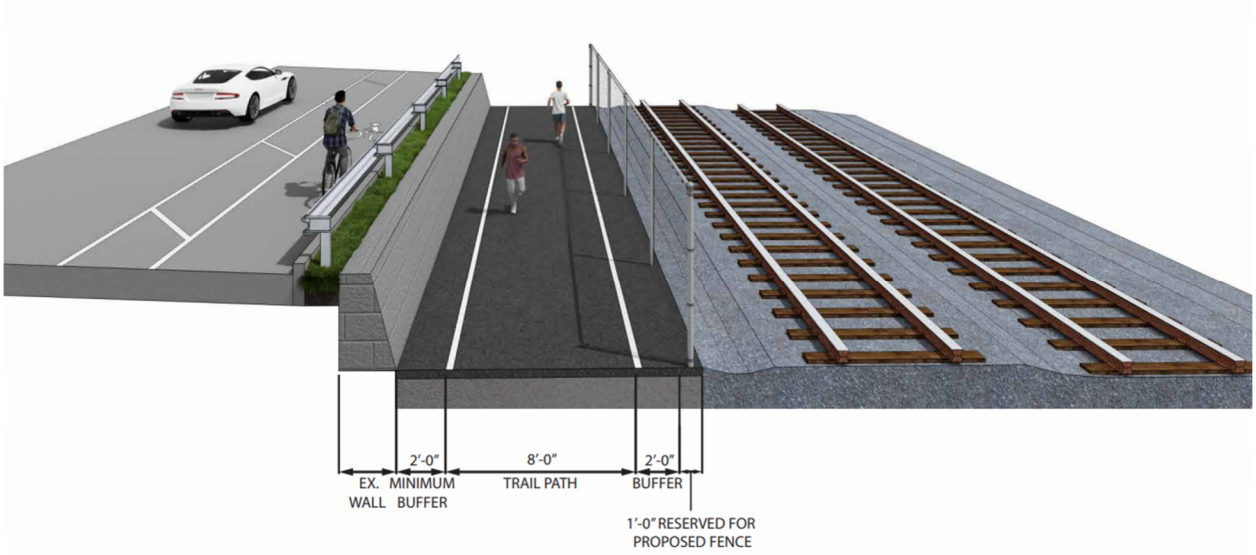


Figure 53 – Preferred Alternative B1

International Friendship Park – Plaza of the Sun to Rookwood Bridge

Alternative C3 was selected as **Preferred Alternative 1** for the International Friendship Park – Plaza of the Sun to Rookwood Bridge segment. This alternative provides a standard-compliant shared-use path width while avoiding the significant costs associated with reconstructing the existing retaining wall. By shifting the active rail tracks to the south, the design accommodates a **12-foot-wide** trail without requiring major structural modifications. Although coordination with the railroad will be necessary due to the proposed track realignment, this approach eliminates the need for extensive retaining wall reconstruction, making Alternative C3 substantially more cost-effective than Alternative C2 while still meeting desired trail width standards. **See Figure 53.**

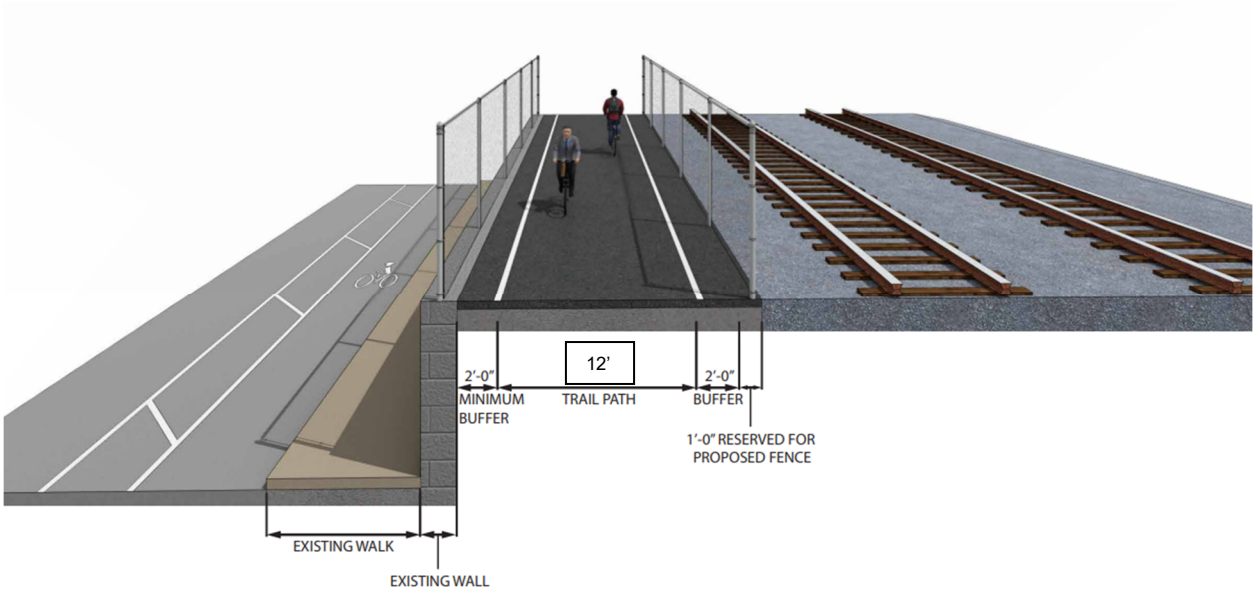


Figure 54 – Preferred Alternative C3

If coordination with the railroad for **Alternative C3** is unsuccessful, **Alternative C1** (Constrained Condition) serves as a viable fallback option. This alternative provides a constrained 9- to 10-foot-wide trail where right-of-way and structural limitations restrict available space. It remains a practical and financially responsible solution given the substantial **costs** associated with **Alternative C2**, which would require major retaining wall reconstruction to achieve a full 12-foot width.

To maintain pedestrian mobility within this constrained segment**,** pedestrians could continue using the existing sidewalk along Riverside Drive**,** allowing the narrower trail to function primarily as a shared-use facility for bicyclists and higher-speed users. Although the reduced width does not meet the 11-foot minimum standard, it remains safe, functional, and context-appropriate within the corridor's physical limitations. As a result, **Alternative C1** offers a feasible, lower-cost option where achieving the full trail width is not possible due to structural constraints or unsuccessful railroad coordination. **See Figure 55.**

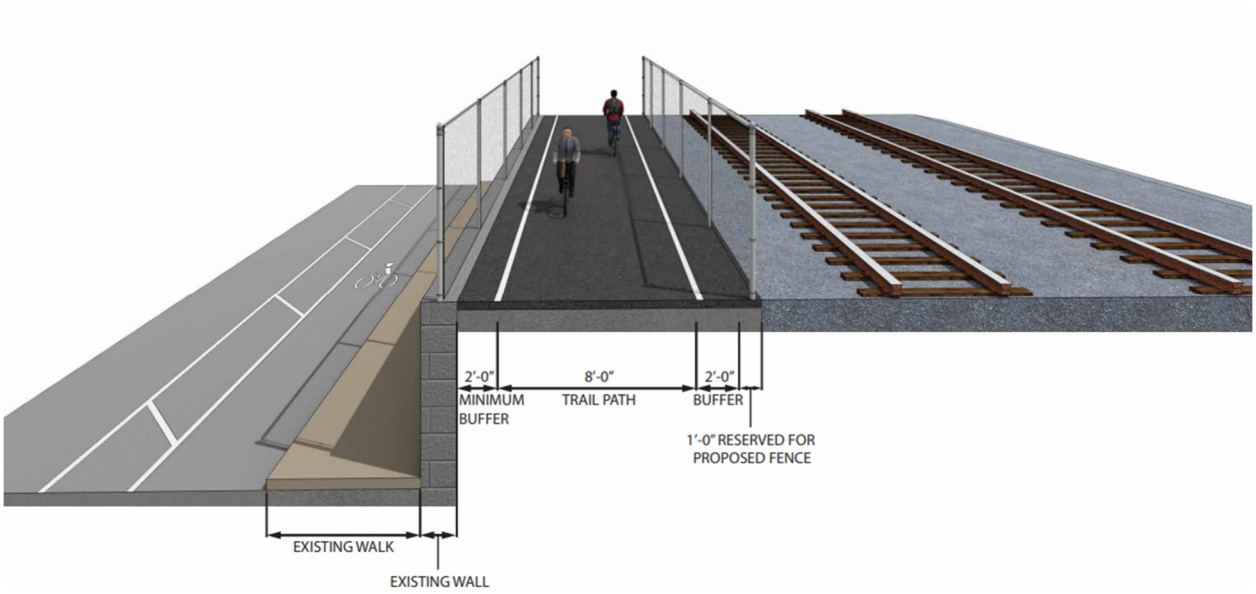


Figure 55 – Preferred Alternative C1

Preferred Pedestrian Access Point – Kemper Lane

A preferred pedestrian access point location is identified at the existing drive near **Kemper Lane** on Riverside Drive, providing a convenient and intuitive connection between the Walnut Hills neighborhood and the proposed shared-use path corridor. The existing drive offers a direct approach to the SUP, making it well suited for an ADA-accessible access point with minimal grading or structural modifications. Under this alternative, the existing swing gate would be removed, and any broken pavement between the current sidewalk and the proposed SUP would be replaced to create a smooth, continuous route.

This location gives nearby residents a safe, visible entry to the trail and supports overall network connectivity within the East Community. Its suitability—along with spacing relative to other access points and emergency access needs—will be further refined during detailed design. The **Kemper Lane** access point serves as the preferred location for pedestrian access in this segment of the corridor. **See Figure 56.**



Figure 56 –Preferred Kemper Lane Access Point

Rookwood Bridge

Alternative D3 is identified as the **preferred alternative 1** for accommodating the shared-use path across the Rookwood Bridge. The bridge was originally designed to support four rail lines, though only two were ultimately constructed. This unused structural capacity provides sufficient width to relocate the southern rail line farther south**,** enabling construction of a full-width trail without the need for major new structural elements. As a result, only minimal additional bridge work is required. Within the proposed trail zone, ballast, rail ties, and tracks would be removed to allow installation of the full-depth trail section, and protective fencing would be added on both sides to separate trail users from active rail operations and provide fall protection

Implementing this configuration involves removing the inactive north track and shifting the active south (main) track approximately 5 feet south to create the necessary trail width. A sidetrack located south of the main line—from the Rookwood Bridge west to the entrance of International Friendship Park—would also be shifted to match the new alignment. To the south, the relocated tracks would tie back into the existing alignment where the current tracks curve toward the shifted position, while to the north, the main line would reconnect through a realigned horizontal curve. This approach leverages existing bridge capacity, minimizes structural modifications, and provides a cost-efficient path to achieving a full-width trail.

If coordination with the railroad for Alternative D3 is unsuccessful, Alternative D1 (Constrained Condition) serves as a viable fallback option. This alternative provides a constrained 8-foot-wide trail where right-of-way and structural limitations restrict available space.

To maintain pedestrian mobility within this constrained segment**,** pedestrians could continue using the existing sidewalk along Riverside Drive**,** allowing the narrower trail to function primarily as a shared-use facility for bicyclists and higher-speed users. Although the reduced width does not meet the 11-foot minimum standard, it remains safe, functional, and context-appropriate within the corridor's physical limitations. As a result, **Alternative D1** offers a feasible, lower-cost option where achieving the full trail width is not possible due to structural constraints or unsuccessful railroad coordination.

B. Segment 2 – Lancaster Tunnel to Torrence Road Station

Lancaster Tunnel Pedestrian Access Point

Alternative E2 (abandoning the tunnel) is identified as the preferred alternative for addressing long-term safety and structural concerns associated with the existing tunnel. Maintaining public access to the tunnel would require significant structural rehabilitation and ongoing monitoring, and the cost of keeping the tunnel open is prohibitive**.** Under this alternative, pedestrian use of the tunnel would be permanently discontinued, and public access would be eliminated by sealing the structure.

By removing the tunnel from service and stabilizing it through abandonment, Alternative E2 provides a long-term, low-risk solution that addresses structural deterioration while ensuring the safety of both trail users and rail operations.

Hazen St. Pedestrian Access Point

The **No-Build Alternative** is identified as the preferred alternative for the Hazen Street location. Although Hazen Street could physically serve as a potential access point to the proposed shared-use path corridor, the surrounding area along Riverside Drive experiences low pedestrian activity**,** reducing the need for an additional connection at this location. Hazen Street dead-ends before the rail corridor, and no formal railroad crossing exists. Furthermore, all proposed build alternatives at Hazen Street would result in a non-ADA-compliant connection due to steep grades and permanent right-of-way.

Establishing a new crossing would also require extensive coordination with the railroad, and the associated regulatory requirements and construction costs make implementation impractical. Importantly, a safe and functional pedestrian access point exists nearby at Kemper Lane**,** providing a suitable connection to the shared-use path corridor without the need for new infrastructure or railroad coordination.

For these reasons, the No-Build Alternative is preferred, as it avoids substantial cost and complexity, prevents the creation of a non-ADA-compliant facility, and relies on the preferred Kemper Lane pedestrian access point to meet pedestrian access needs in this area.

Collins Ave. Bridge

There are 4 bridge options discussed in the study. The recommendation is leaning towards Option 4, which utilizes the existing superstructure and adds a concrete deck for a 12-foot trail. This has the lowest costs of all the options, but does not raise the bridge clearance. The City of Cincinnati is reviewing these options and will make their recommendation in July.

Gladstone Avenue

Gladstone Avenue is identified as the preferred alternative for providing local access to the shared-use path corridor. The street is planned to function as a low-speed shared street, where vehicles, pedestrians, and cyclists operate within the same roadway environment. **See Figure 57.** The goal is this shared roadway will give priority to the trail users. Details for this prioritization will be developed in Stage 1 design.



Figure 57 – Preferred Gladstone Avenue

Columbia Parkway Pedestrian Access Point

There are currently no plans by any local agencies to connect communities north of Columbia Parkway to the Columbia Parkway intersection. Due to this, the mitigation needed for the tree removal and the $3.6M costs to make the connection from Columbia Parkway to the Oasis River trail, the recommended alternative is the no-build. However, should connections north of Columbia Parkway take place, **Alternative G5** could be considered as a future project as G5 provides the most direct, intuitive, and fully accessible route between the hillside neighborhoods and the station area, all while remaining outside the Torrence Road right-of-way.

C. Segment 3 – Torrence Road Station to End Project

Torrence Station Pedestrian Access Point

Alternative G2 is identified as the preferred alternative to connect Riverside Drive to the Oasis River Trail. This 8'-9' sidewalk connection follows the existing Torrence Road alignment. The major benefits of this alternative compared to the others evaluated is there are no property impact, maintain the existing surrounding properties for future developments, and has no retaining walls or boardwalk, significantly less costly than the other alternatives evaluated. **See Figure 58.**

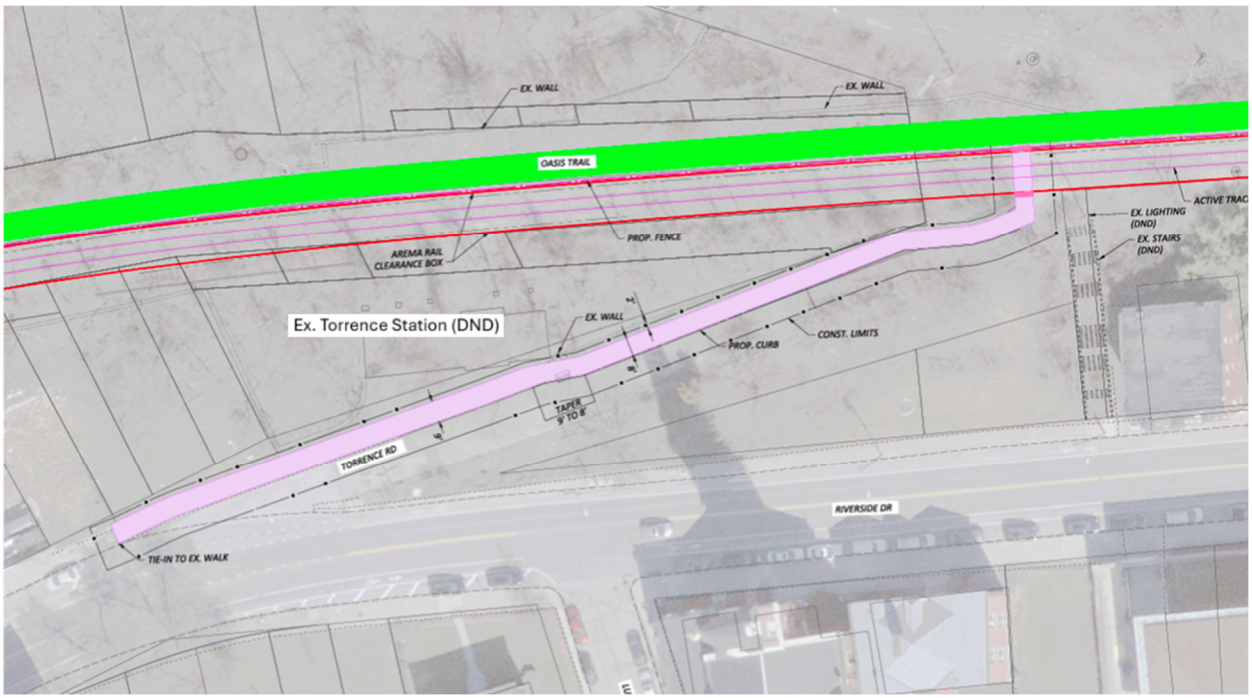


Figure 58 – Preferred Alternative G2

Hoff Ave Pedestrian Access Point

The recommended alternative at this location is the no build alternative as it doesn't provide ADA access and there is no existing railroad crossing.

St. Andrews Pedestrian Access Point

The preferred alternative at this location is **Alternative H2** if ADA parking can be accommodated. This will provide ADA access from Riverside Drive to the Oasis River Trail without any impacts to adjacent private property. During the Stage 1 design phase, options to provide ADA parking will be evaluated. **See Figure 59**.

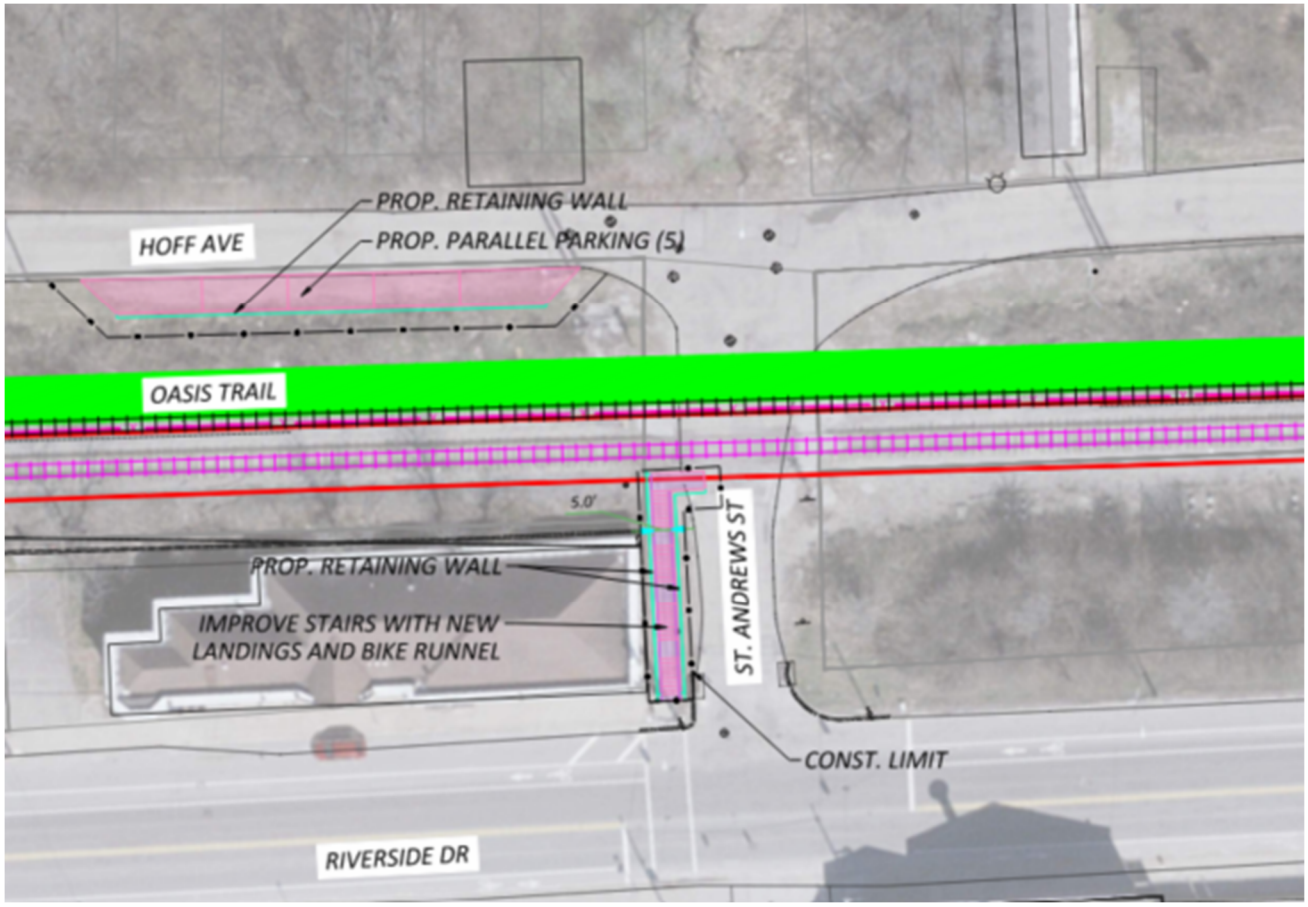


Figure 59 – Preferred Alternative H2

Walworth Tunnel Pedestrian Access Point

Upgrade the existing tunnel stairs with improved tread geometry, new handrails, and a bicycle runnel to better support rolling access. A connection from the top of the stairs to the Oasis Trail will be provided. Additional space could be provided for bicycle amenities such as repair station. **See Figure 60**.

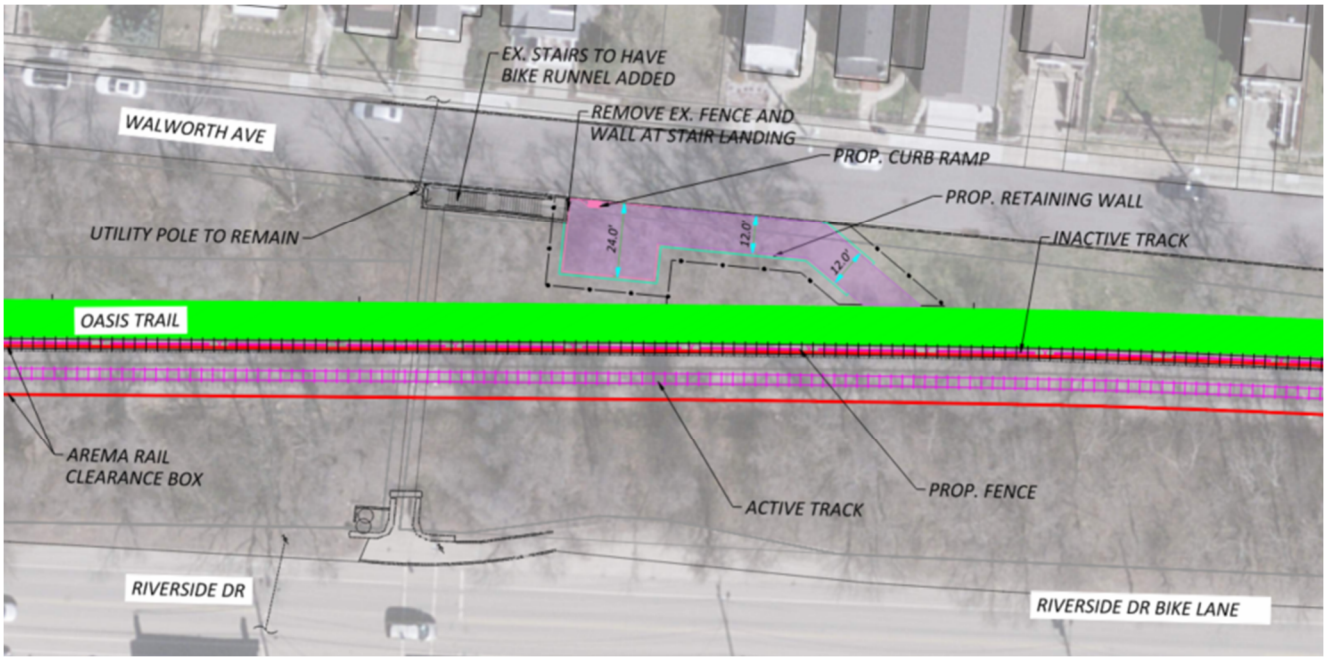


Figure 40 – Preferred Walworth Tunnel Pedestrian Access Point

Delta Ave. Bridge and Preceding Retaining Wall

Alternative J3 is identified as the preferred alternative for providing a 12-foot trail across the Delta Avenue Bridge and preceding retaining wall. Similar to the Rookwood Bridge, this bridge was originally designed to support four rail lines and only two were built. The unused structural capacity allows for the existing rail line to be shifted to the south, allowing for a 12-foot trail to be provided prior to the bridge along the existing retaining wall and across the bridge. See **Figure 61**.

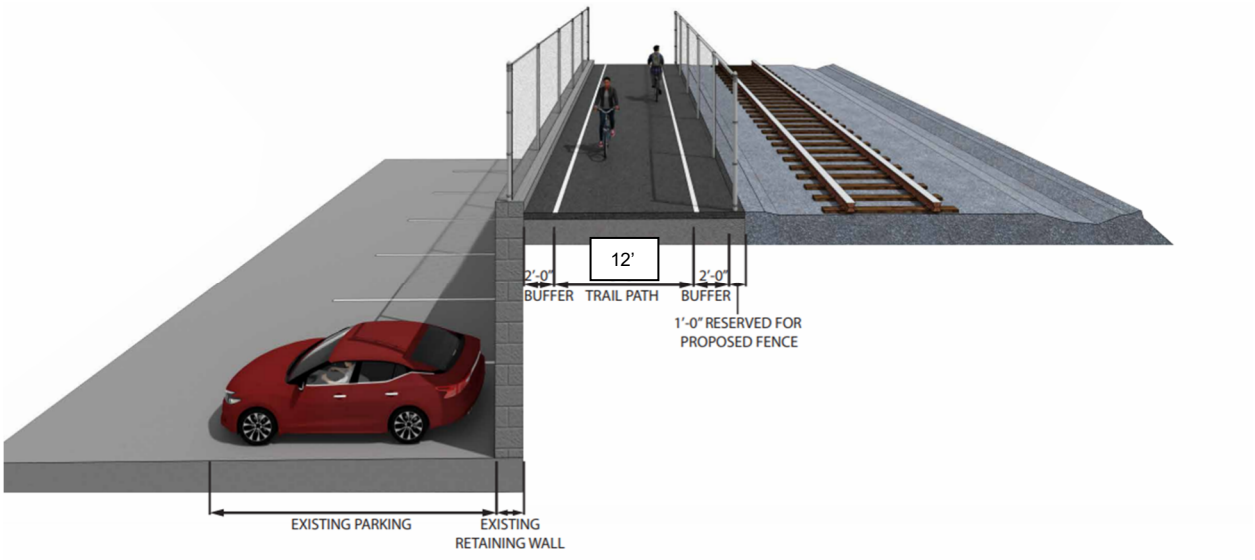


Figure 61 – Preferred Alternative J3

This shift in the tracks involves removing the inactive north track and shifting the active south (main) track approximately 8-feet to create the 12-foot trail width. This alternative has significantly less costs ($400,000 compared to Alternative J2 at $1.4M), no property impacts and no parking lot impacts.

If coordination with the railroad is unsuccessful, Alternative J1 (Constrained Condition) is a fallback option. It provides a constrained 8-foot wide tail for 590-feet, has no property impacts and costs are approximately $250,000. See **Figure 62**.

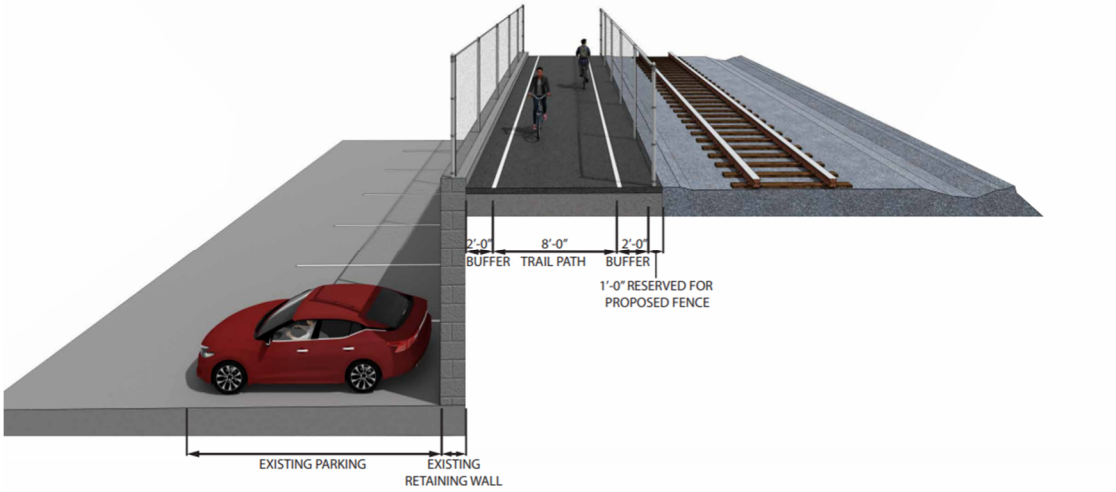


Figure 62 – Preferred Alternative J1

Delta Ave. and Tusculum Ave. Pedestrian Access Points

There are feasible options for each of these locations to provide access from the surrounding communitas to the Oasis River Trail. The Delta Ave. can provide ADA access but require switchbacks and retaining walls. See **Figures 63**.

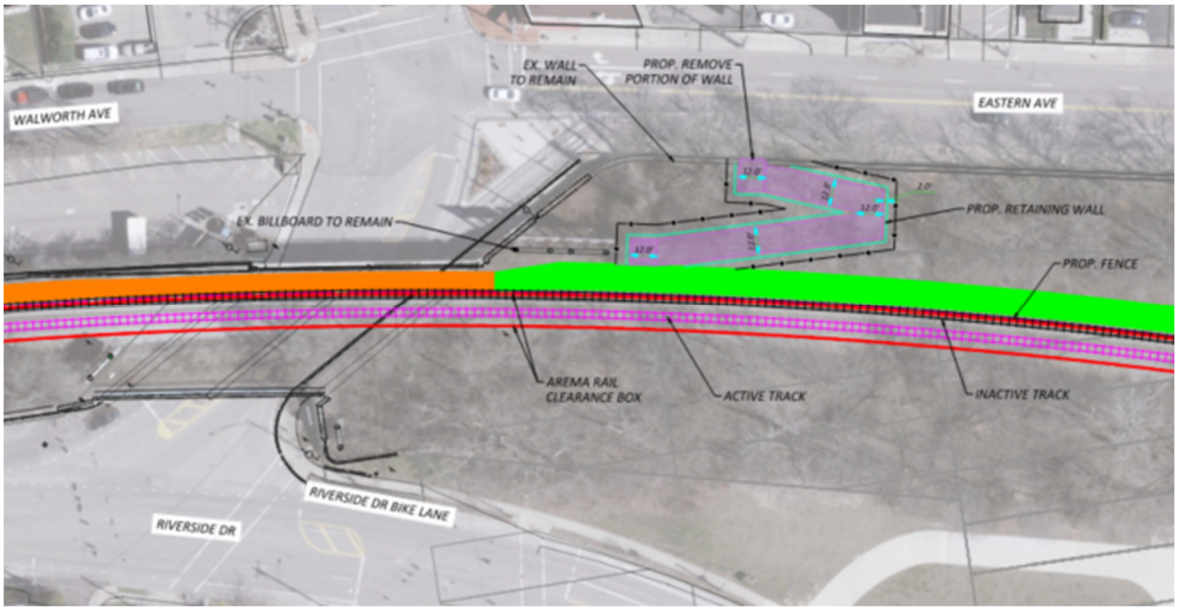


Figure 63 – Preferred Delta Ave. Pedestrian Access Point

There is also an opportunity to provide a connection at the existing Tusculum Ave./ Eastern Ave. intersection to the Oasis River Trail. The access is low cost, but does impact one property owner. See **Figure 64**.

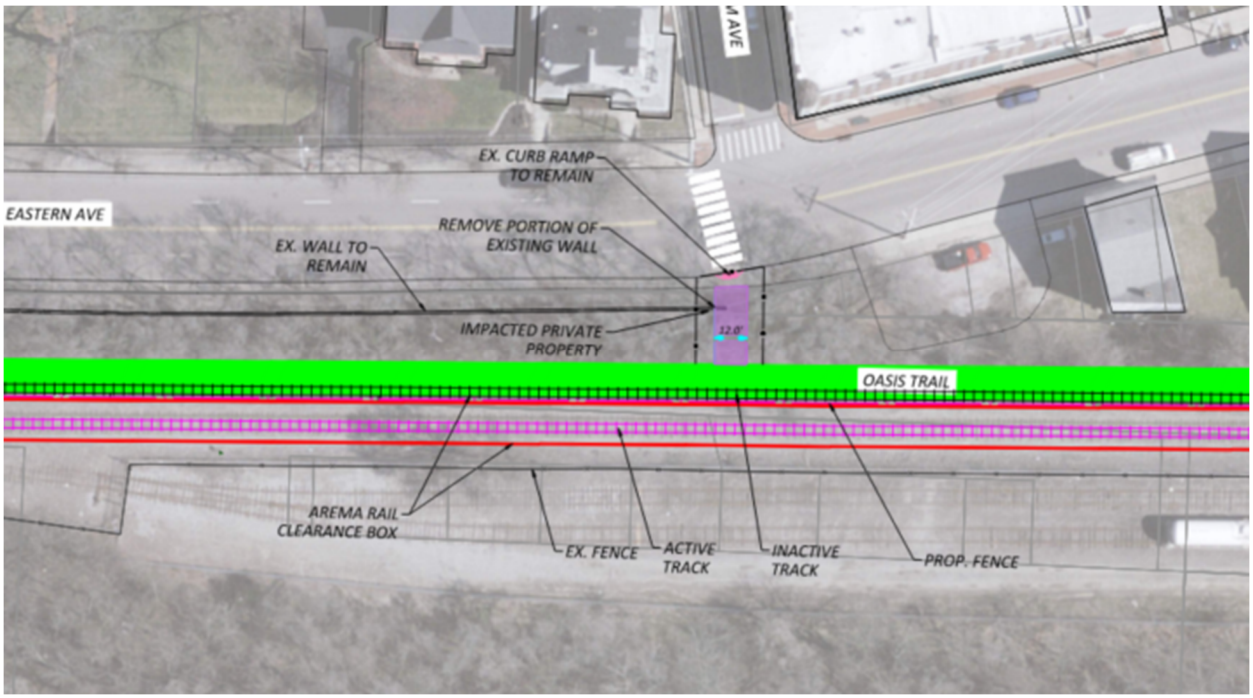


Figure 64 – Preferred Tusculum Pedestrian Access Point

Donham St. Pedestrian Access Point

Along Donham St., behind Daylily Deli, there is an opportunity to connect to the Oasis Trail with a 11-foot path and under a 5% grade. This is a low-cost on a low-volume roadway that provides connectivity to the surrounding communities. **See Figure 65.**

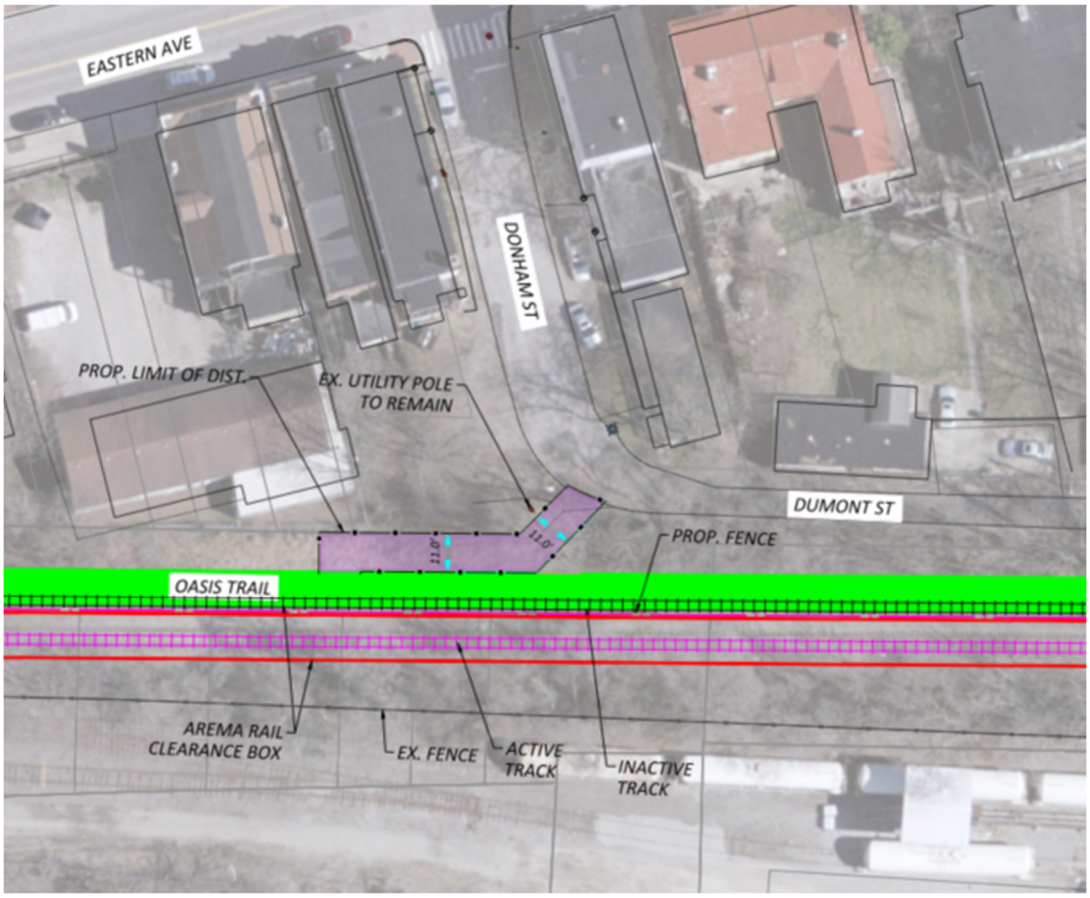


Figure 65 – Preferred Donham St. Pedestrian Access Point

Carrel St. Eastern Terminus Connection

Alternative K1 is the preferred alternative to connect the proposed Oasis River Trail to the existing trail at Carrel Street. This alternative would provide a 12-foot SUP along the east side of Carrel St., following the existing road grade, and has no impacts to Carrel St.

One property may be impacted on the east side of Carrel Street. However, working with the City of Cincinnati, options during the design development will be evaluated to eliminate impacts to the adjacent private property. See **Figure 66**.

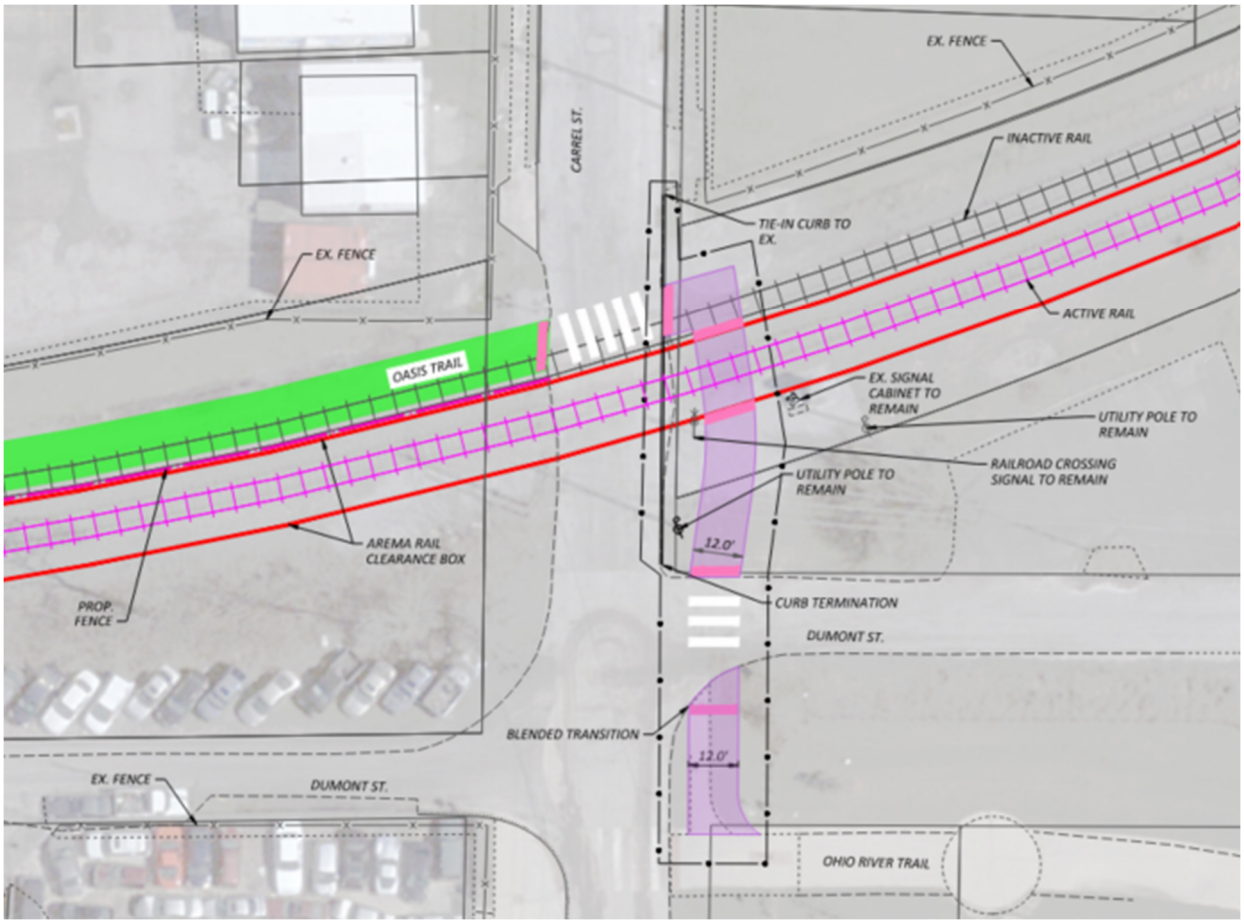
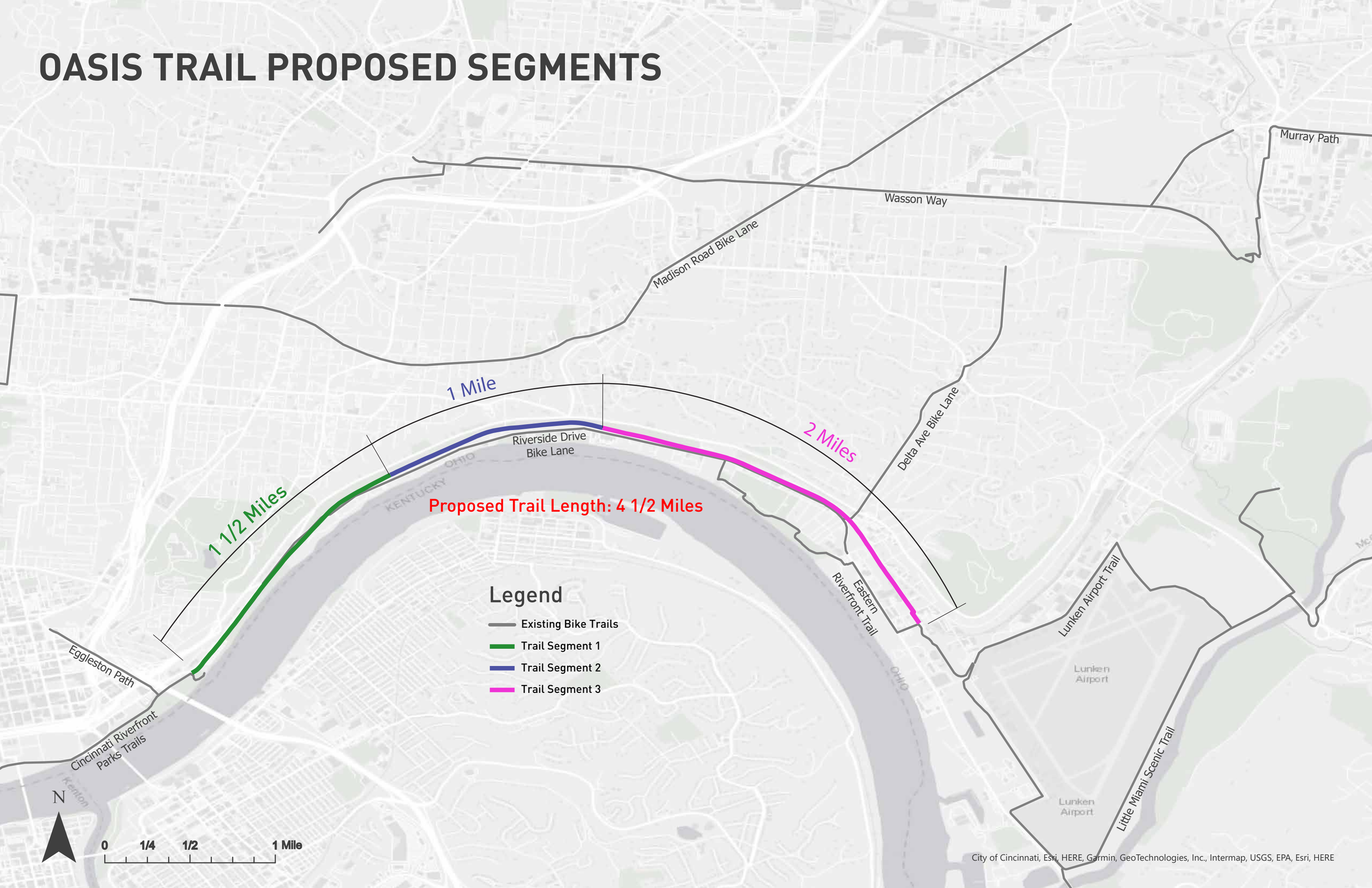


Figure 66 – Preferred Alternative K1

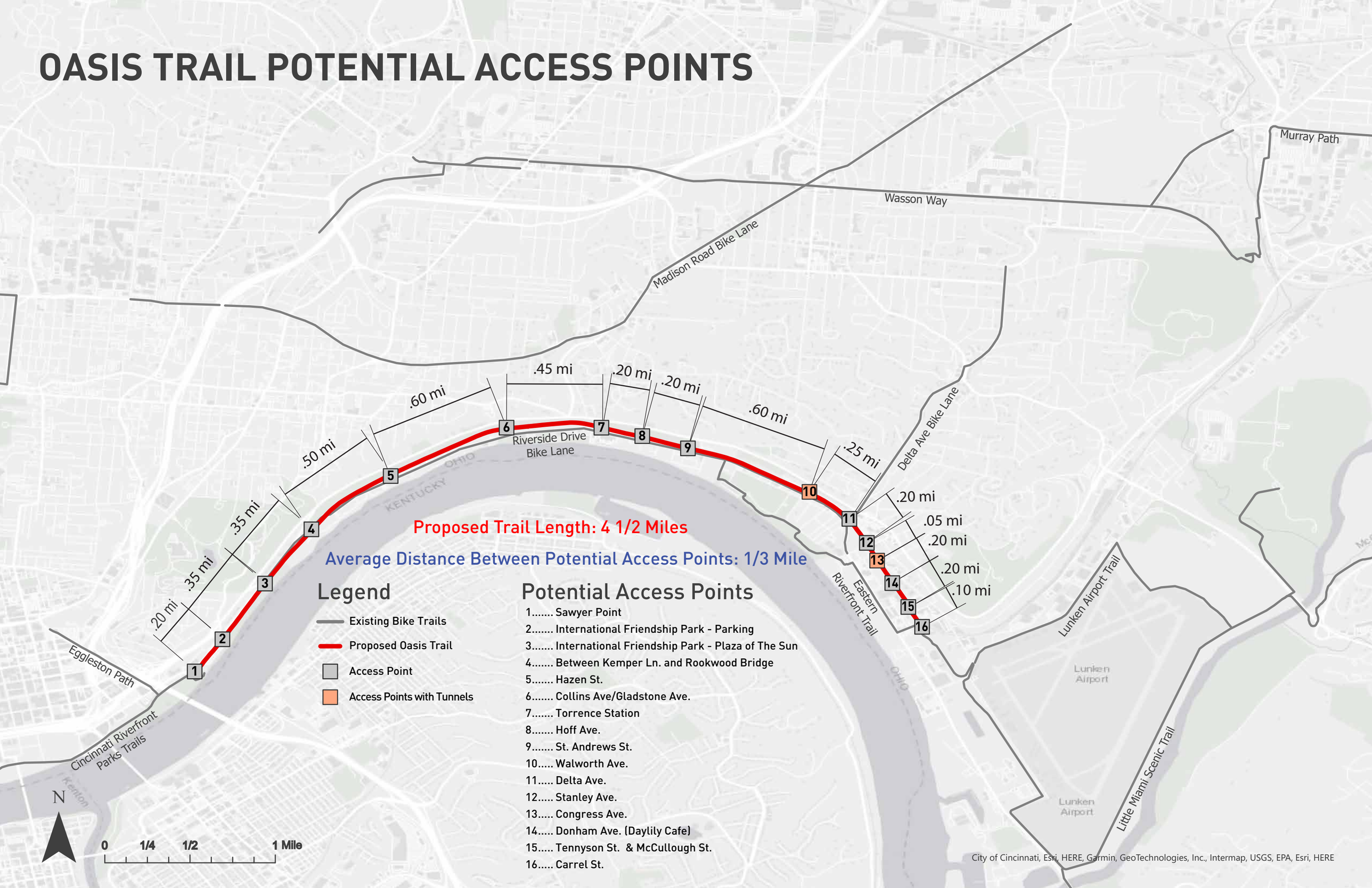
Attachment A

OASIS Trail Proposed Access Point Maps

OASIS TRAIL PROPOSED SEGMENTS



OASIS TRAIL POTENTIAL ACCESS POINTS



OASIS TRAIL POTENTIAL ACCESS POINTS

Trail Access Point Accessibility from adjacent Right-Of-Way

Potential Access Points

1.....Sawyer Point
2.....International Friendship Park - Parking
3.....International Friendship Park - Plaza of The Sun
4.....Between Kemper Ln. and Rookwood Bridge
5a....Lancaster Street Tunnel
5b....Hazen St. Switchback
5c....Hazen St. Steps
6.....Collins Ave/Gladstone Ave.
7a....Torrence Station from Columbia Prky.
7b....Torrence Station from Riverside Dr.
8a....Hoff Ave.
8b....Hoff Steps
9a....St. Andrews St. Switchback
9b....St. Andrews St. Steps
10a..Walworth Ave.
10b..Walworth Tunnel
11....Delta Ave.
12....Stanley Ave.
13....Congress Ave.
14....Donham Ave. (Daylily Cafe)
15....Tennyson St. & McCullough St.
16....Carrel St.

Wasson Way
Madison Road Bike Lane
Delta Ave Bike Lane
Riverside Drive Bike Lane
Eggleston Path
Cincinnati Riverfront Parks Trails
Eastern Riverfront Trail
Lunken Airport Trail
Little Miami Scenic Trail
Lunken Airport
Sawyer Point Park
International Friendship Park
Leblond Recreation Center
Schmidt Boat Launch
Rakestraw Memorial Field
Lunken Airport
KENTUCKY
OHIO

Legend

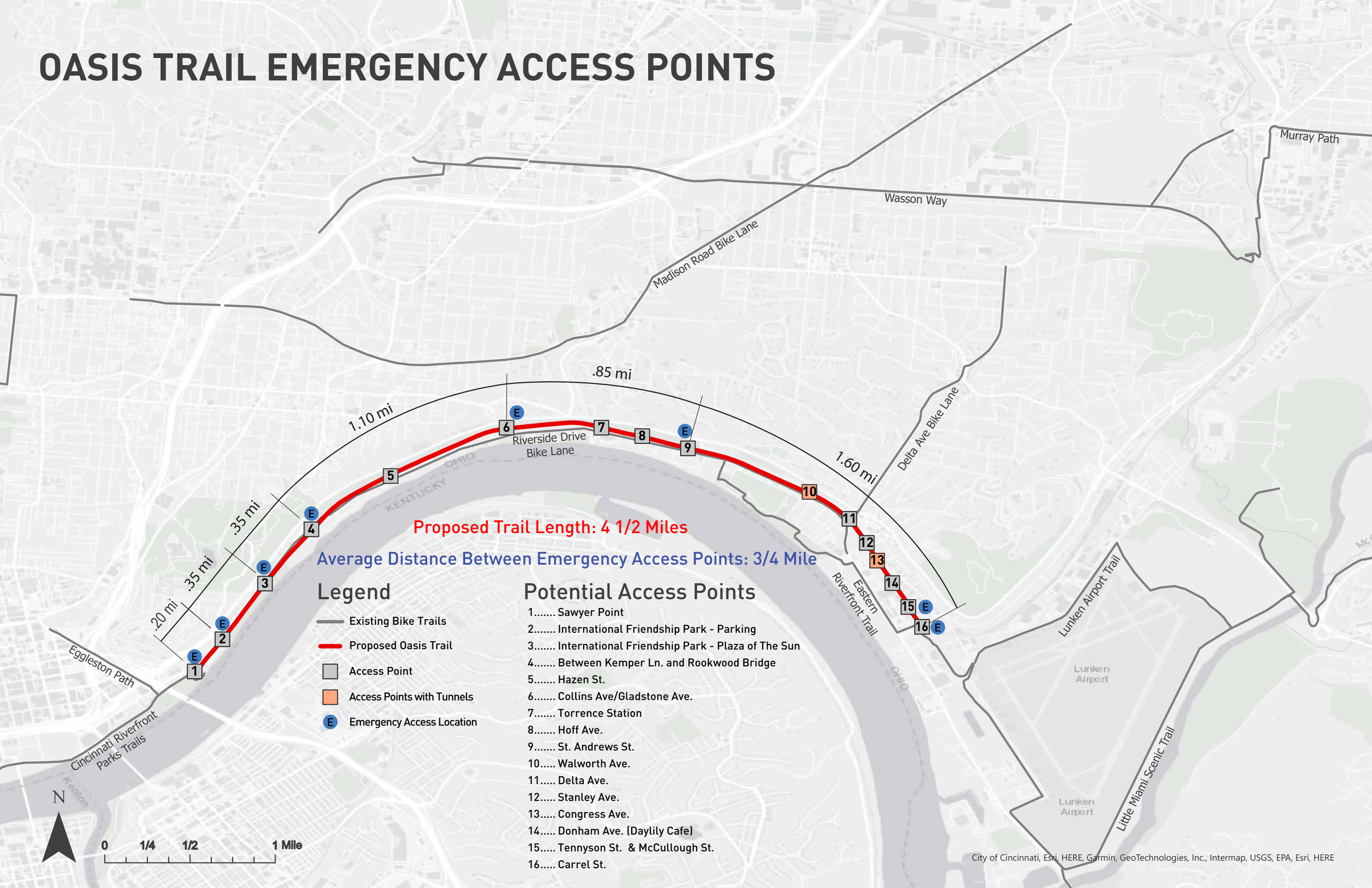
- Existing Bike Trails
- Proposed Oasis Trail
- ADA Accessible Trail Access
- Not ADA Accessible
- Existing Public Parking Lot
- Proposed Street Parking
- Public Restroom

N

0 1/4 1/2 1 Mile

City of Cincinnati, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, USGS, EPA, Esri, HERE

OASIS TRAIL EMERGENCY ACCESS POINTS



OASIS TRAIL POTENTIAL ACCESS POINTS

Neighborhood Connections

Norwood
Oakley
Avondale
Evanston
Corryville
Hyde Park
Mount Lookout
Mt. Auburn
Wasson Way
Murray Path
Madison Road Bike Lane
Delta Ave Bike Lane
Riverside Drive
Bike Lane
O'Bryonville
East Walnut Hills
Walnut Hills
Hyde Park/
Mount Lookout
Linwood
Mariemont
Mt. Adams
Eggleston Path
Downtown
Cincinnati Riverfront
Parks Trails
East End Business District
Columbia Tusculum
Business District
Eastern
Riverfront Trail
Lunken Airport Trail
Little Miami Scenic Trail
Lunken
Airport
KENTUCKY
OHIO
Kenton
Ohio

Legend

- Existing Bike Trail Connections
- Proposed Oasis Trail
- Uphill Connections to adjacent Neighborhoods
- Access Point
- Access Points with Tunnels
- East End Neighborhood
- Columbia Tusculum Neighborhood
- Neighborhood Business Districts

Potential Access Points

1..... Sawyer Point
2..... International Friendship Park - Parking
3..... International Friendship Park - Plaza of The Sun
4..... Between Kemper Ln. and Rookwood Bridge
5..... Hazen St.
6..... Collins Ave/Gladstone Ave.
7..... Torrence Station
8..... Hoff Ave.
9..... St. Andrews St.
10..... Walworth Ave.
11..... Delta Ave.
12..... Stanley Ave.
13..... Congress Ave.
14..... Donham Ave. (Daylily Cafe)
15..... Tennyson St. & McCullough St.
16..... Carrel St.

N

0 1/4 1/2 1 Mile

City of Cincinnati, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, USGS, EPA, Esri, HERE

Attachment B

Existing Conditions

LEGEND

SEGMENT 1

SEGMENT 2

SEGMENT 3

BEGIN SEGMENT 1
WESTERN TERMINUS

BOATHOUSE ENTRANCE

PARK ENTRANCE

ROOKWOOD BRIDGE

COLUMBIA PKWY

RIVER SIDE DR

A

B

C

D

E

F

THE BOATHOUSE

OHIO RIVER

END SEGMENT 1
BEGIN SEGMENT 2
LANCASTER ST. TUNNEL

END SEGMENT 2
BEGIN SEGMENT 3
TORRENCE RD. STATION

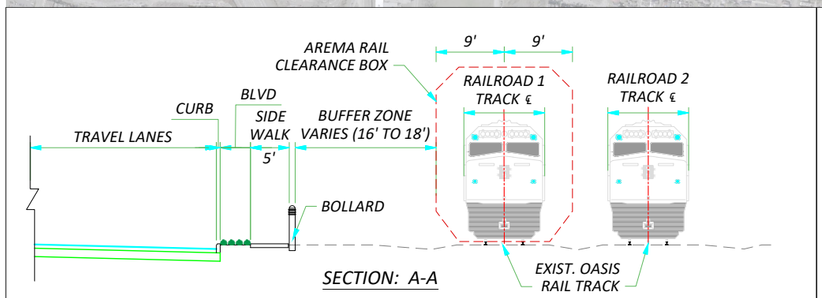
COLLINS AV

GLADSTONE

MATCH LINE
SEE SHEET 2

HORIZONTAL
SCALE IN FEET
0 250 500 1000

OASIS TRAIL



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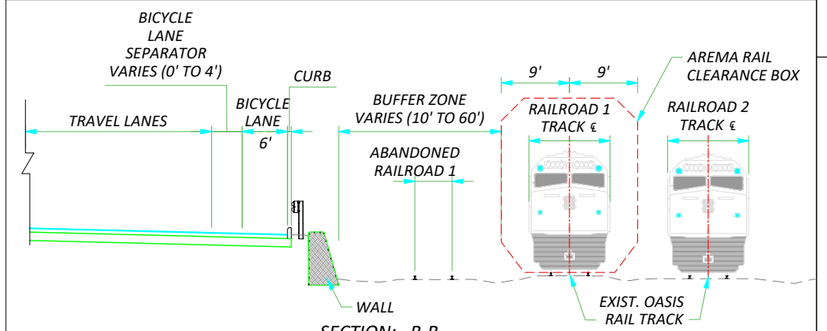

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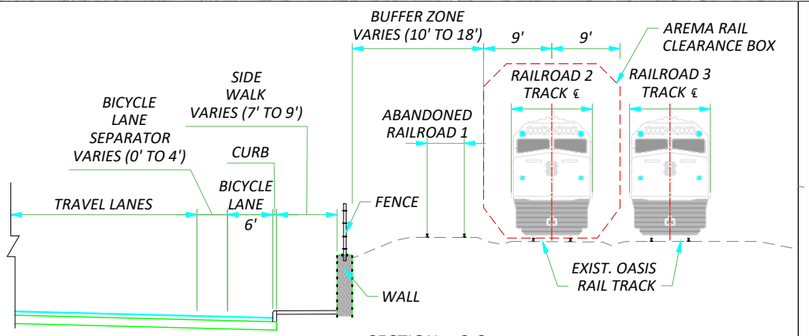

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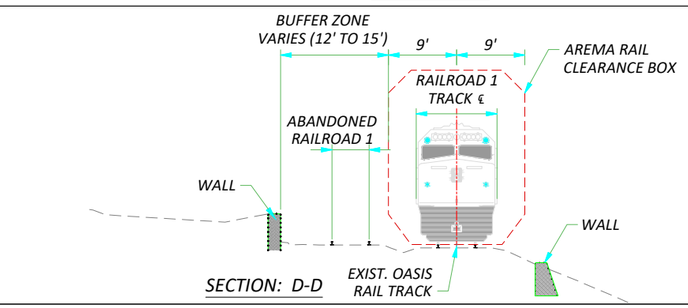

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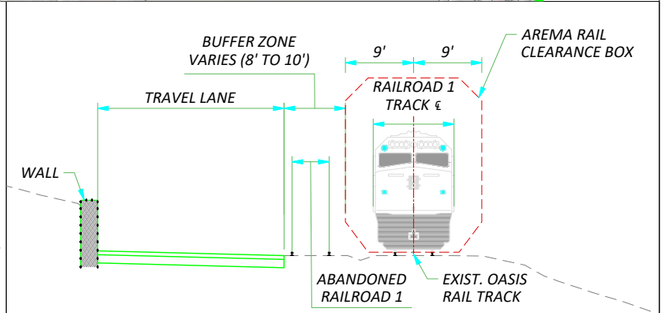

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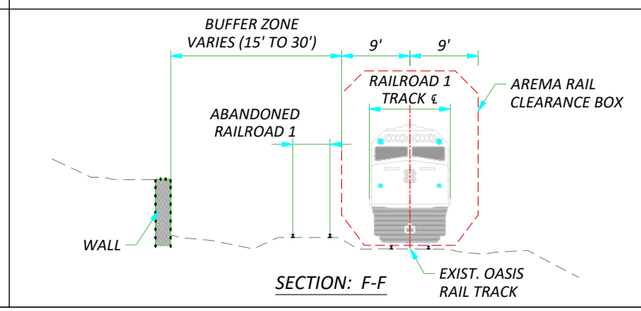

SECTION: F-F

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LEGEND

SEGMENT 1

SEGMENT 2

SEGMENT 3

END SEGMENT 2
BEGIN SEGMENT 3
TORRENCE RD. STATION

HOFF AVE

COLUMBIA PKWY

WALWORTH TUNNEL

DELTA AVE. BRIDGE

DELTA AVE

MATCH LINE
SEE SHEET 1

G

G

H

H

RIVER SIDE DR

ST. ANDREWS ST.

EASTERN AVE. (CONGRESS) TUNNEL

I

I

COLUMBIA PKWY

END SEGMENT 3
CARREL ST. CONNECTION

OHIO RIVER

STANLEY AVE. BRIDGE

TENNYSON ST

J

J

MCCULLOUGH ST

CARREL ST

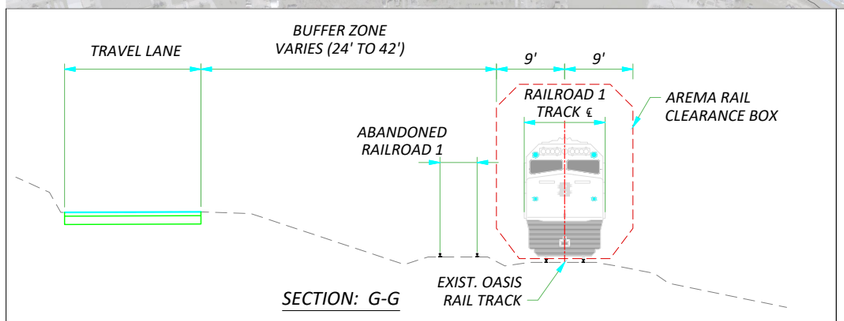
KELLOGG AVE

N

HORIZONTAL
SCALE IN FEET

0 250 500 1000

OASIS TRAIL



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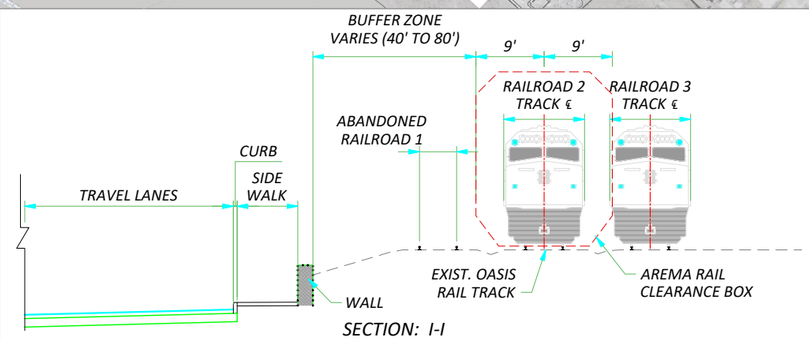

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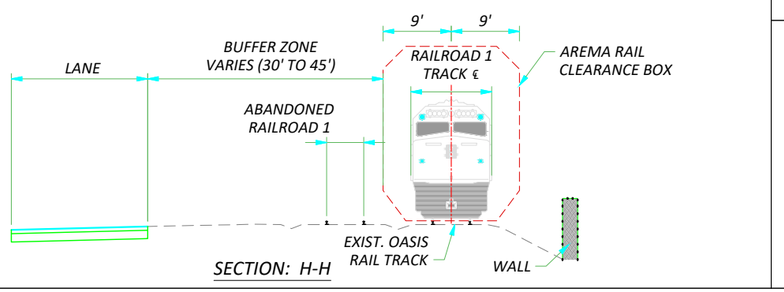

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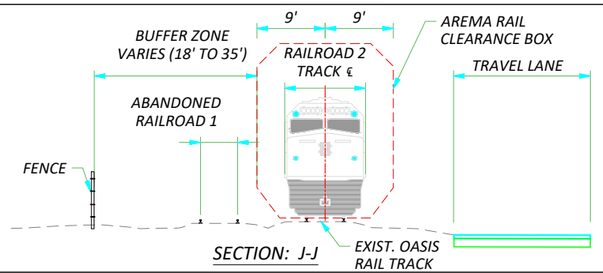

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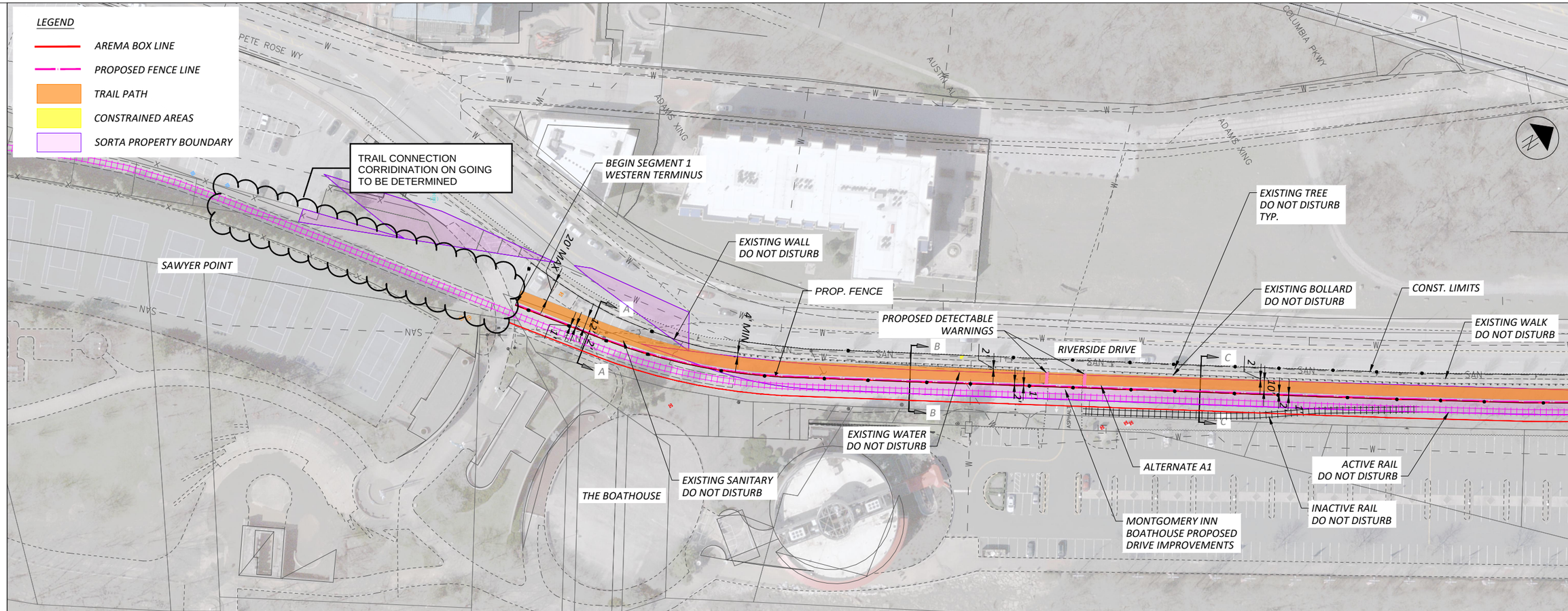
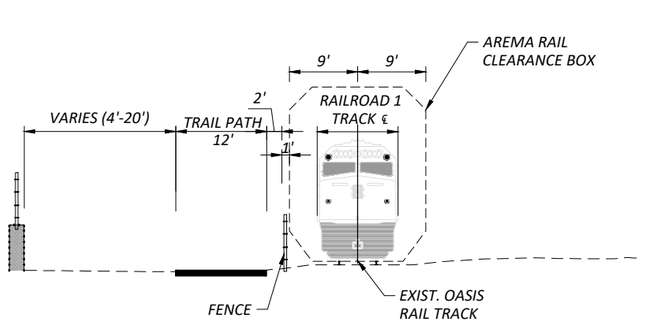
Attachment C

Trail Build Alternatives





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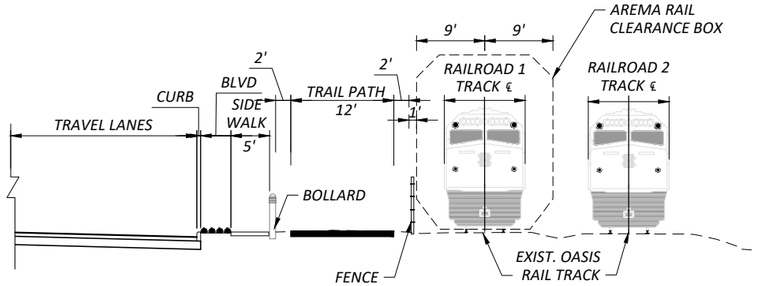

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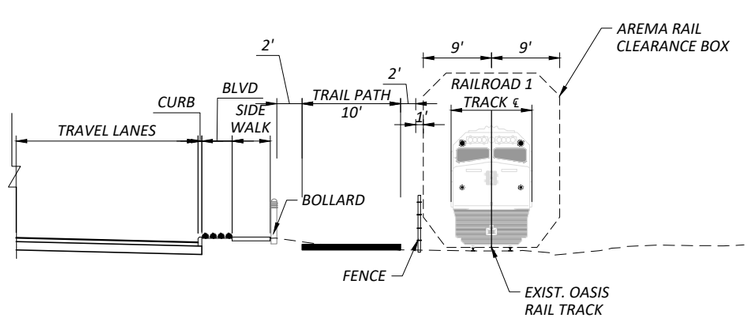

SECTION C-C

ALTERNATIVE A1

HORIZONTAL SCALE IN FEET
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OASIS TRAIL PLAN

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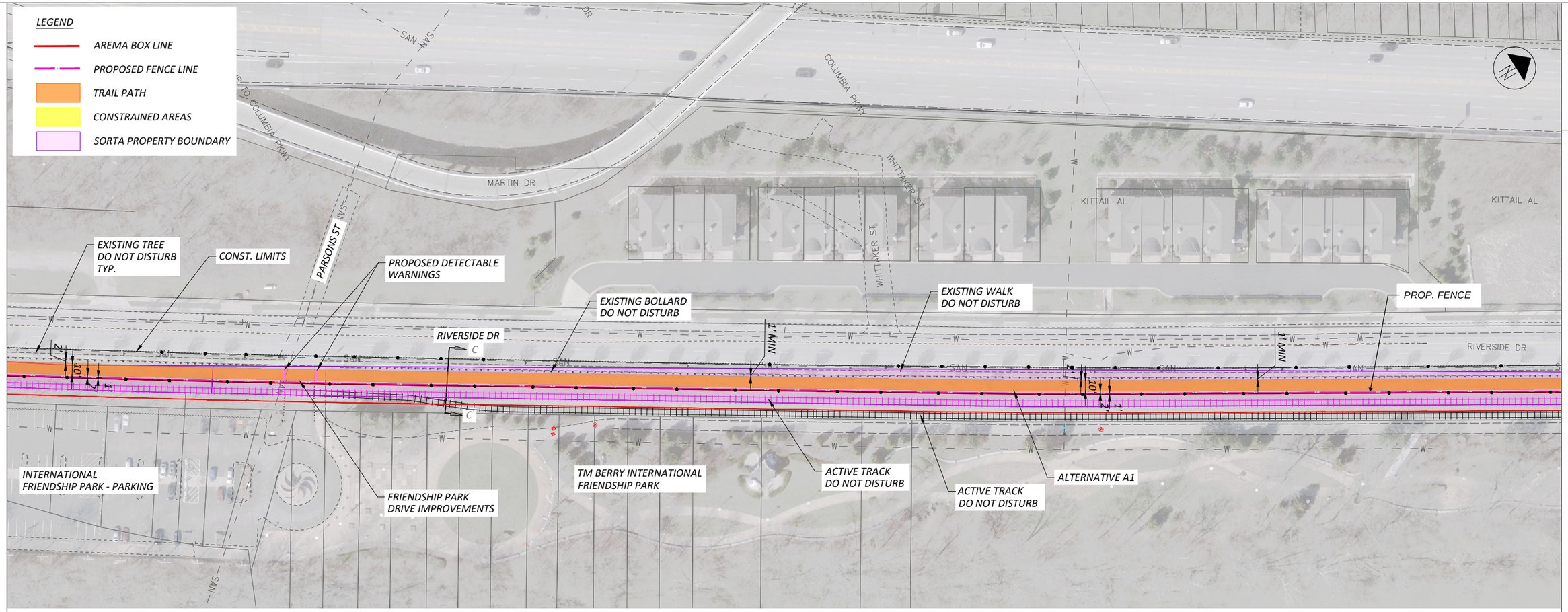

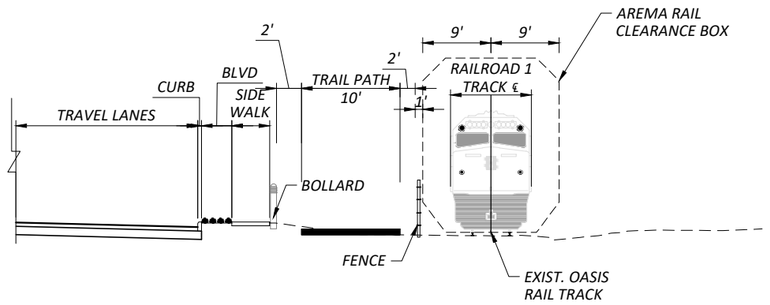

SECTION C-C

ALTERNATIVE A1

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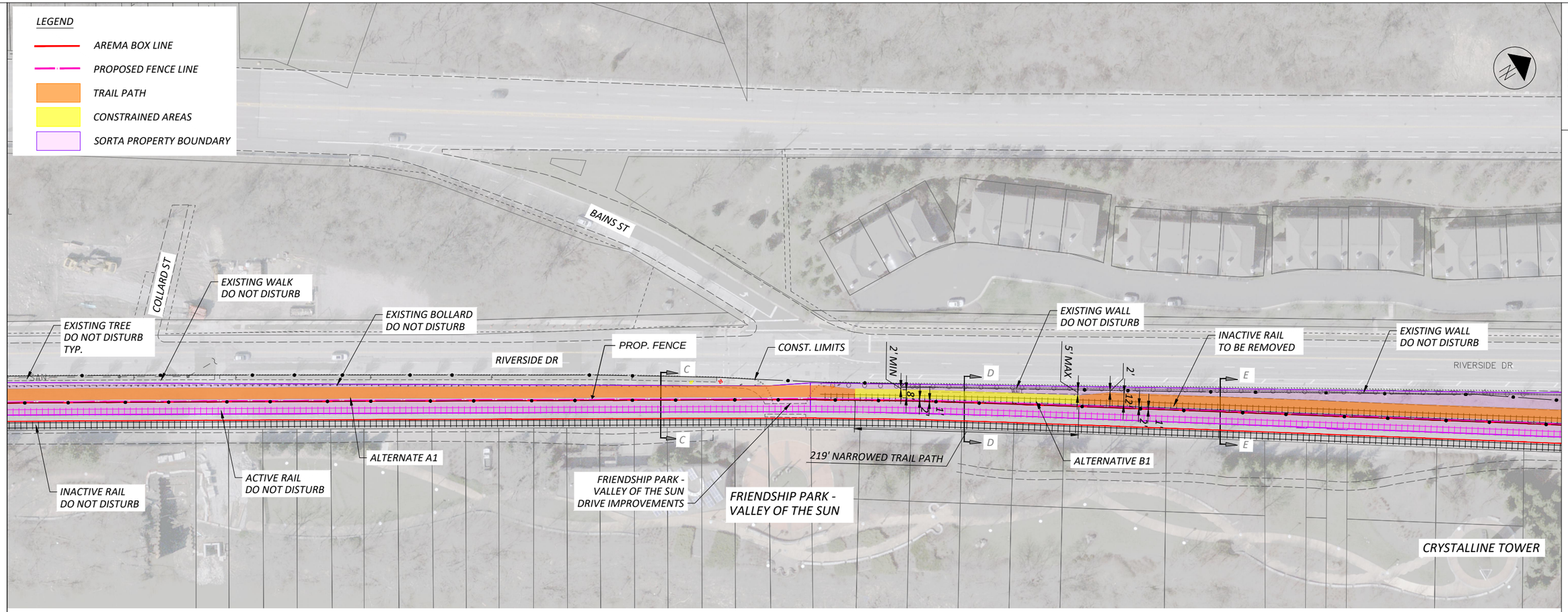

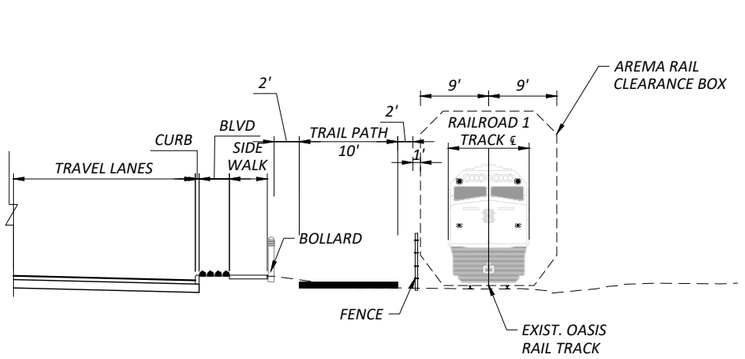

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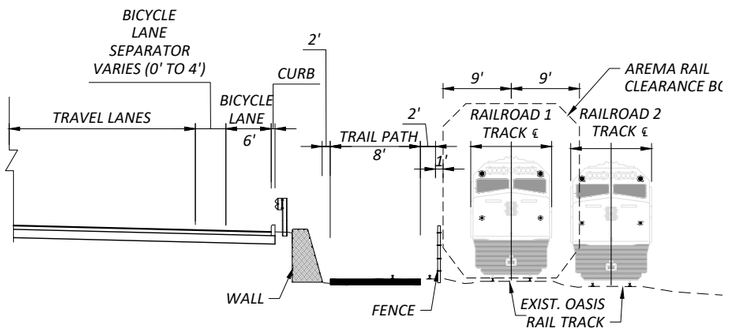

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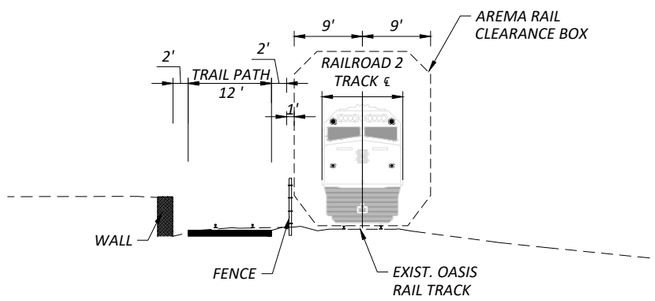

SECTION E-E

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####

LEGEND

- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- SORTA PROPERTY BOUNDARY

COLUMBIA PKWY

KEMPER LN

KEMPER LANE

KEMPER LANE

WEEKS ST

EXISTING WALL DO NOT DISTURB

RIVERSIDE DR

INACTIVE RAIL TO BE REMOVED

PROP. FENCE

POTENTIAL WALL LOCATION

CONST. LIMITS

EXISTING WALL DO NOT DISTURB

KEMPER LN POTENTIAL PEDESTRIAN ACCESS POINT

SEE ATTACHMENT D

EXISTING WALL WITH FENCE DO NOT DISTURB

RIVERSIDE DR

RIVERSIDE DR

CONC. WALL

CONC. WALL

CONC. WALL

F

F

G

G

ACTIVE RAIL DO NOT DISTURB

INACTIVE RAIL DO NOT DISTURB

714' RETAINING WALL

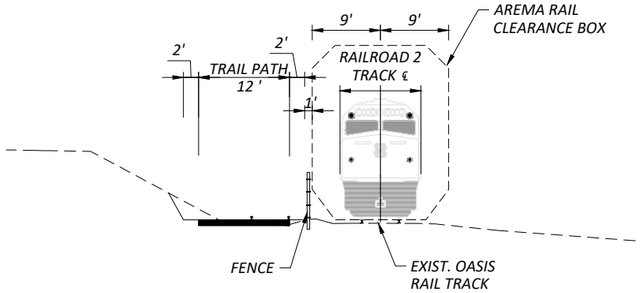
773' NARROWED TRAIL PATH

ALTERNATIVE C1

HORIZONTAL SCALE IN FEET

0 25 50 100

OASIS TRAIL PLAN



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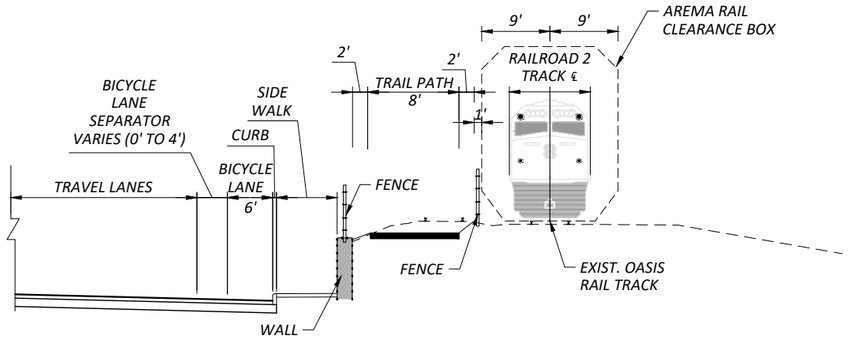

SECTION G-G

ALTERNATIVE C1

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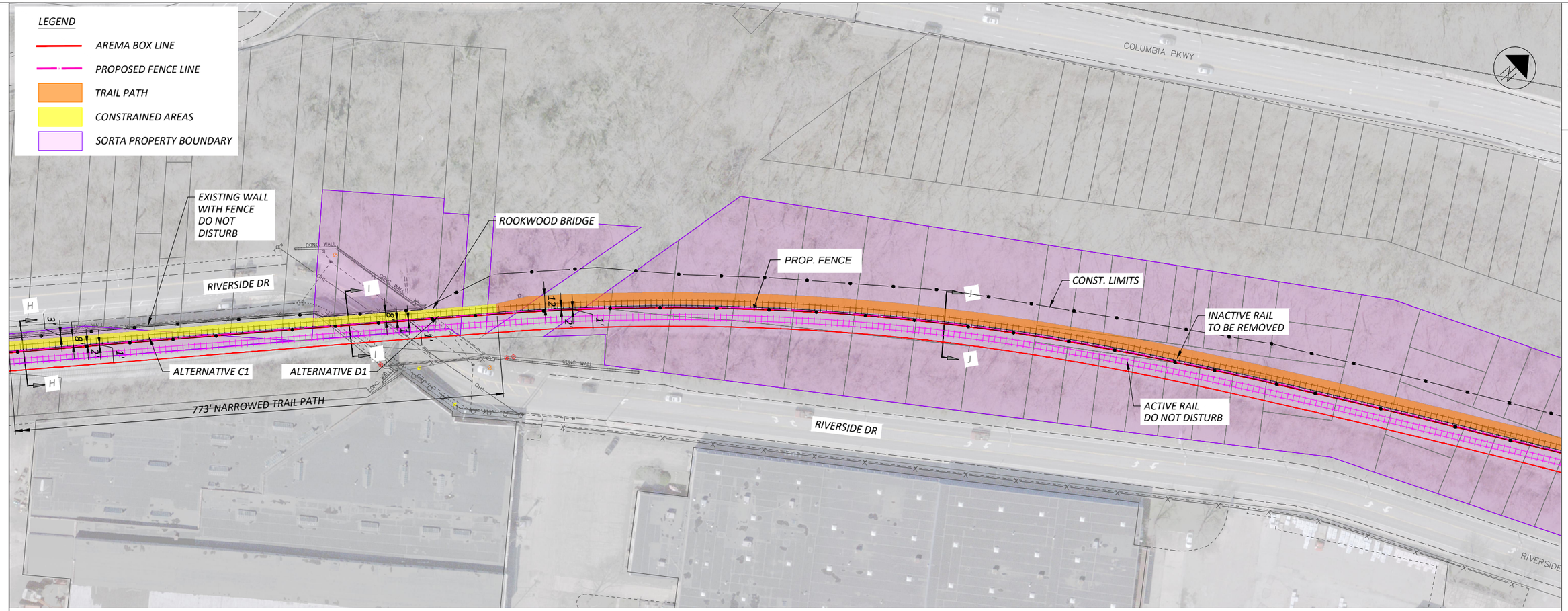
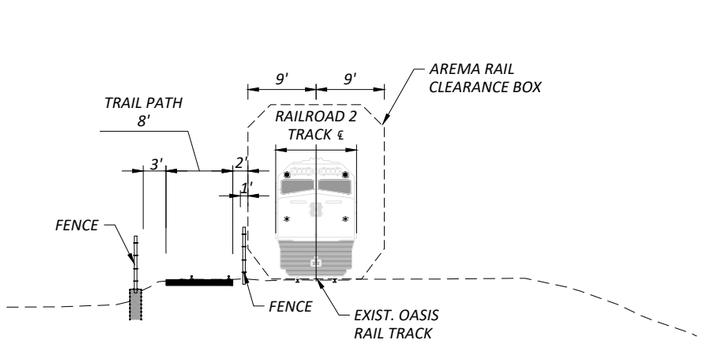
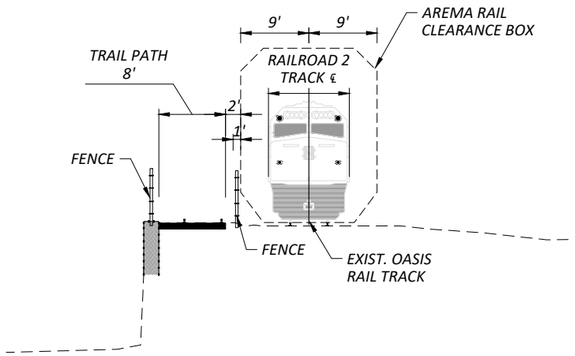




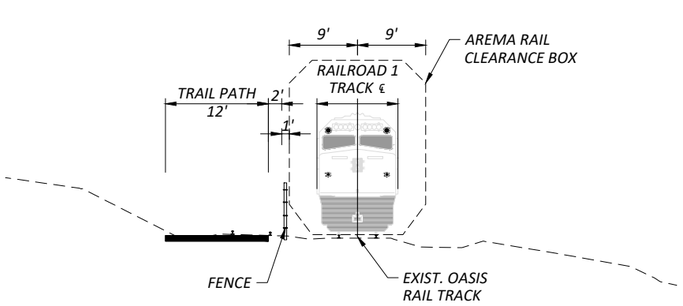
SECTION H-H

ALTERNATIVE C1



SECTION I-I

ALTERNATIVE D1



SECTION J-J

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER: XX

REVIEWER: XX MM-DD-YY

PROJECT ID: 122971

SHEET: 5 TOTAL: 16

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/26/2026 TIME: 5:32:30 PM USER: Mosier, Terrence
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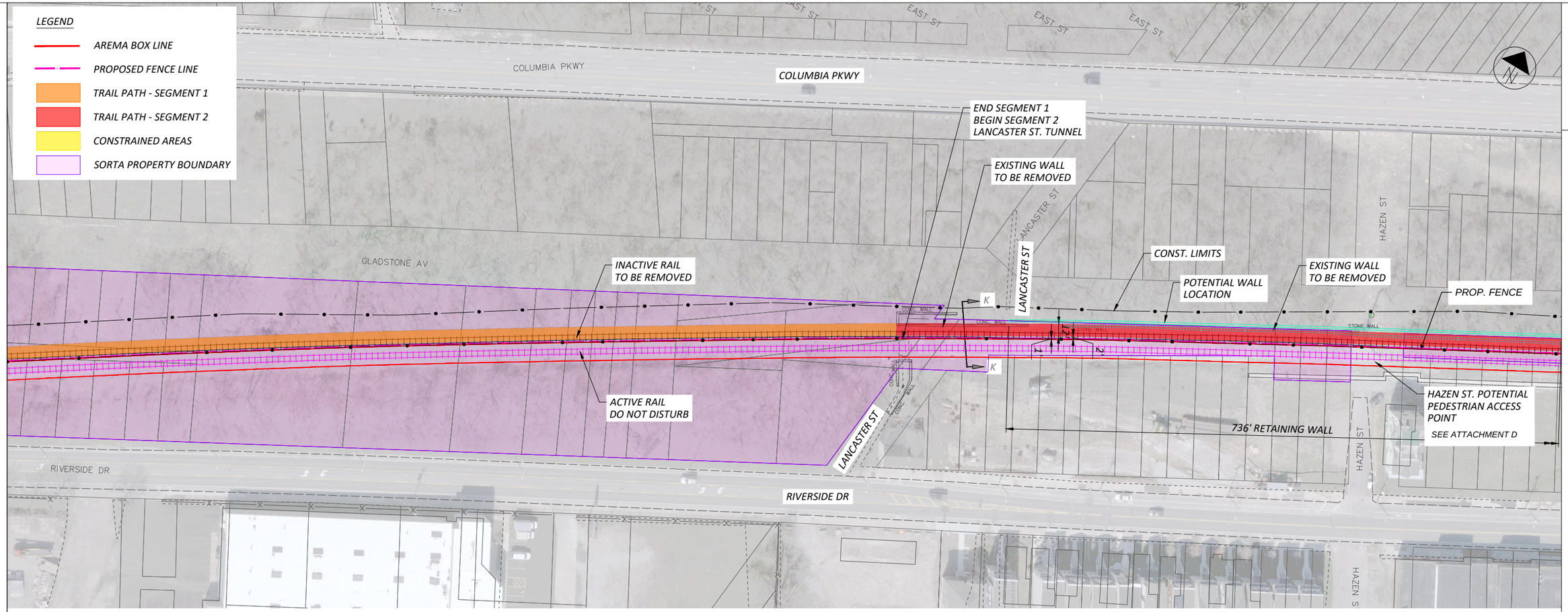

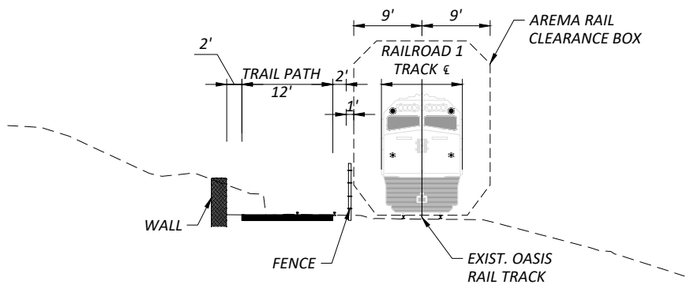

SECTION K-K

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 220
COLUMBUS, OHIO 43235
(614) 985-4500
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 6 TOTAL 16

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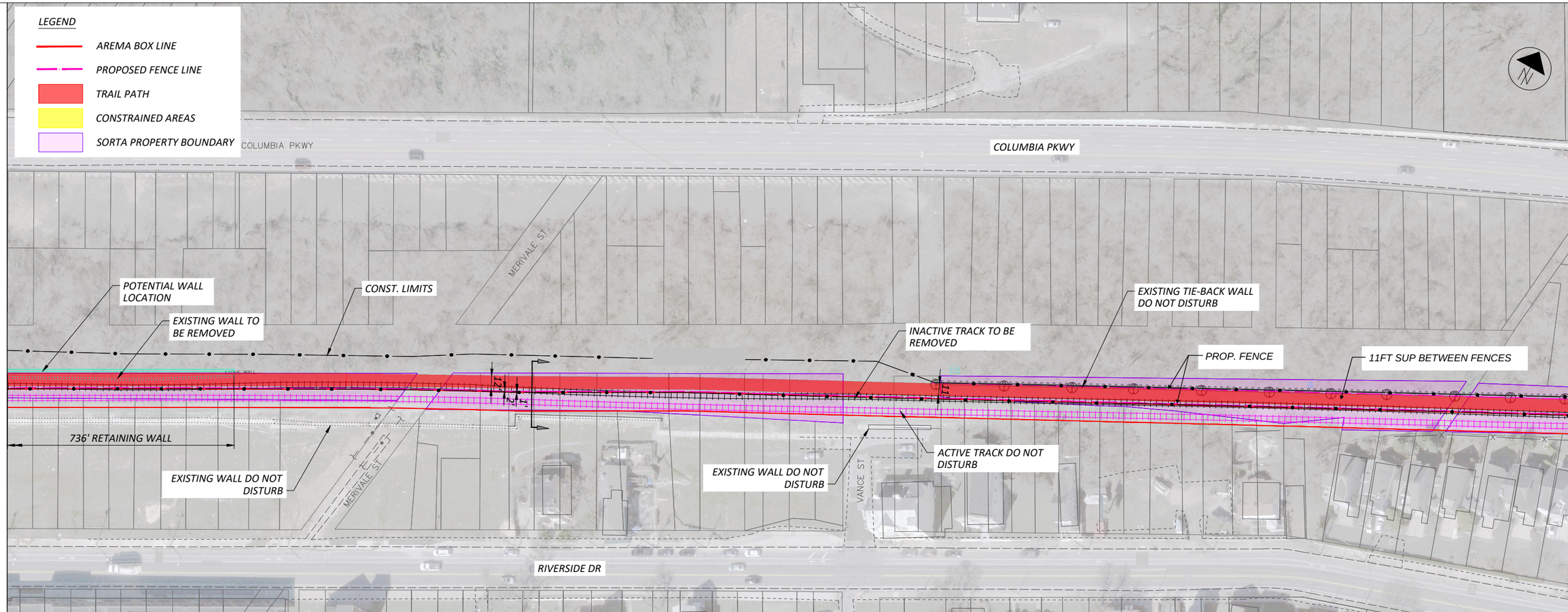

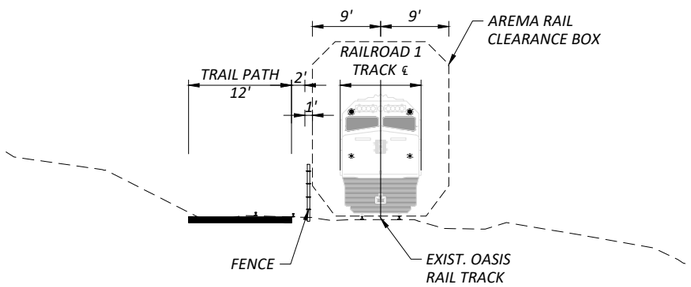

SECTION

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER
XX

REVIEWER
XX 05-29-26

PROJECT ID
122971

SHEET 7 TOTAL 16

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/28/2026 TIME: 9:41:32 AM USER: Mosier, Terrence
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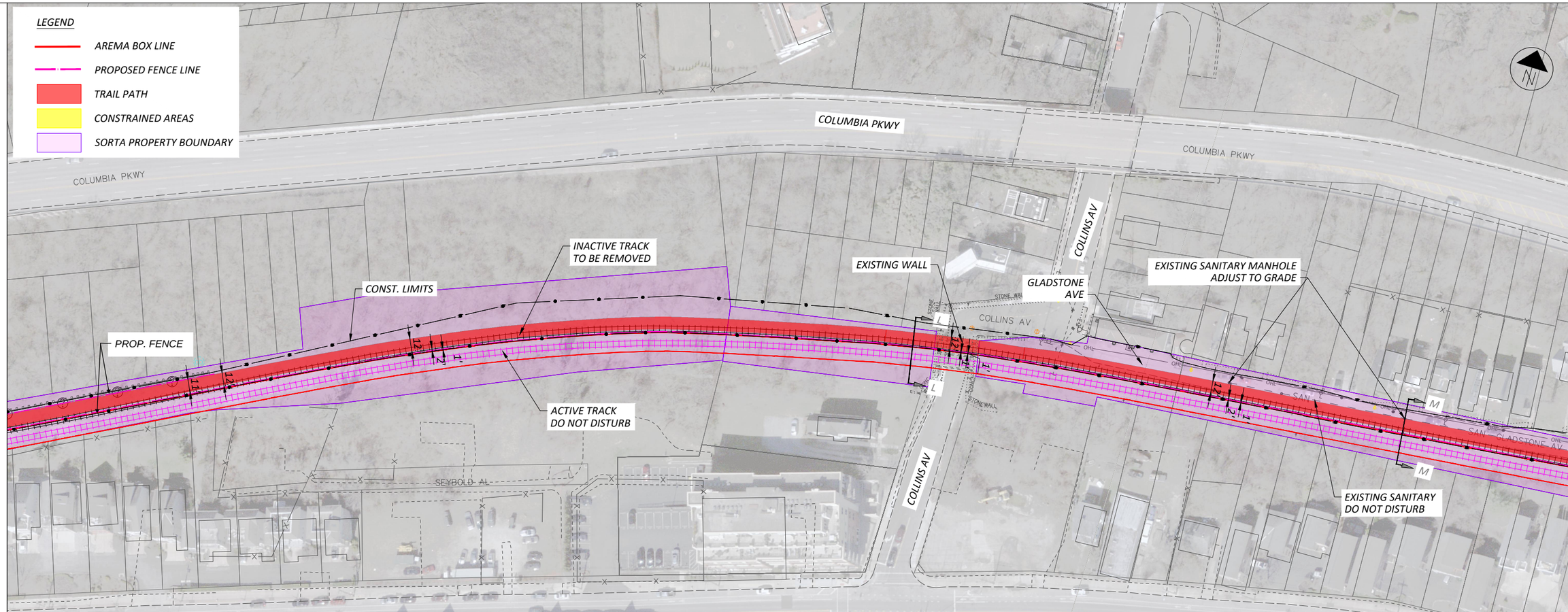
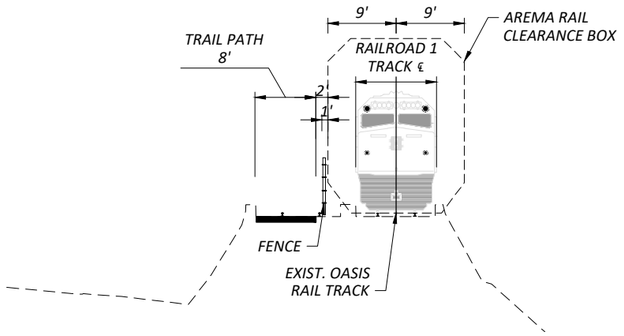
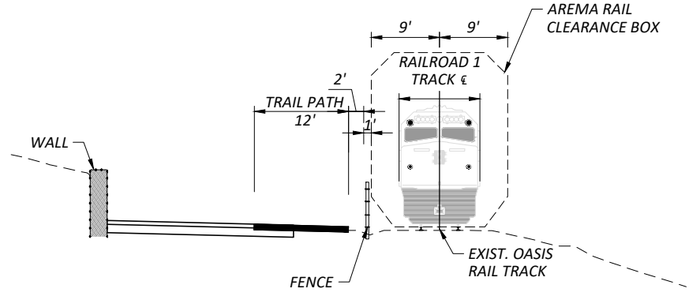




SECTION L-L



SECTION M-M

HORIZONTAL SCALE IN FEET
0 25 50 100

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER
XX

REVIEWER
XX 05-29-26

PROJECT ID
122971

SHEET 8 TOTAL 16

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/28/2026 TIME: 1:25:20 PM USER: Mosier, Terrence
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####

LEGEND

- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- SORTA PROPERTY BOUNDARY

HORIZONTAL SCALE IN FEET
0 25 50 100

COLUMBIA PKWY

EXISTING SANITARY MANHOLE ADJUST TO GRADE

224' RETAINING WALL

PROP. FENCE

CONST. LIMITS

EXISTING SANITARY MANHOLE ADJUST TO GRADE

INACTIVE TRACK TO BE REMOVED

230+0.00

EXISTING CATCH BASIN ADJUST TO GRADE

POTENTIAL WALL LOCATION

ACTIVE TRACK DO NOT DISTURB

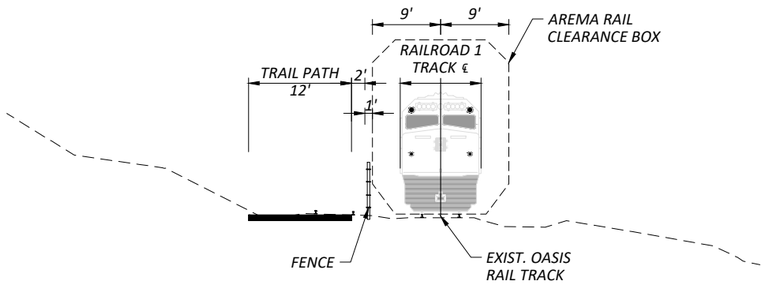
STOW PL

LEWIS ST

RIVERSIDE DR

RIVERSIDE DR

RIVERSIDE DR



SECTION

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER XX

REVIEWER XX 05-29-26

PROJECT ID 122971

SHEET 9 TOTAL 16

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/26/2026 TIME: 5:39:57 PM USER: Mosier, Terrence
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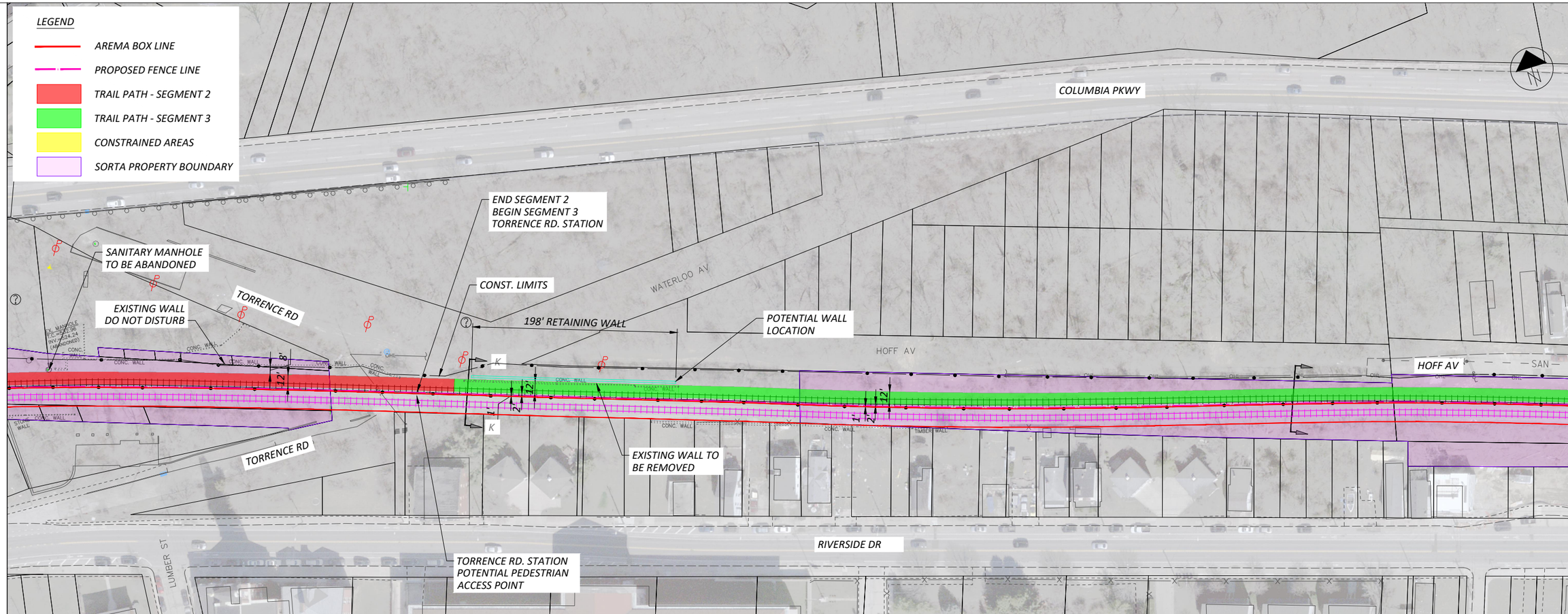
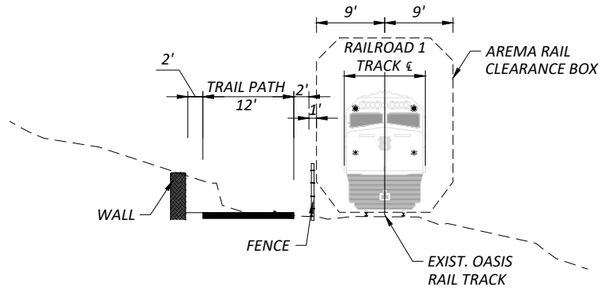
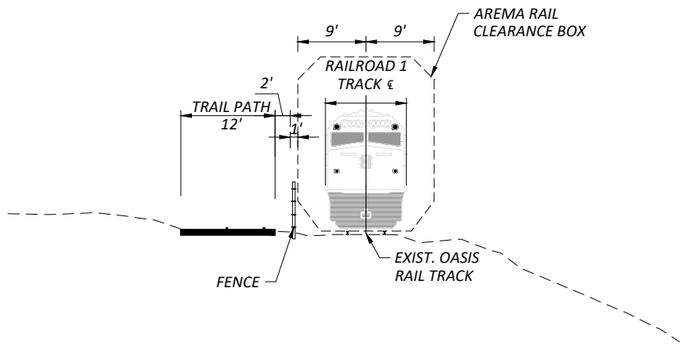




SECTION K-K



SECTION

HORIZONTAL SCALE IN FEET
0 25 50 100

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 10 TOTAL 16

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/27/2026 TIME: 11:12:44 AM USER: Mosier, Terrence
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####

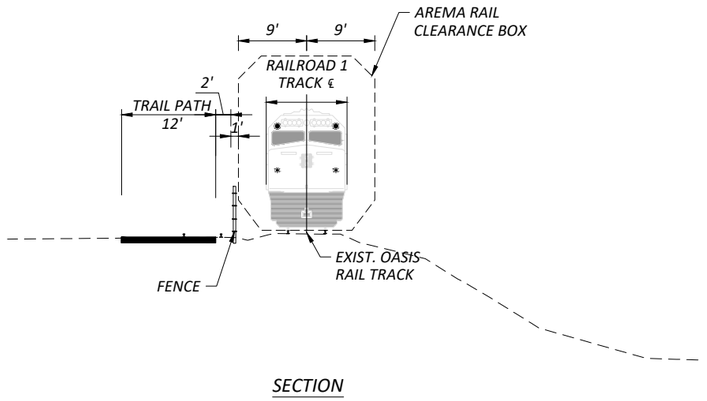
LEGEND

- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- SORTA PROPERTY BOUNDARY

HORIZONTAL SCALE IN FEET
0 25 50 100

COLUMBIA PKWY
FOSTER AL
DRAKE AL
GLADSTONE AV
ST ANDREWS ST
AUDUBON ST
HOFF AV
RIVERSIDE DR
FOSTER ST
PITTSBURG ST
SAN
STONE WALL
OHL

CONST. LIMITS
INACTIVE TRACK TO BE REMOVED
ACTIVE TRACK DO NOT DISTURB
PROP. FENCE
POTENTIAL WALL LOCATION
PROPOSED DETECTABLE WARNING
60' RETAINING WALL
327' RETAINING WALL
770' RETAINING WALL
EXISTING SANITARY DO NOT DISTURB
POTENTIAL WALL LOCATION
HOFF AVE. POTENTIAL PEDESTRIAN ACCESS POINT
SEE ATTACHMENT D
ST. ANDREWS ST. POTENTIAL PEDESTRIAN ACCESS POINT
SEE ATTACHMENT D
ST. ANDREWS ST. PROPOSED ROADWAY IMPROVEMENTS



SECTION

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 895-0100
www.arcadis.com

DESIGNER: XX
REVIEWER: XX MM-DD-YY
PROJECT ID: 122971
SHEET: 11 TOTAL: 16

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LEGEND

- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- SORTA PROPERTY BOUNDARY

HORIZONTAL SCALE IN FEET
0 25 50 100

260+0.00

CONST. LIMITS

INACTIVE TRACK TO BE REMOVED

PROP. FENCE

RIVERSIDE DR

ACTIVE TRACK DO NOT DISTURB

327' RETAINING WALL

LEVASSOR ST

HOFF AV

CORBIN ST

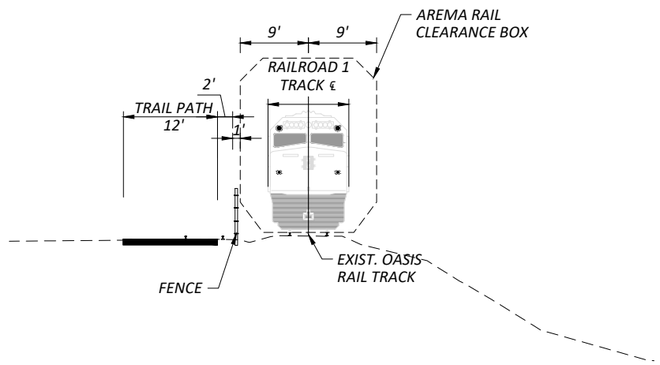
ST PETERS ST

BROWN ST

MAYAPPLE ST

BABB AL

PITTSBURG ST



SECTION

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER XX

REVIEWER XX MM-DD-YY

PROJECT ID 122971

SHEET 12 TOTAL 16

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LEGEND

- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- SORTA PROPERTY BOUNDARY

COLUMBIA PKWY

WALWORTH AV

ASPASIA ST

CONST. LIMITS

INACTIVE TRACKS TO BE REMOVED

PROP. FENCE

1'

2'

12'

RIVERSIDE DR

ACTIVE TRACKS DO NOT DISTURB

WALWORTH TUNNEL

SEE ATTACHMENT D

MAYAPPLE ST

RIDGLEY ST

PAGE ST

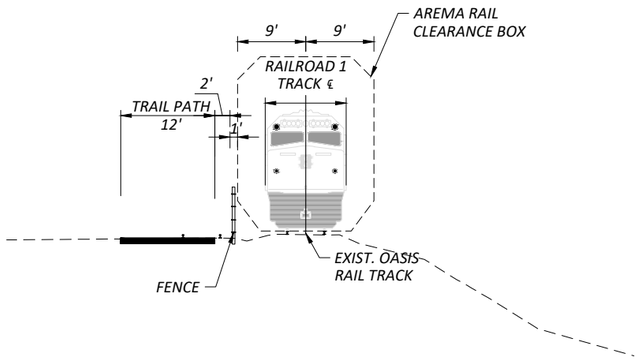
WATSON ST

WENNER ST

BABB AL

HORIZONTAL SCALE IN FEET

0 25 50 100



SECTION

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4900
www.arcadis.com

DESIGNER: XX

REVIEWER: XX MM-DD-YY

PROJECT ID: 122971

SHEET: 13 TOTAL: 16

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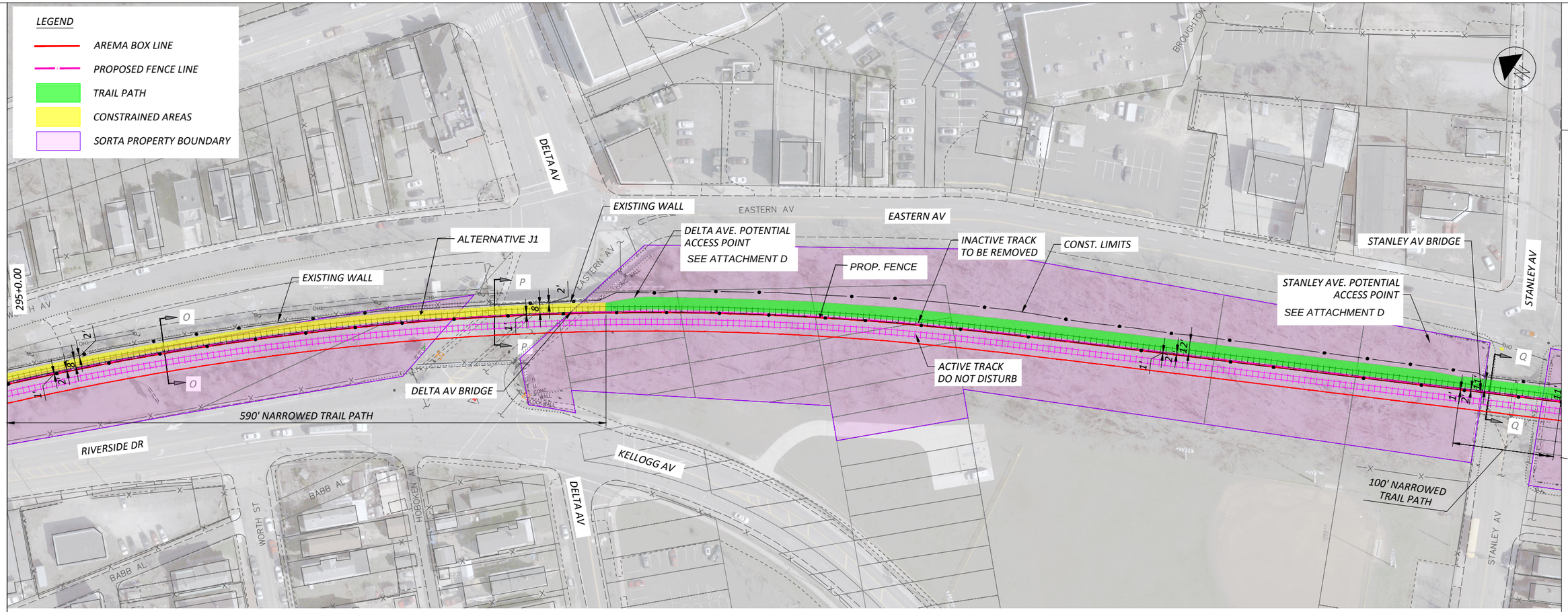
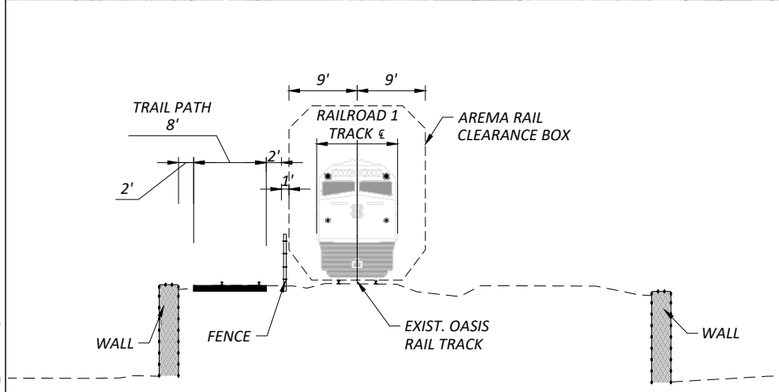
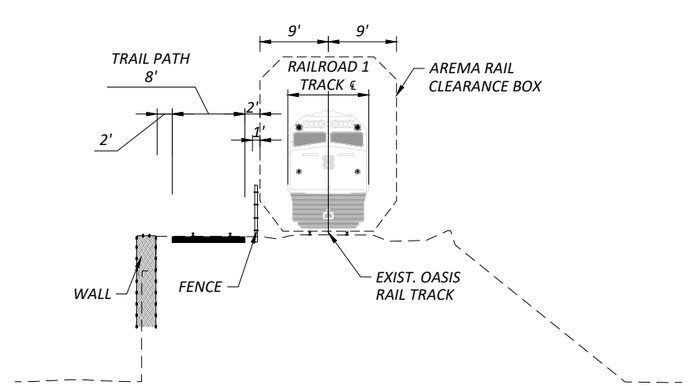
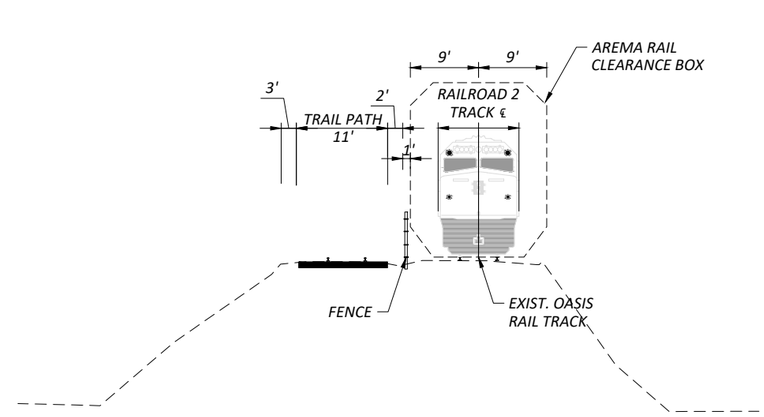




SECTION O-O



SECTION P-P



SECTION Q-Q

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4500
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 14 TOTAL 16

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/27/2026 TIME: 11:29:14 PM USER: Mosier, Terrence
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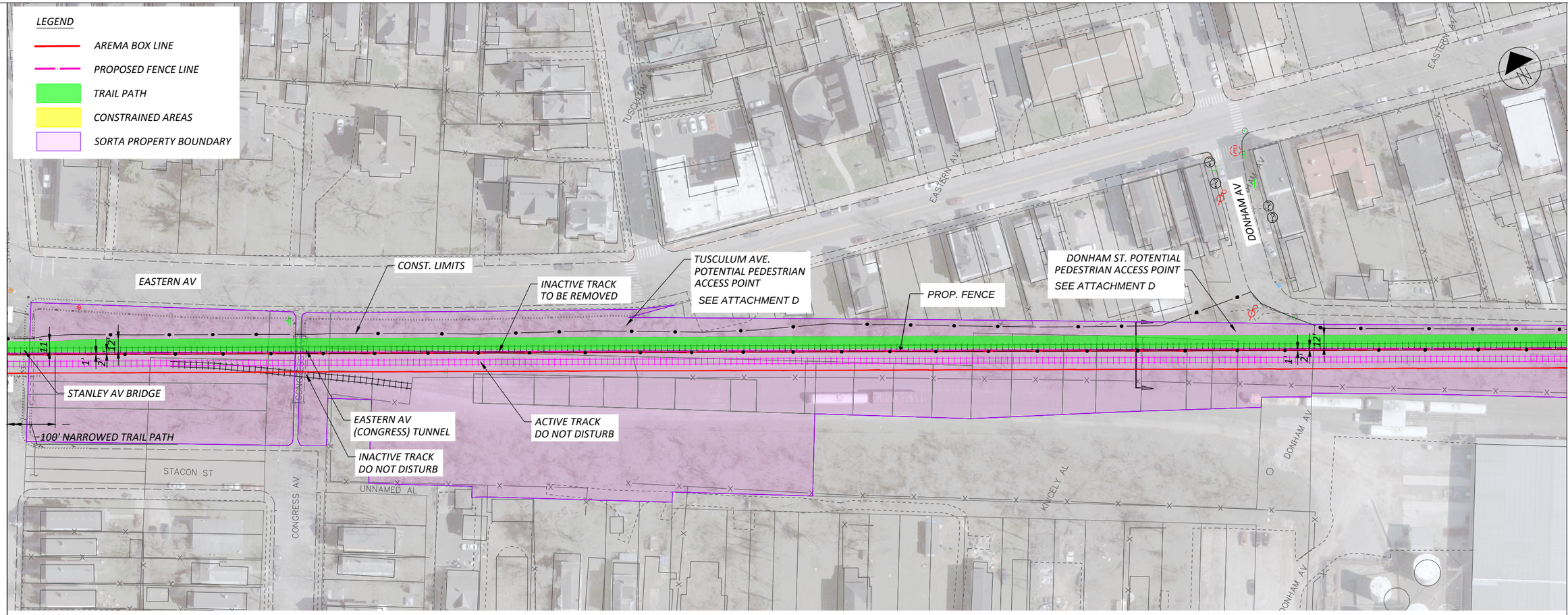

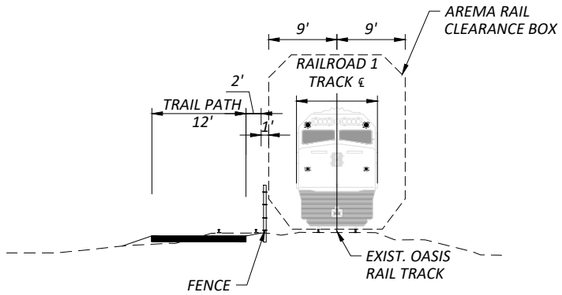

SECTION

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 15 | TOTAL 16

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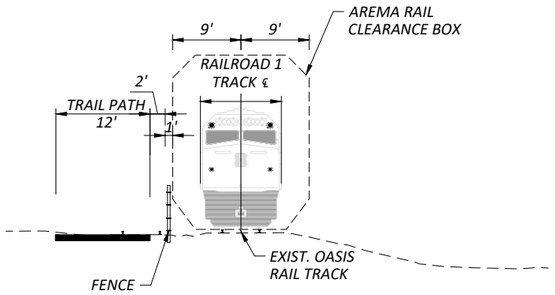
LEGEND

- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- SORTA PROPERTY BOUNDARY

HORIZONTAL SCALE IN FEET
0 25 50 100

TENNYSON ST
MCCULLOUGH ST
CARREL ST
DUMONT ST
ALLEY #17

INACTIVE TRACK TO BE REMOVED
TENNYSON ST. ROADWAY IMPROVEMENTS
PROP. FENCE
EXISTING SANITARY MANHOLE ADJUST TO GRADE
CONST. LIMITS
END SEGMENT 3 CARREL ST. CONNECTION
OHIO RIVER TRAIL CONNECTION SEE ATTACHMENT D
PROPOSED DETECTABLE WARNING
ACTIVE TRACK DO NOT DISTURB
INACTIVE TRACK DO NOT DISTURB
OHIO RIVER TRAIL
2'
12'
R



SECTION R-R

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4900
www.arcadis.com

DESIGNER XX
REVIEWER XX MM-DD-YY
PROJECT ID 122971
SHEET 16 TOTAL 16

PAPERSIZE: ANSI D (34.00 x 22.00 inches)DATE: 5/26/2026 TIME: 5:52:38 PM USER: Mosier, Terrence
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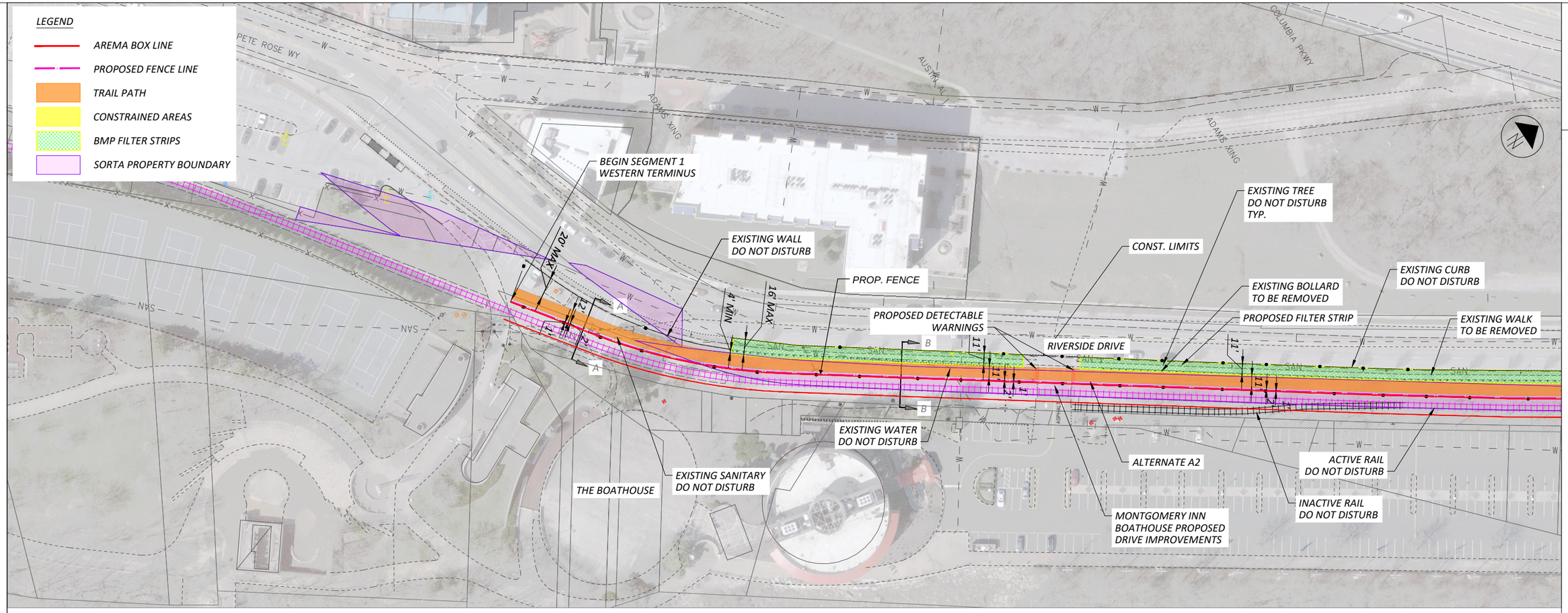
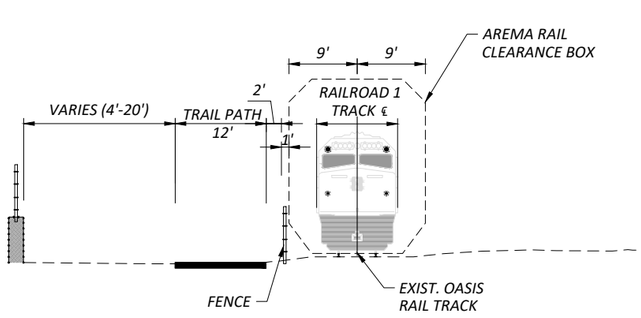
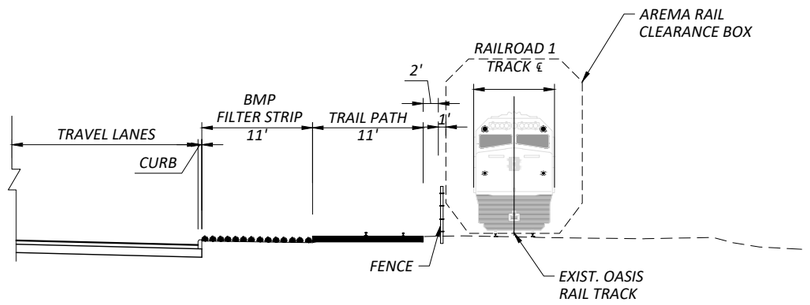




SECTION A-A



SECTION B-B

ALTERNATIVE A2

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 1 TOTAL 16

PAPERSIZE: ANSI D (34.00 x 22.00 inches)DATE: 5/27/2026 TIME: 11:00:42 AM USER: Mosier, Terrence
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####

LEGEND

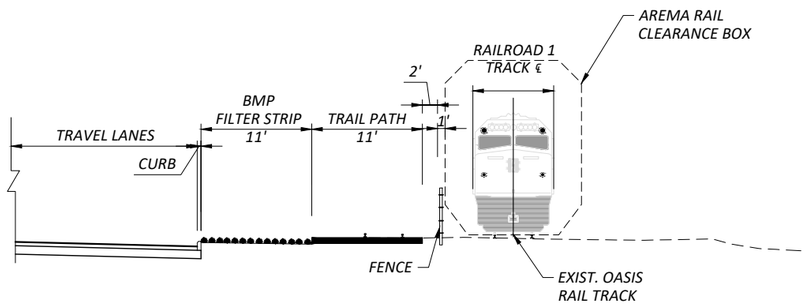
- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- BMP FILTER STRIPS
- SORTA PROPERTY BOUNDARY

HORIZONTAL SCALE IN FEET
0 25 50 100

N

COLUMBIA PKWY
MARTIN DR
PARSONS ST
WHITTAKER ST
KITTAIL AL
RIVERSIDE DR

EXISTING TREE DO NOT DISTURB TYP.
PROPOSED DETECTABLE WARNINGS
EXISTING BOLLARD TO BE REMOVED
EXISTING CURB DO NOT DISTURB
EXISTING WALK TO BE REMOVED
PROPOSED FILTER STRIP
CONST. LIMITS
PROP. FENCE
INTERNATIONAL FRIENDSHIP PARK - PARKING
FRIENDSHIP PARK DRIVE IMPROVEMENTS
TM BERRY INTERNATIONAL FRIENDSHIP PARK
ACTIVE TRACK DO NOT DISTURB
INACTIVE TRACK DO NOT DISTURB
ALTERNATIVE A2



SECTION B-B

ALTERNATIVE A2

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER: XX
REVIEWER: XX MM-DD-YY
PROJECT ID: 122971
SHEET: 2 TOTAL: 16

PAPERSIZE: ANSI D (34.00 x 22.00 inches)DATE: 5/27/2026 TIME: 11:02:09 AM USER: Mosier, Terrence
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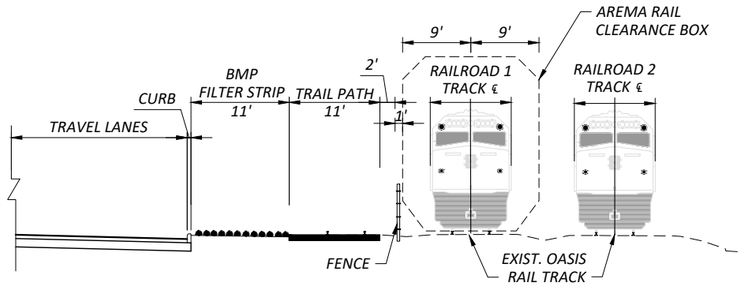
####

LEGEND

- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- BMP FILTER STRIPS
- SORTA PROPERTY BOUNDARY

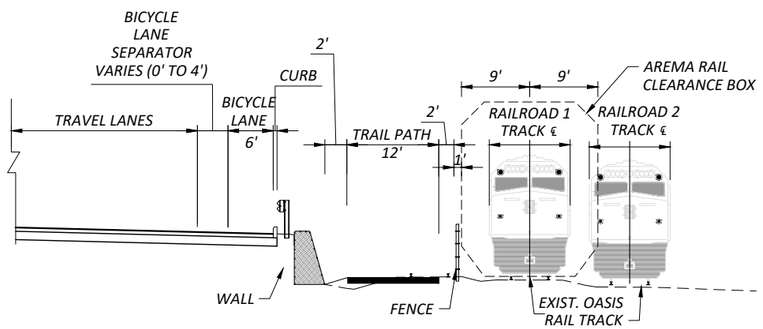
HORIZONTAL SCALE IN FEET
0 25 50 100

BAINS ST
COLLARD ST
EXISTING WALK TO BE REMOVED
PROPOSED FILTER STRIP
EXISTING TREE DO NOT DISTURB TYP.
EXISTING CURB DO NOT DISTURB
EXISTING BOLLARD TO BE REMOVED
RIVERSIDE DR
PROP. FENCE
189' RETAINING WALL
INACTIVE RAIL TO BE REMOVED
CONST. LIMITS
EXISTING WALL DO NOT DISTURB
RIVERSIDE DR
INACTIVE RAIL DO NOT DISTURB
ACTIVE RAIL DO NOT DISTURB
ALTERNATE A2
FRIENDSHIP PARK - VALLEY OF THE SUN DRIVE IMPROVEMENTS
FRIENDSHIP PARK - VALLEY OF THE SUN
ALTERNATIVE B2
EXISTING WALL TO BE REMOVED
CRYSTALLINE TOWER



SECTION C-C

ALTERNATIVE A2



SECTION D-D

ALTERNATIVE B2

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 220
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER XX

REVIEWER XX MM-DD-YY

PROJECT ID 122971

SHEET 3 TOTAL 16

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PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/27/2026 TIME: 11:04:16 AM USER: Mosier, Terrence
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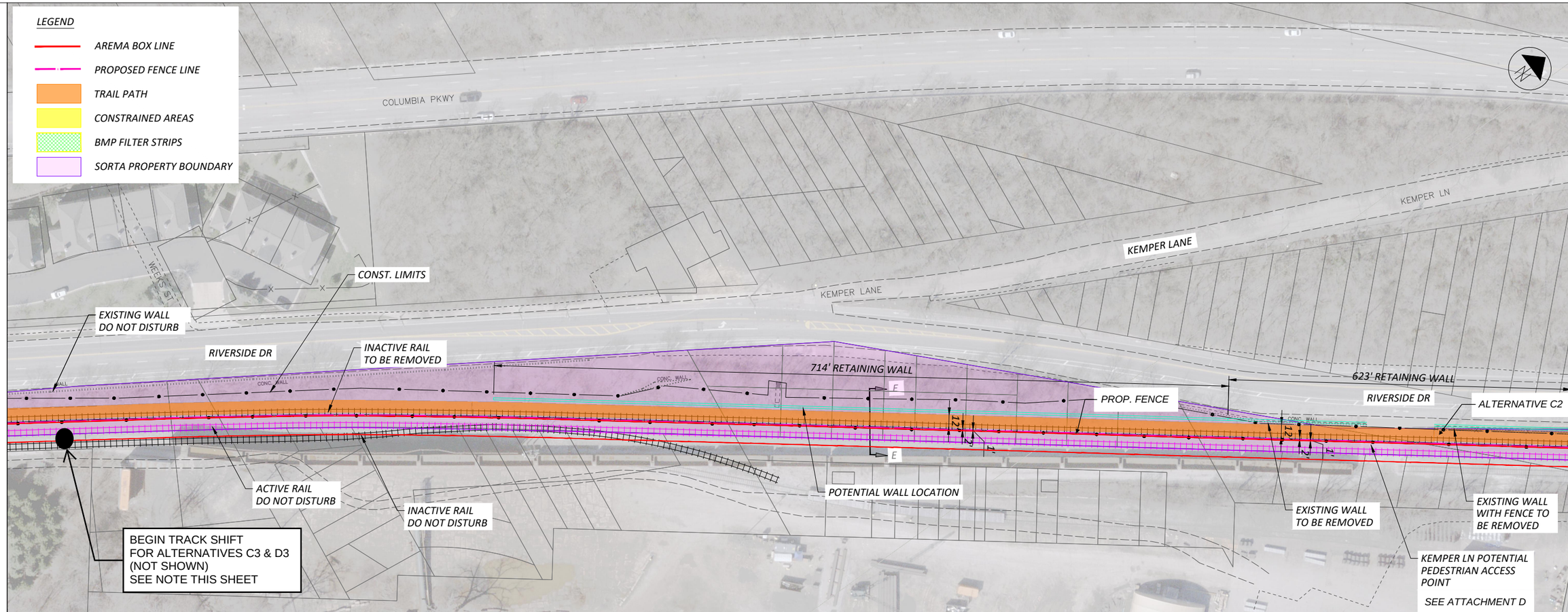
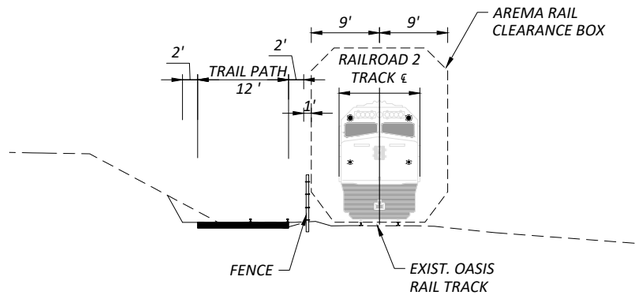


HORIZONTAL SCALE IN FEET
0 25 50 100

OASIS TRAIL PLAN



SECTION E-E

NOTE:
ALTERNATIVE D3 TRACK SHIFT INCLUDES SHIFTING THEMAIN SOUTHERN TRACK APPROXIMATELY 5 FEET TO THE SOUTH TO ACCOMODATE THE PROPOSED TRAIL. A PORTION OF THE SIDING TRACK, LOCATED SOUTH OF THE ECISTING MAIN FROM THE ROOKWOOD BRDIGE WEST TO THE ENTRANCE OF INTERNATION FRIENDSHIP PARK, WILL ALSO BE SHIFTED TO ACCOMMODATE THE MAIN TRACK SHIFT.

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 4 TOTAL 16

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####

LEGEND

- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- BMP FILTER STRIPS
- SORTA PROPERTY BOUNDARY

COLUMBIA PKWY

623' RETAINING WALL

RIVERSIDE DR

ROOKWOOD BRIDGE

PROP. FENCE

CONST. LIMITS

INACTIVE RAIL
TO BE REMOVED

ACTIVE RAIL
DO NOT DISTURB

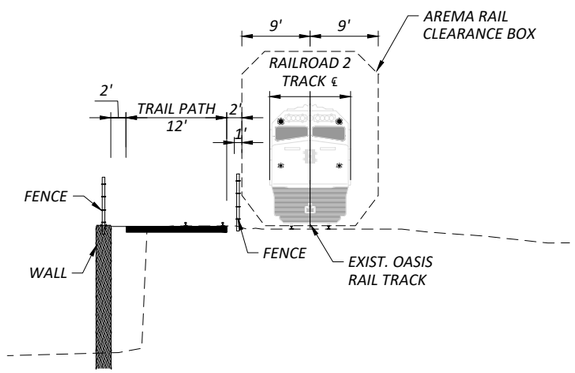
ALTERNATIVE C2

ALTERNATIVE D2

RIVERSIDE DR

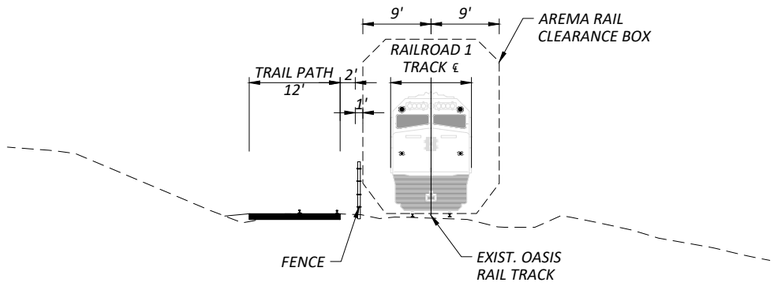
END TRACK SHIFT
FOR ALTERNATIVES C3 & D3
(NOT SHOWN)
SEE NOTE THIS SHEET

HORIZONTAL
SCALE IN FEET
0 25 50 100



SECTION F-F

ALTERNATIVE C2 & D2



SECTION G-G

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 5 TOTAL 16

#####

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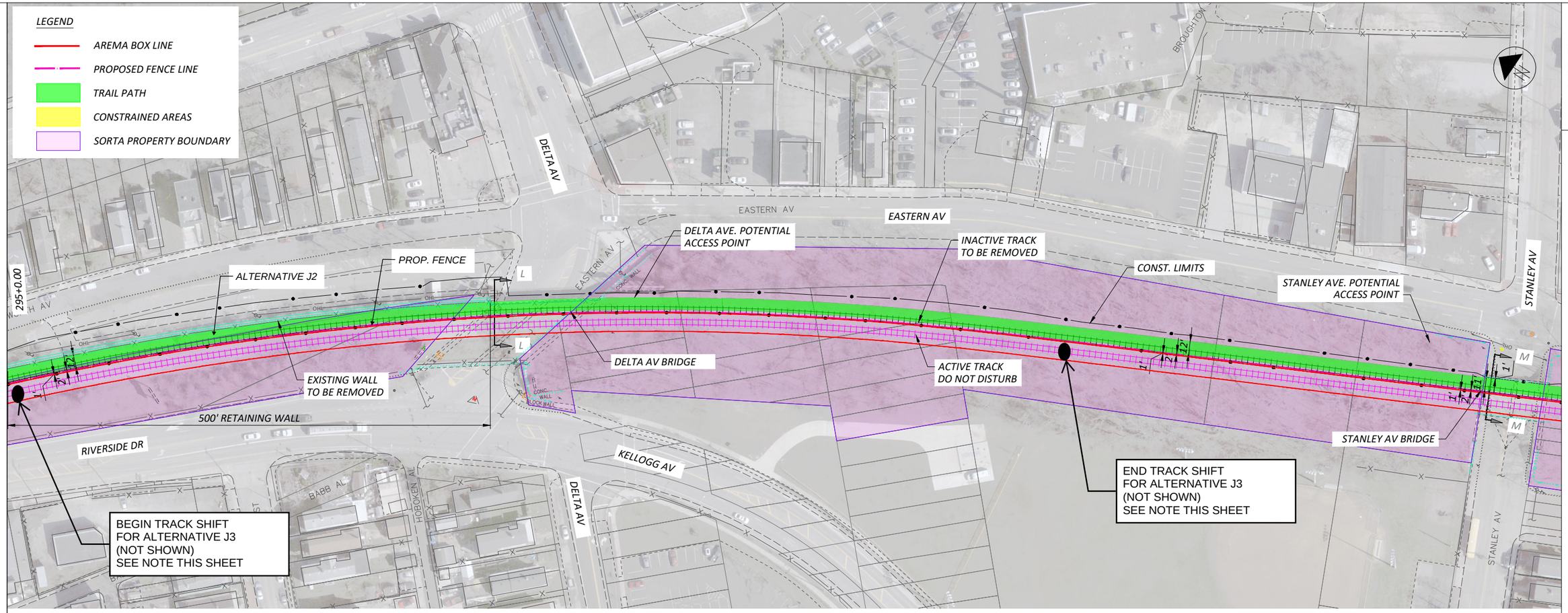
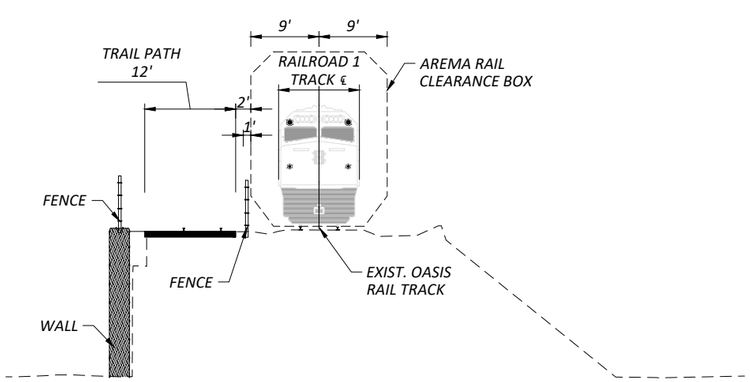
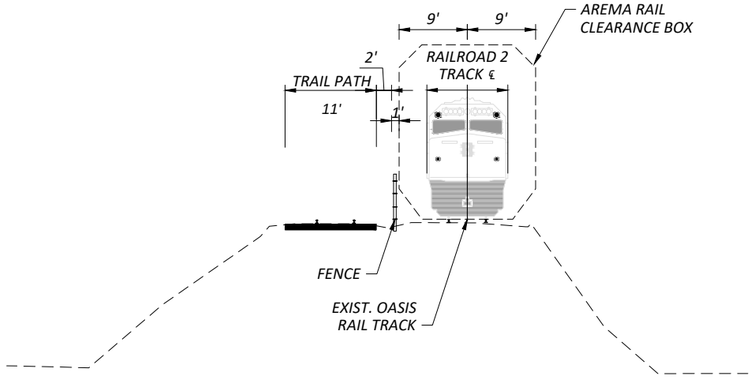




SECTION L-L

ALTERNATIVE J2



SECTION M-M

NOTE:
ALTERNATIVE J3 TRACK SHIFT INCLUDES SHIFTING THE MAIN SOUTHERN TRACK APPROXIMATELY 8 FEET TO THE SOUTH AT DELTA BRIDGE TO ACCOMODATE THE PROPOSEDTRAIL.

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER: XX
REVIEWER: XX MM-DD-YY
PROJECT ID: 122971
SHEET: 14 TOTAL: 16

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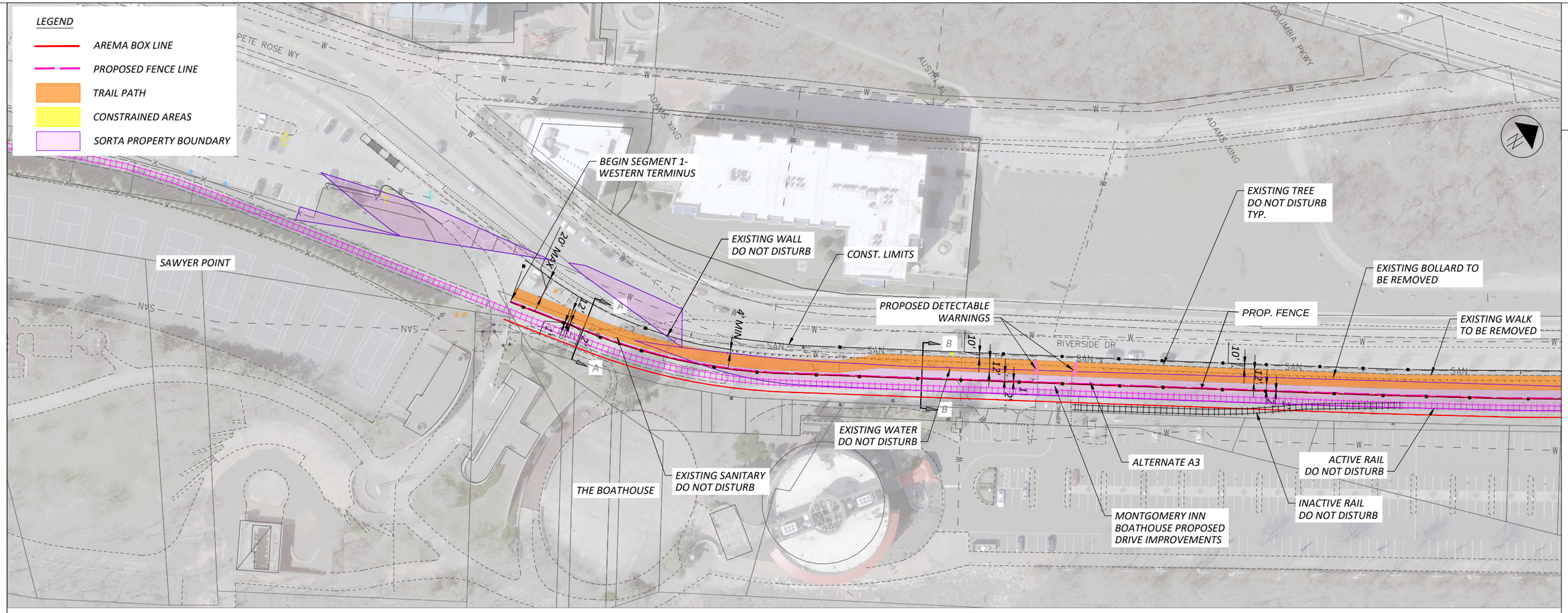
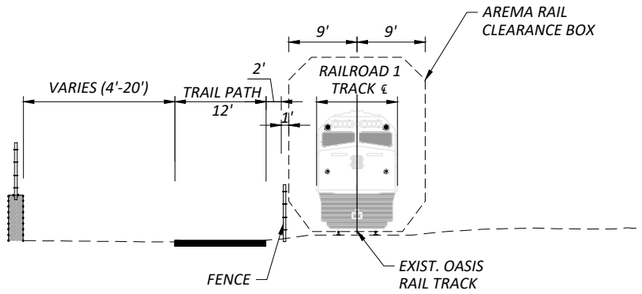
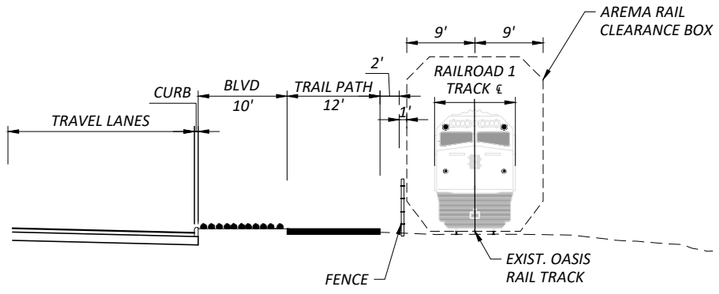


HORIZONTAL SCALE IN FEET
0 25 50 100



SECTION A-A



SECTION B-B

ALTERNATIVE A3

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER
XX

REVIEWER
XX 05-29-26

PROJECT ID
122971

SHEET 1 TOTAL 3

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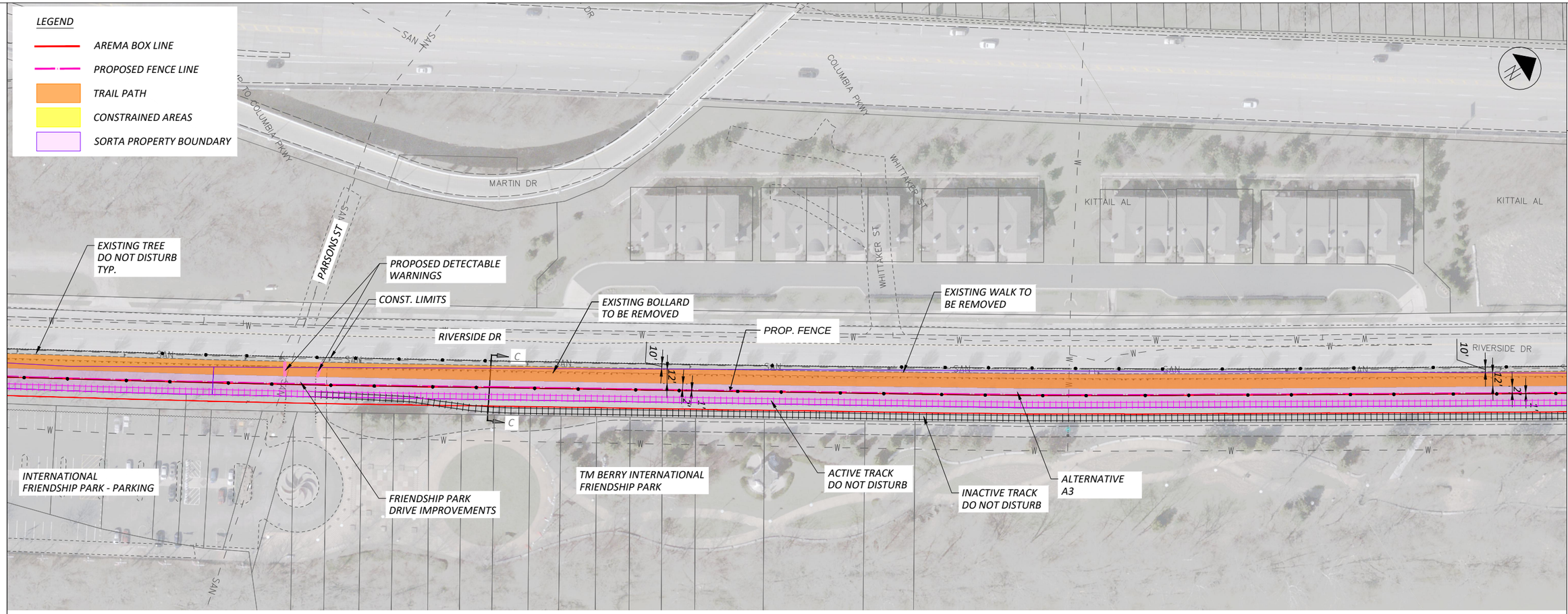

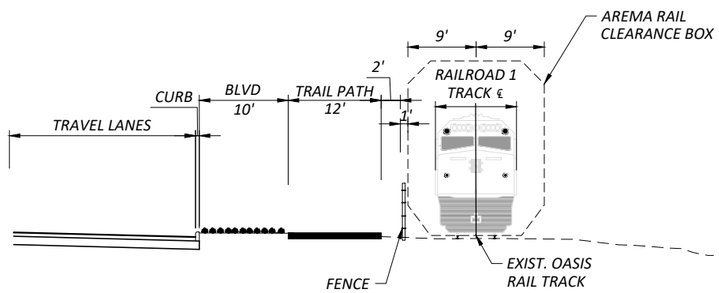

SECTION C-C

ALTERNATIVE A3

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-1500
www.arcadis.com

DESIGNER
XX

REVIEWER
XX 05-29-26

PROJECT ID
122971

SHEET 2 | TOTAL 3

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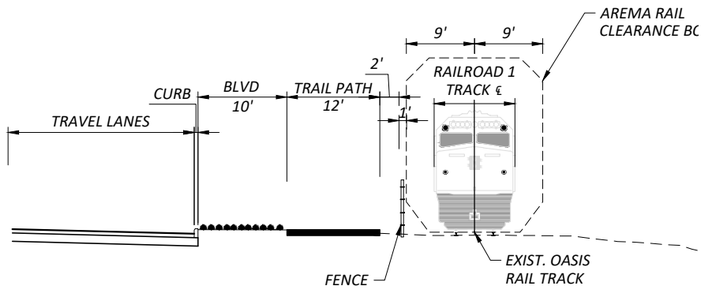
LEGEND

- AREMA BOX LINE
- PROPOSED FENCE LINE
- TRAIL PATH
- CONSTRAINED AREAS
- SORTA PROPERTY BOUNDARY

HORIZONTAL SCALE IN FEET
0 25 50 100

BAINS ST
COLLARD ST
EXISTING WALK TO BE REMOVED
CONST. LIMITS
EXISTING BOLLARD TO BE REMOVED
EXISTING TREE DO NOT DISTURB TYP.
RIVERSIDE DR
RIVERSIDE DR
END OF OPTION 3, FOLLOW OPTION 1 OR 2 FROM HERE
PROP. FENCE
INACTIVE RAIL TO BE REMOVED
RIVERSIDE DR
10'
12'
2'
1'
ALTERNATE A3
INACTIVE RAIL DO NOT DISTURB
ACTIVE RAIL DO NOT DISTURB
FRIENDSHIP PARK - VALLEY OF THE SUN DRIVE IMPROVEMENTS
FRIENDSHIP PARK - VALLEY OF THE SUN
CRYSTALLINE TOWER



SECTION C-C

ALTERNATIVE A3

OASIS TRAIL PLAN

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER XX

REVIEWER XX 05-29-26

PROJECT ID 122971

SHEET 3 TOTAL 3

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 6/12/2026 TIME: 10:39:22 AM USER: Mosier, Terrence
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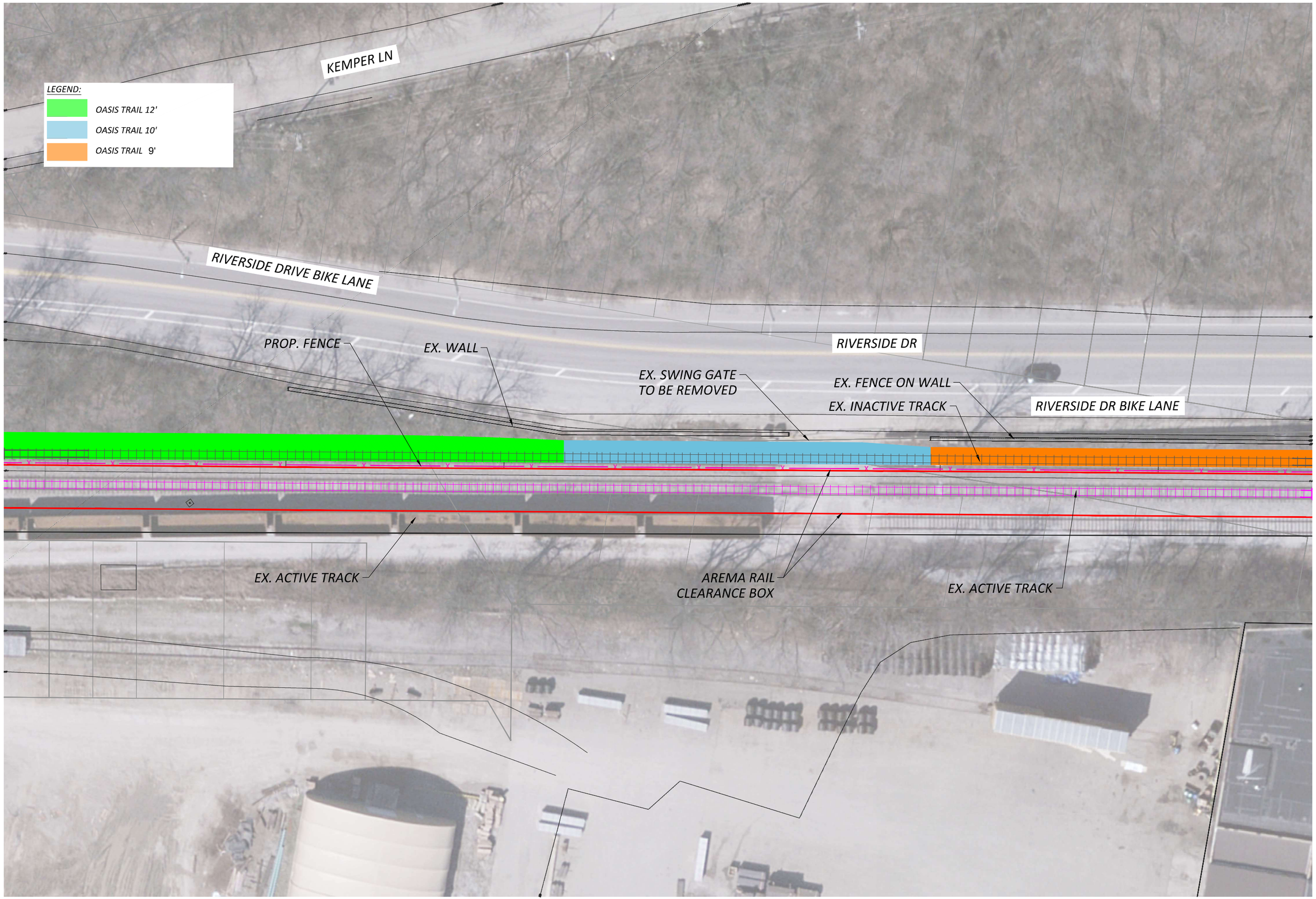
####

Attachment D

Pedestrian Access Points Build Alternatives



HORIZONTAL SCALE IN FEET
0 10 20 40

KEMPER LN/ ROOKWOOD BRIDGE PEDESTRIAN ACCESS POINT

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 200
COLUMBUS, OHIO 43235
(614) 985-9700
www.arcadis.com

DESIGNER: XX
REVIEWER: XX MM-DD-YY
PROJECT ID: 122971
SHEET: 2 TOTAL: 2

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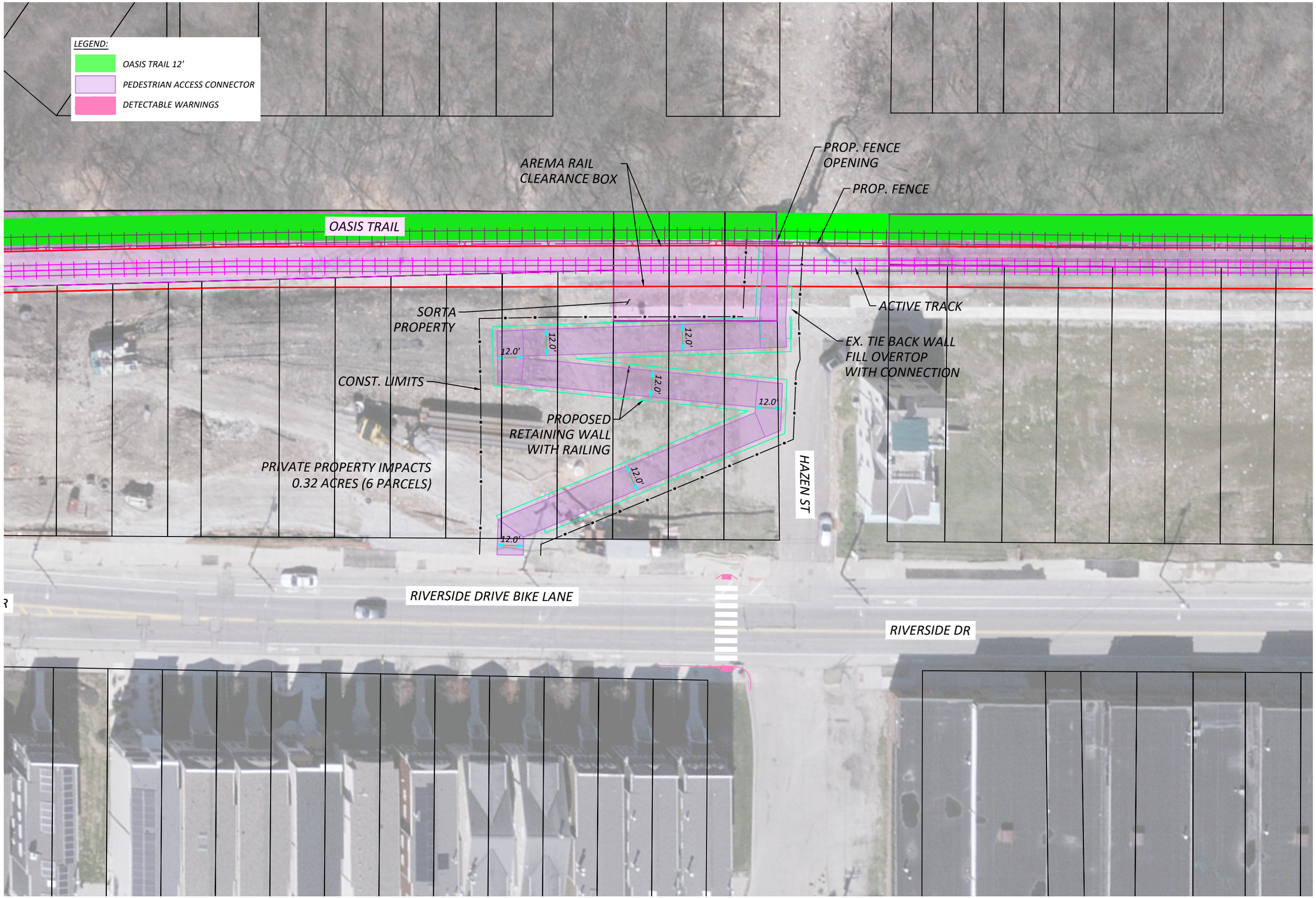

HORIZONTAL SCALE IN FEET
0 10 20 40

HAZEN STREET PEDESTRIAN ACCESS POINT ALTERNATIVE F1

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 2 TOTAL 2

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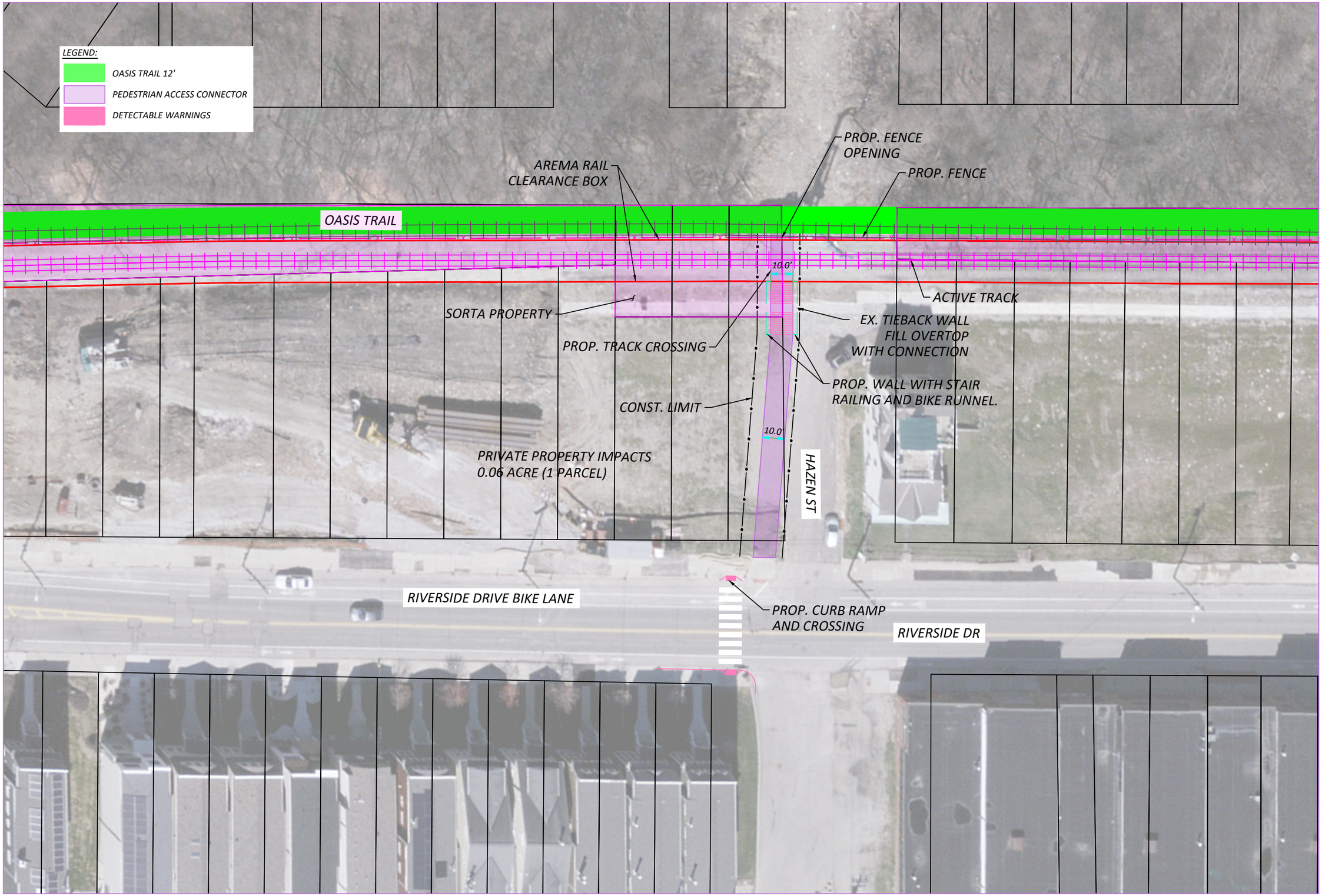

HORIZONTAL SCALE IN FEET
0 10 20 40

HAZEN STREET PEDESTRIAN ACCESS POINT
ALTERNATIVE F2

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 2 TOTAL 2

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LEGEND:
- OASIS TRAIL 12'
- PEDESTRIAN ACCESS CONNECTOR
- DETECTABLE WARNINGS
- SORTA PROPERTY BOUNDARY

EX. WALL
EX. WALL
PROP. FENCE
OASIS TRAIL
AREMA RAIL CLEARANCE BOX
2'
12'
16'
12'
16'
EX. WALL
2'
12'
ACTIVE TRACK
INACTIVE TRACK
EX. LIGHTING (DND)
EX. STAIRS (DND)
PROPERTY IMPACTS
0.06 ACRE (1 PARCEL)
PROP. RETAINING WALL WITH BIKE RAIL
TORRENCE RD
CONST. LIMITS
RIVERSIDE DR
LUMBER ST

HORIZONTAL SCALE IN FEET
0 10 20 40

OASIS TRAIL
TORRENCE STATION ACCESS POINT ALTERNATIVE G1

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER	
TFM	
REVIEWER	
MJB 05-29-26	
PROJECT ID	
122971	
SHEET	TOTAL
1	5

#####

PAPERSIZE: ANSI D (34.00 x 22.00 inches)DATE: 5/28/2026 TIME: 1:13:33 PM USER: Mosier, Terrence
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LEGEND:

- OASIS TRAIL 12'
- PEDESTRIAN ACCESS CONNECTOR
- DETECTABLE WARNINGS
- SORTA PROPERTY BOUNDARY

EX. WALL
EX. WALL
OASIS TRAIL
PROP. FENCE
AREMA RAIL CLEARANCE BOX
EX. WALL
2'
8'
PROP. CURB
CONST. LIMITS
TAPER 9' TO 8'
9'
TORRENCE RD
TIE-IN TO EX. WALK
PROPERTY IMPACTS
0.00 ACRE
INACTIVE TRACK
ACTIVE TRACK
EX. LIGHTING (DND)
EX. STAIRS (DND)
RIVERSIDE DR
LUMBER ST

HORIZONTAL SCALE IN FEET
0 10 20 40

OASIS TRAIL
TORRENCE STATION ACCESS POINT ALTERNATIVE G2

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER: TFM
REVIEWER: MJB 05-29-26
PROJECT ID: 122971
SHEET: 2 TOTAL: 5

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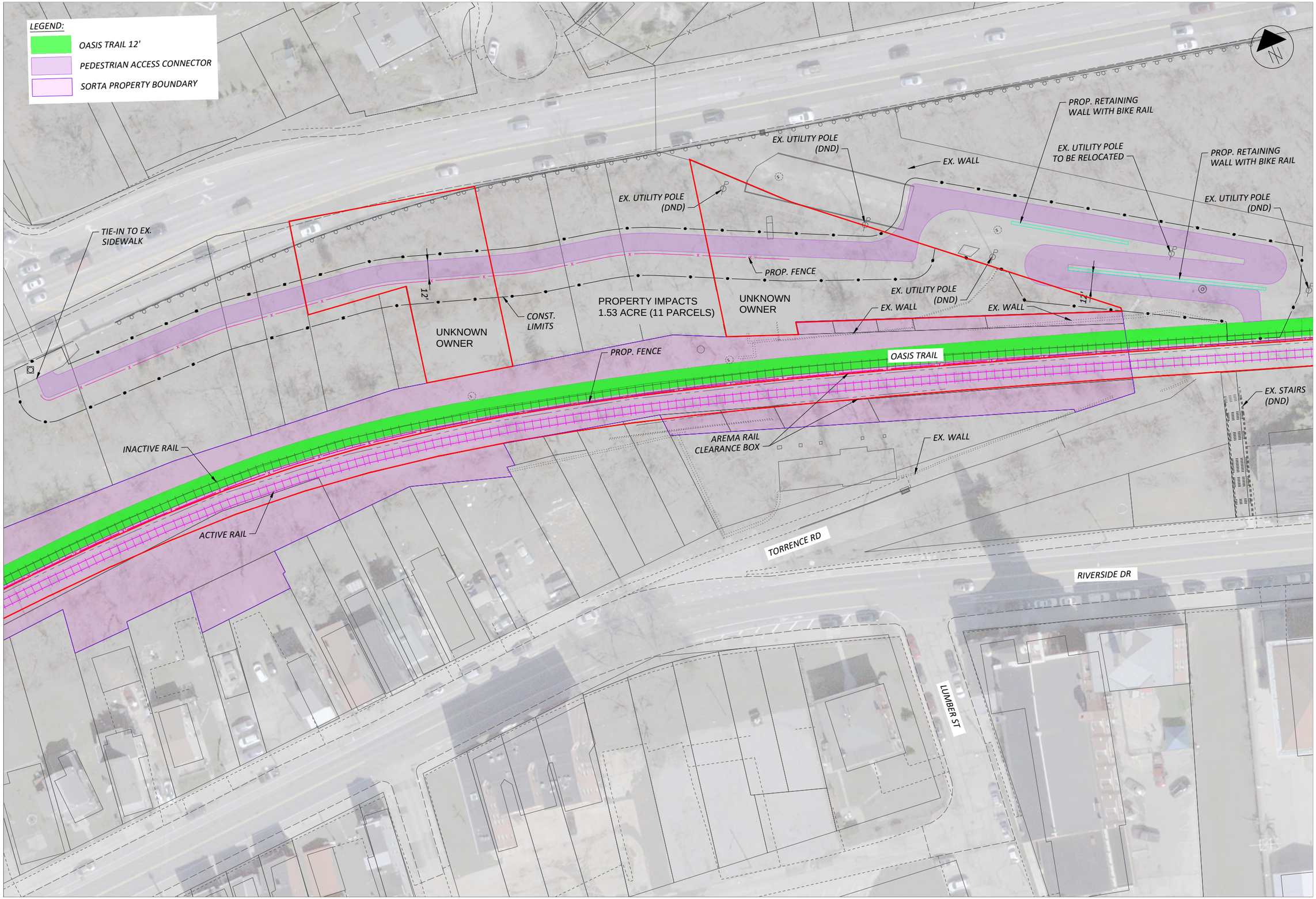

HORIZONTAL SCALE IN FEET
0 15 30 60

OASIS TRAIL
TORRENCE STATION ACCESS POINT ALTERNATIVE G3

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER: TFM
REVIEWER: MJB 05-29-26
PROJECT ID: 122971
SHEET: 3 TOTAL: 5

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PAPERSIZE: ANSI D (34.00 x 22.00 inches)DATE: 5/28/2026 TIME: 9:11:05 AM USER: Mosier, Terrence
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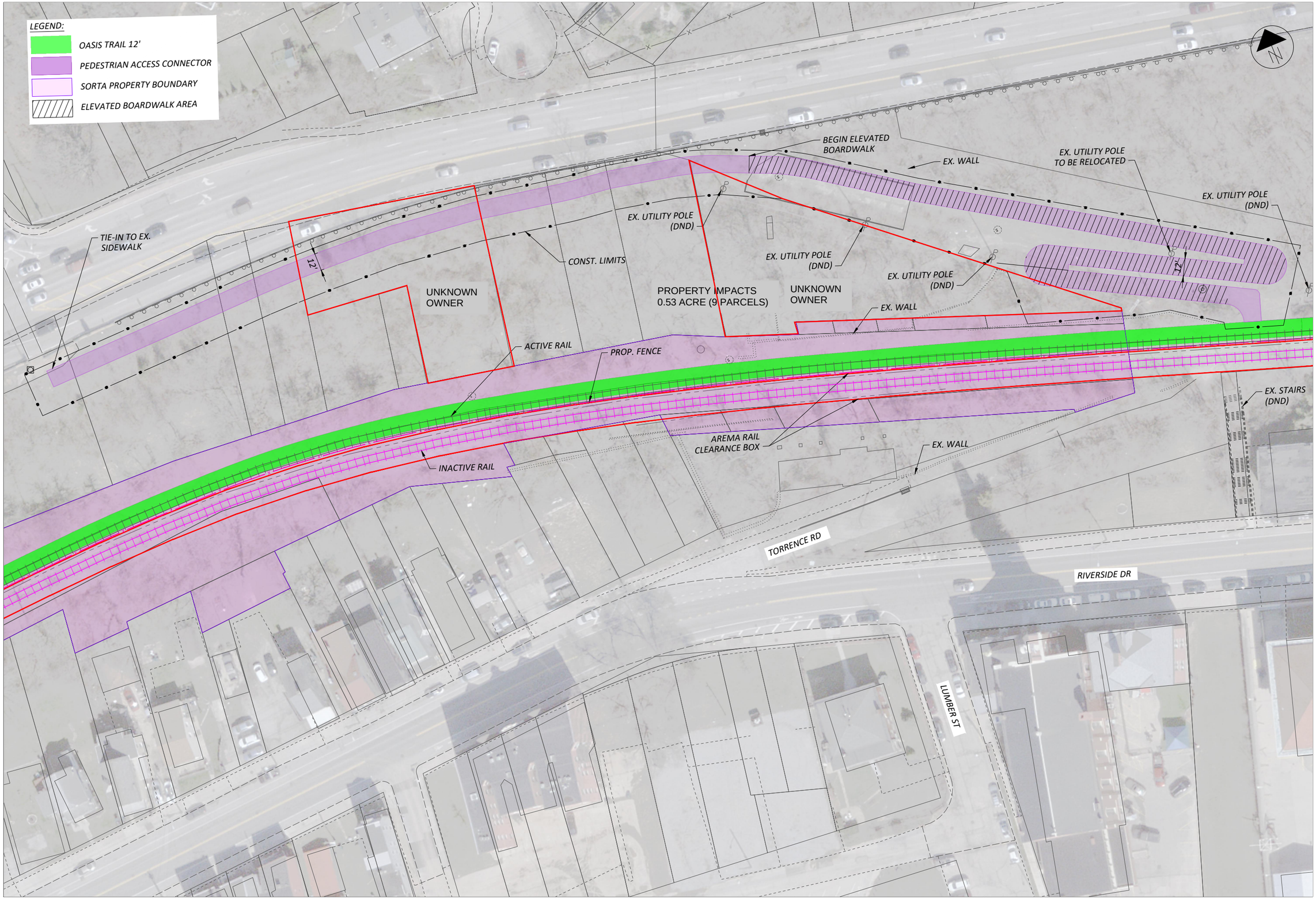

HORIZONTAL SCALE IN FEET
0 15 30 60

OASIS TRAIL
TORRENCE STATION ACCESS POINT ALTERNATIVE G4

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER
TFM

REVIEWER
MJB 05-29-26

PROJECT ID
122971

SHEET 4 | TOTAL 5

#####

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WILLIAM HOWARD TAFT RD

TORRENCE PKWY

COLUMBIA PKWY

COLUMBIA PKWY

COLUMBIA PKWY

EX. WALL (TBR)

TIE-IN TO EXISTING SIDEWALK

EX. WALL (TBR)

17.0'

12.0'

INACTIVE TRACK

OASIS TRAIL

OASIS TRAIL

OASIS TRAIL

ACTIVE TRACK

AREMA RAIL CLEARANCE BOX

CITY PROPERTY IMPACTS
0.64 ACRE (3 PARCELS)

LEGEND:

- *OASIS TRAIL 12'*
- *PEDESTRIAN ACCESS CONNECTOR*
- *DETECTABLE WARNINGS*
- *SORTA PROPERTY BOUNDARY*

HORIZONTAL SCALE IN FEET
0 10 20 40

OASIS TRAIL
COLUMBIA PARKWAY SWITCHBACK ALTERNATIVE G5

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 200
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER	NWH
REVIEWER	MJB 05-29-26
PROJECT ID	122971
SHEET	5
TOTAL	5

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/27/2026 TIME: 11:25:13 PM USER: Mosier, Terrence
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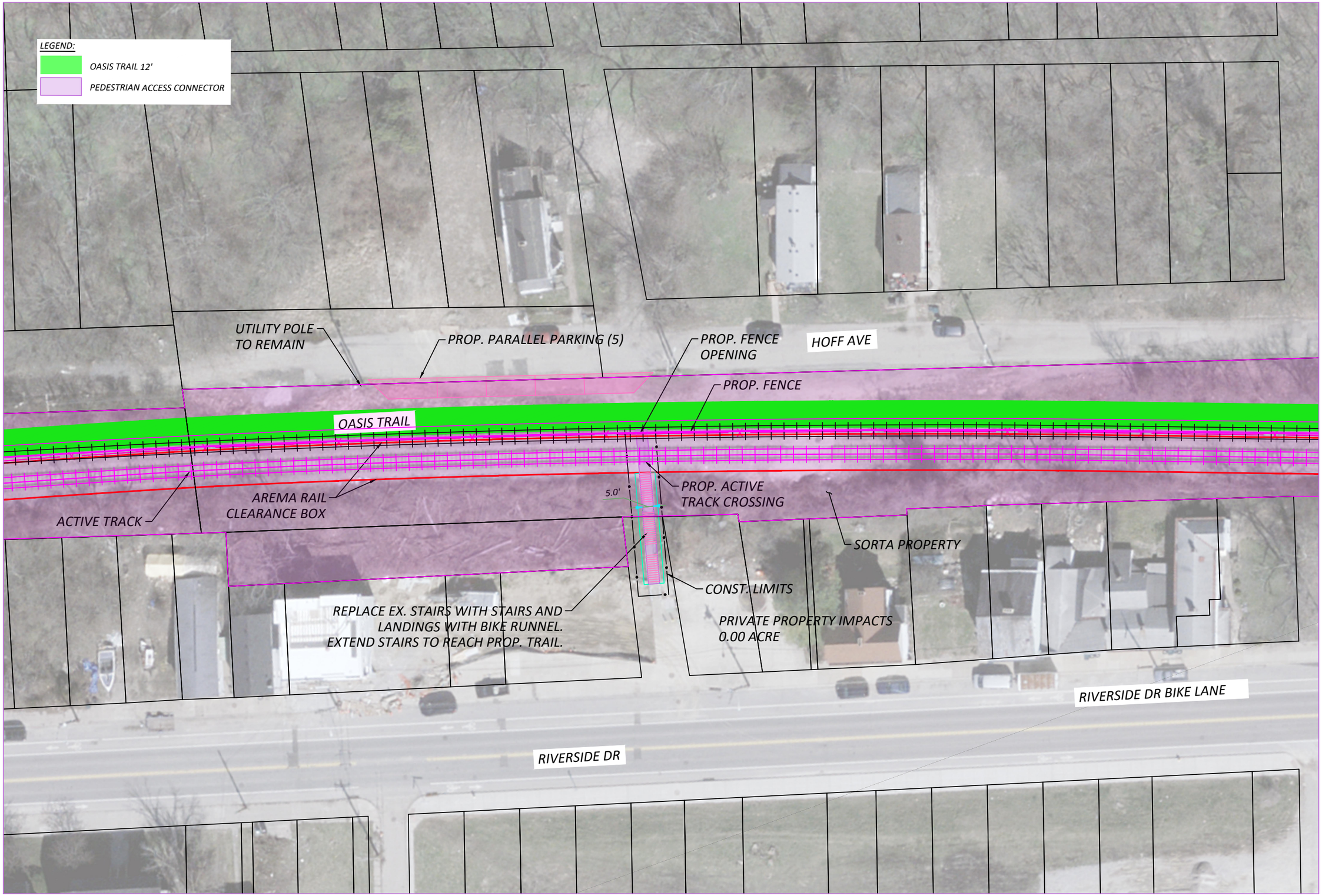

HORIZONTAL SCALE IN FEET
0 10 20 40

HOFF AVENUE PEDESTRIAN ACCESS POINT

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 200
COLUMBUS, OHIO 43235
(614) 985-4500
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 2 | TOTAL 2

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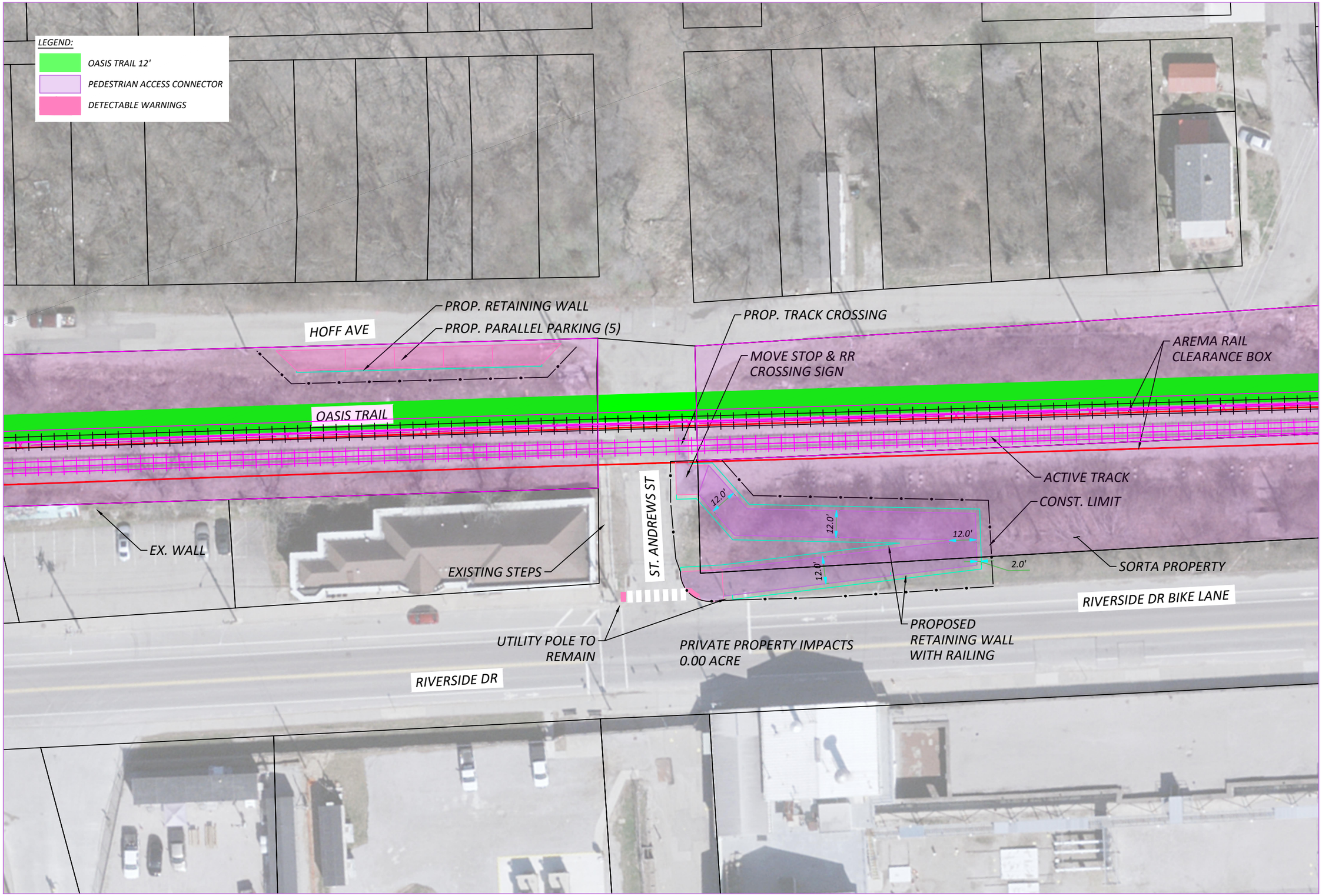

HORIZONTAL SCALE IN FEET
0 10 20 40

ST. ANDREWS STREET PEDESTRIAN ACCESS POINT
ALTERNATIVE H1

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4900
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 2 | TOTAL 2

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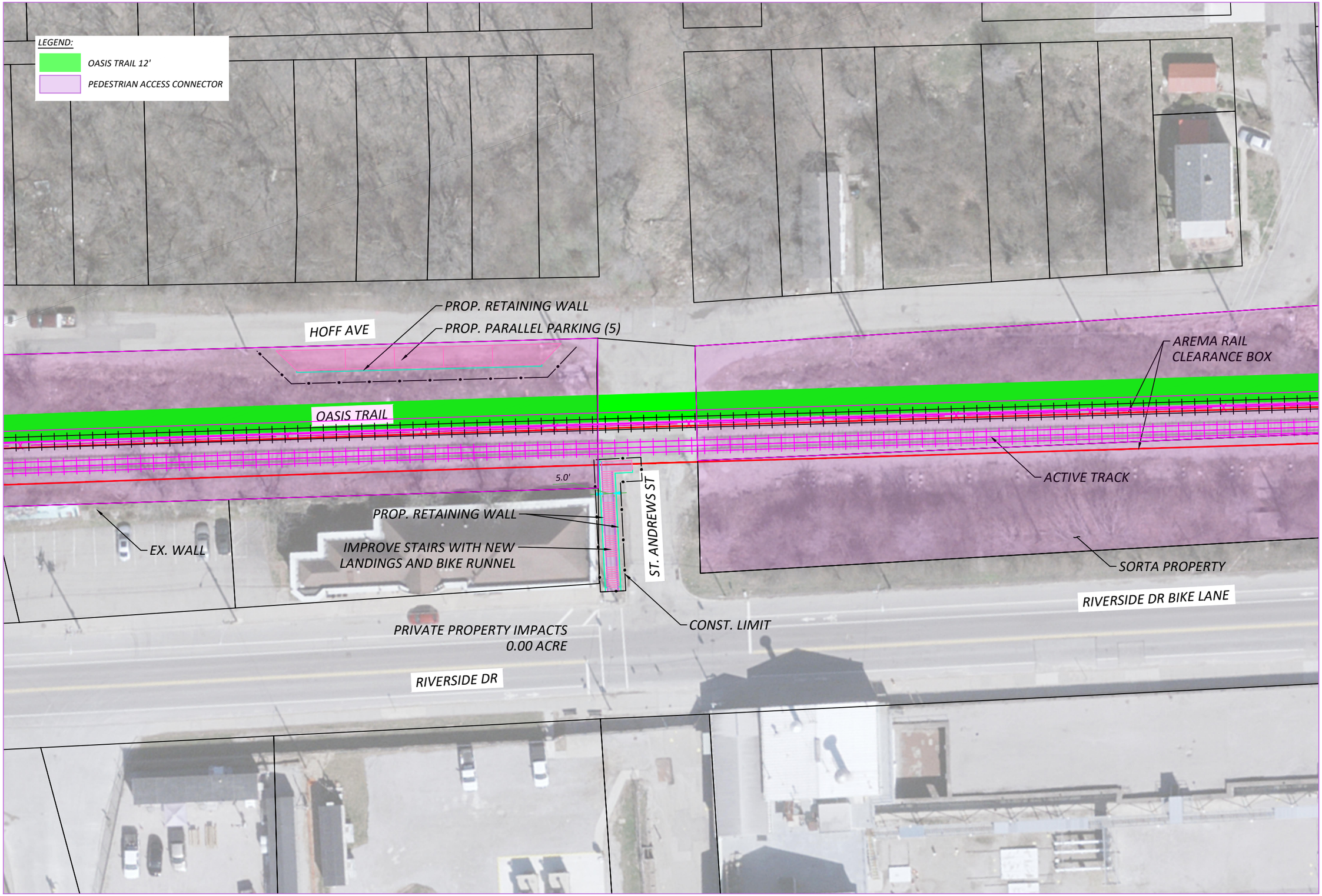

HORIZONTAL SCALE IN FEET
0 10 20 40

ST ANDREWS PEDESTRIAN ACCESS POINT
ALTERNATIVE H2

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 895-0100
www.arcadis.com

DESIGNER: XX
REVIEWER: XX MM-DD-YY
PROJECT ID: 122971
SHEET: 2 TOTAL: 2

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HORIZONTAL SCALE IN FEET
0 10 20 40

WALWORTH TUNNEL PEDESTRIAN ACCESS POINT

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 220
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 2 | TOTAL 2

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LEGEND:

- OASIS TRAIL 8' ALTERNATIVE
- OASIS TRAIL 12'
- PEDESTRIAN ACCESS CONNECTOR

PROP. REMOVE PORTION OF WALL

EX. WALL TO REMAIN

EASTERN AVE

SORTA PROPERTY

EX. BILLBOARD TO REMAIN

12.0'

12.0'

12.0'

2.0'

12.0'

12.0'

PROP. RETAINING WALL

CONST. LIMITS

PROP. FENCE

AREMA RAIL CLEARANCE BOX

ACTIVE TRACK

PRIVATE PROPERTY IMPACTS
0.00 ACRE

RIVERSIDE DR BIKE LANE

RIVERSIDE DR

HORIZONTAL SCALE IN FEET

0 10 20 40

DELTA AVENUE PEDESTRIAN ACCESS POINT

DESIGN AGENCY

ARCADIS

100 E CAMPUS VIEW BLVD SUITE 200
COLUMBUS, OHIO 43235
(614) 985-4500
www.arcadis.com

DESIGNER: XX

REVIEWER: XX MM-DD-YY

PROJECT ID: 122971

SHEET 2 | TOTAL 2

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LEGEND:

OASIS TRAIL 12'

PEDESTRIAN ACCESS CONNECTOR

EASTERN AVE

EX. WALL TO REMAIN

PROP. REMOVE PORTION OF WALL FOR TRAIL ACCESS

PROP. RETAINING WALL

CONST. LIMITS

PROP. FENCE

12.0'

12.0'

12.0'

12.0'

OASIS TRAIL

ACTIVE TRACK

AREMA RAIL CLEARANCE BOX

SORTA PROPERTY

PRIVATE PROPERTY IMPACTS
0.00 ACRE

STANLEY AVE

HORIZONTAL SCALE IN FEET

0 10 20 40

STANLEY AVENUE PEDESTRIAN ACCESS POINT

DESIGN AGENCY

ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-9100
www.arcadis.com

DESIGNER: XX

REVIEWER: XX MM-DD-YY

PROJECT ID: 122971

SHEET: 2 TOTAL: 2

####

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/22/2026 TIME: 1:46:36 PM USER: Burger, Matt
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LEGEND:

- OASIS TRAIL 12'
- PEDESTRIAN ACCESS CONNECTOR
- DETECTABLE WARNINGS

TUSCULUM AVE

EASTERN AVE

SORTA PROPERTY

EX. WALL TO REMAIN

EX. CURB RAMP TO REMAIN

PRIVATE PROPERTY IMPACTS 0.001 ACRE (1 PARCEL)

REMOVE PORTION OF EXISTING WALL

IMPACTED PRIVATE PROPERTY

12.0'

PROP. FENCE

OASIS TRAIL

ACTIVE TRACK

AREMA RAIL CLEARANCE BOX

HORIZONTAL SCALE IN FEET

0 10 20 40

TUSCULUM AVENUE PEDESTRIAN ACCESS POINT

DESIGN AGENCY

ARCADIS

100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER: XX

REVIEWER: XX MM-DD-YY

PROJECT ID: 122971

SHEET: 2 TOTAL: 2

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/22/2026 TIME: 1:47:24 PM USER: Burger, Matt
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####

LEGEND:

OASIS TRAIL 12'

PEDESTRIAN ACCESS CONNECTOR

EASTERN AVE

DONHAM ST

PRIVATE PROPERTY IMPACTS
0.00 ACRE

EX. UTILITY POLE
TO REMAIN

PROP. LIMIT OF DIST.

SORTA PROPERTY

DUMONT ST

PROP. FENCE

11.0'

3'-1/4"

11.0'

3'-3 3/4"

OASIS TRAIL

ACTIVE
TRACK

AREMA RAIL
CLEARANCE BOX

HORIZONTAL
SCALE IN FEET

0 10 20 40

DONHAM STREET PEDESTRIAN ACCESS POINT

DESIGN AGENCY

ARCADIS

100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER
XX

REVIEWER
XX MM-DD-YY

PROJECT ID
122971

SHEET 2 | TOTAL 2

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PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/22/2026 TIME: 1:48:57 PM USER: Burger, Matt
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LEGEND:

- OASIS TRAIL 12'
- PEDESTRIAN ACCESS CONNECTOR
- DETECTABLE WARNINGS
- SORTA PROPERTY BOUNDARY

Portion of fence and structure encroaching,

EX. FENCE

OASIS TRAIL

AREMA RAIL CLEARANCE BOX

PROP. FENCE

CARREL ST.

EX. FENCE

INACTIVE RAIL

TIE-IN CURB TO EX.

ACTIVE RAIL

EX. SIGNAL CABINET TO REMAIN

UTILITY POLE TO REMAIN

RAILROAD CROSSING SIGNAL TO REMAIN

UTILITY POLE TO REMAIN

12.0'

CURB TERMINATION DUMONT ST.

PROPERTY IMPACTS
0.01 ACRE (1 PARCEL)

BLENDED TRANSITION

CONST. LIMIT

12.0'

EX. FENCE

DUMONT ST.

OHIO RIVER TRAIL

HORIZONTAL SCALE IN FEET
0 8 16 32

OASIS TRAIL
CARREL ST. ACCESS POINT ALTERNATIVE K1

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 220
COLUMBUS, OHIO 43235
(614) 985-4500
www.arcadis.com

DESIGNER: TFM

REVIEWER: MJB 05-29-26

PROJECT ID: 122971

SHEET: 2 TOTAL: 2

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PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/27/2026 TIME: 11:22:50 PM USER: Mosier, Terrence
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LEGEND:

- OASIS TRAIL 12'
- PEDESTRIAN ACCESS CONNECTOR
- DETECTABLE WARNINGS
- SORTA PROPERTY BOUNDARY

TIE-IN CURB TO EX.
EXTEND EX. DRIVE
REMOVE AND RELOCATE EX. INLET
EX. FENCE
CARREL ST.
INACTIVE TRACK
RAILROAD CROSSING SIGNAL TO BE RELOCATED
ACTIVE TRACK
CURB RAMP
BLENDED TRANSITION
EX. FENCE
OASIS TRAIL
10.0'
EX. SIGNAL CABINET TO REMAIN
UTILITY POLE TO REMAIN
2.0'
10.0'
14.0'
AREMA RAIL CLEARANCE BOX
PROP. FENCE
CURB EXTENSION
UTILITY POLE TO REMAIN
PROP. RETAINING WALL WITH BIKE RAIL
DUMONT ST.
CURB RAMP
CURB TERMINATION
BLENDED TRANSITION
CONST. LIMIT
12.0'
PROPERTY IMPACTS
0.05 ACRE (1 PARCEL)
EX. FENCE
DUMONT ST.
OHIO RIVER TRAIL

HORIZONTAL SCALE IN FEET
0 8 16 32

OASIS TRAIL
CARREL ST. ACCESS POINT ALTERNATIVE K2

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4000
www.arcadis.com

DESIGNER: TFM
REVIEWER: MJB 05-29-26
PROJECT ID: 122971
SHEET: 1 TOTAL: 2

PAPERSIZE: ANSI D (34.00 x 22.00 Inches)DATE: 5/27/2026 TIME: 11:22:36 PM USER: Mosier, Terrence
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#####

Attachment E

Structure Type Studies

BURGESS & NIPLE

525 Vine Street | Suite 1300 | Cincinnati, OH 45202 | 513.579.0042

Mr. Sean Creighton, PLA, LEED AP
Project Manager
Great Parks of Hamilton County
10245 Winton Road
Cincinnati, OH 45231

Re: Great Parks of Hamilton County – Oasis Corridor
B&N Bridge Assessment – Collins Ave

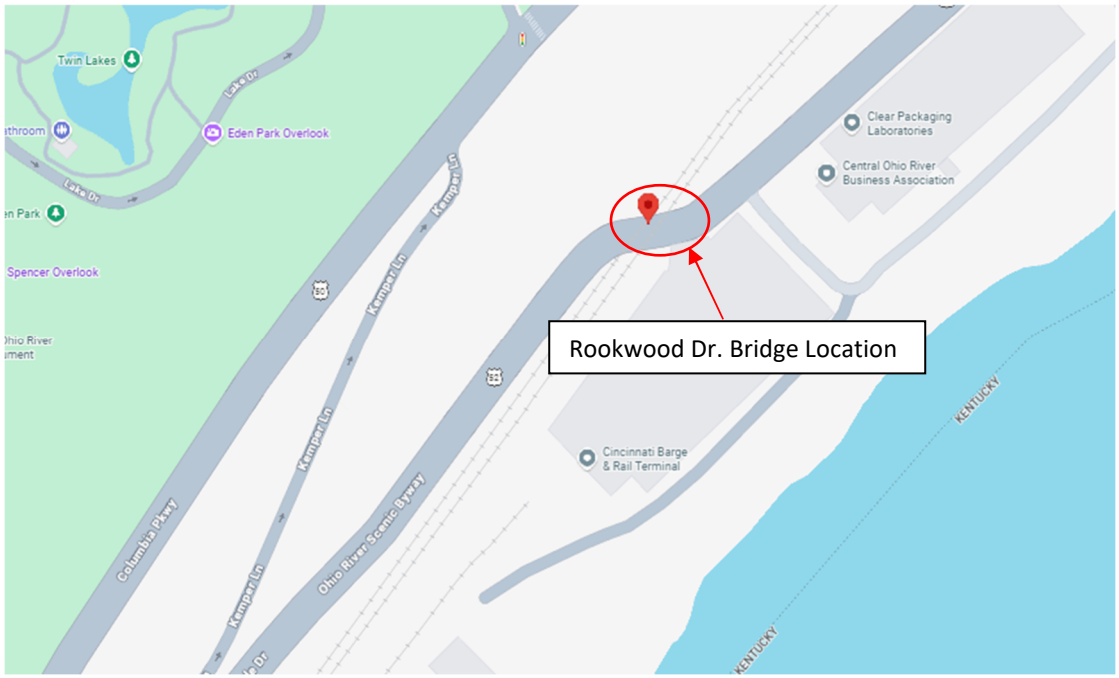
April 2, 2026

Dear Mr. Creighton:

Burgess & Niple (B&N) performed a bridge assessment of the steel twin girder bridge carrying the Indiana & Ohio RR over Rookwood Drive on January 13th & 15, 2026. The girders are numbered from left to right looking upstation (north to south). Beams and pier columns are numbered from left to right looking east. The steel pier cap and abutment bearings were inspected from a ladder. A cursory inspection of the concrete substructure elements and tracks was also completed.

The intent of this assessment is to determine areas of deficiency that need to be repaired for conversion of the north railroad track to a trail. Detailed dimensions of existing bridge members and geometry were not obtained. There are existing repair plans developed for SORTA in 2024, these areas of deficiency have designed rehabilitations already in these plans. The rehabilitations in these plans had not been constructed prior to B&N's inspection.

LOCATION MAP



Bridge Assessment:

Indiana & Ohio RR over Rookwood Drive (OH52) *(see Appendix A for deficiency table and layout)*

Deck Condition Summary:

There is no deck on this structure. The steel deck pans hold up the fill and ballast under the rails (**photos 3 & 4**).

Superstructure Condition Summary:

Bridge girders and beams have surface corrosion throughout. Multiple corrosion holes exist in the web and bearing stiffeners at all four corners (**photo 12**) (rehabilitations for these deficiencies are included in the prior mentioned plan set developed for SORTA). Corrosion is heaviest on the exterior girders bottom flanges and in the bottom of webs near the abutments (**photo 10**). Strap/splice plate on the top flange of both girders over the pier exhibit a full width crack (**photo 14**) (rehabilitations for these deficiencies are included in the prior mentioned plan set developed for SORTA). Bearing seats exhibit pack rust between the top of the bearing seat and the underside of the girders (**photo 11**).

Substructure Condition Summary:

Both abutments exhibit water staining and multiple isolated moderate width vertical and horizontal cracks (**photo 6**). The concrete crash barrier exhibits isolated major spalls at the top of the barrier (**photo 7**). Exposed portions of the steel pier columns exhibit extensive section loss to the vertical angles and batten plates (**photos 8 & 9**) (rehabilitations for these deficiencies are included in the prior mentioned plan set developed for SORTA).

Recommendations:

- Proceed with rehabilitation plans developed for SORTA in 2024.
- Replace the missing manhole cover at the northwest approach
- Remove debris from girder abutment bearing seats at all four corners.
- Abrasively clean, paint, and remove pack rust between bearing seat and underside of the girders at abutments.
- The City of Cincinnati has requested a load rating of the bridge since the structure will carry railroad loads and there is not documentation on the load carrying capacity of the bridge.

Photographs



Photo 1 – Elevation looking south.



Photo 2 – Elevation looking north.



Photo 3 – End view looking east.



Photo 4 – Looking east at the typical top of rail condition. Note: checking and some splitting throughout rail road ties.



Photo 5 – Looking north at the underside of span 1. Note: moderate surface rust throughout with isolated locations of section loss.



Photo 6 – Looking northeast at the west abutment elevation. Note: some minor to moderate width cracks to the abutment wall. Cracking is heaviest in the cap directly under the bearing seat.



Photo 7 – Looking northeast at the west face of pier 1. Note: spalling around the base of the pier columns. Concrete repairs at the base of the columns is included in the repair plans.



Photo 8 – Looking west at an overall of the east face vertical angle legs at the pier wall exhibit up to 75% section loss to angle legs over a 1” tall x full width area.



Photo 9 – Looking west at an overall of the east face vertical angle legs at the pier wall exhibit up to 75% section loss to angle legs over a 1” tall x full width area.



Photo 10 – Looking southwest at girder 1, east end. Note: heavy laminating corrosion and corrosion holes through bottom of outboard vertical stiffeners. First 3 stiffeners from end exhibit corrosion holes up to 5” tall, full width.



Photo 11 – Looking west at west abutment steel bearing seat under floor beam 15. Note: pack rust up to 1” thick causing deformation to bottom flange



Photo 12 – Looking southwest at girder 1 at the west abutment. Note: heavy soil and debris accumulation. Active pitting, 1/16” average, to girder web and bearing stiffeners.



Photo 13 – Looking south at the open manhole at the southwest approach.



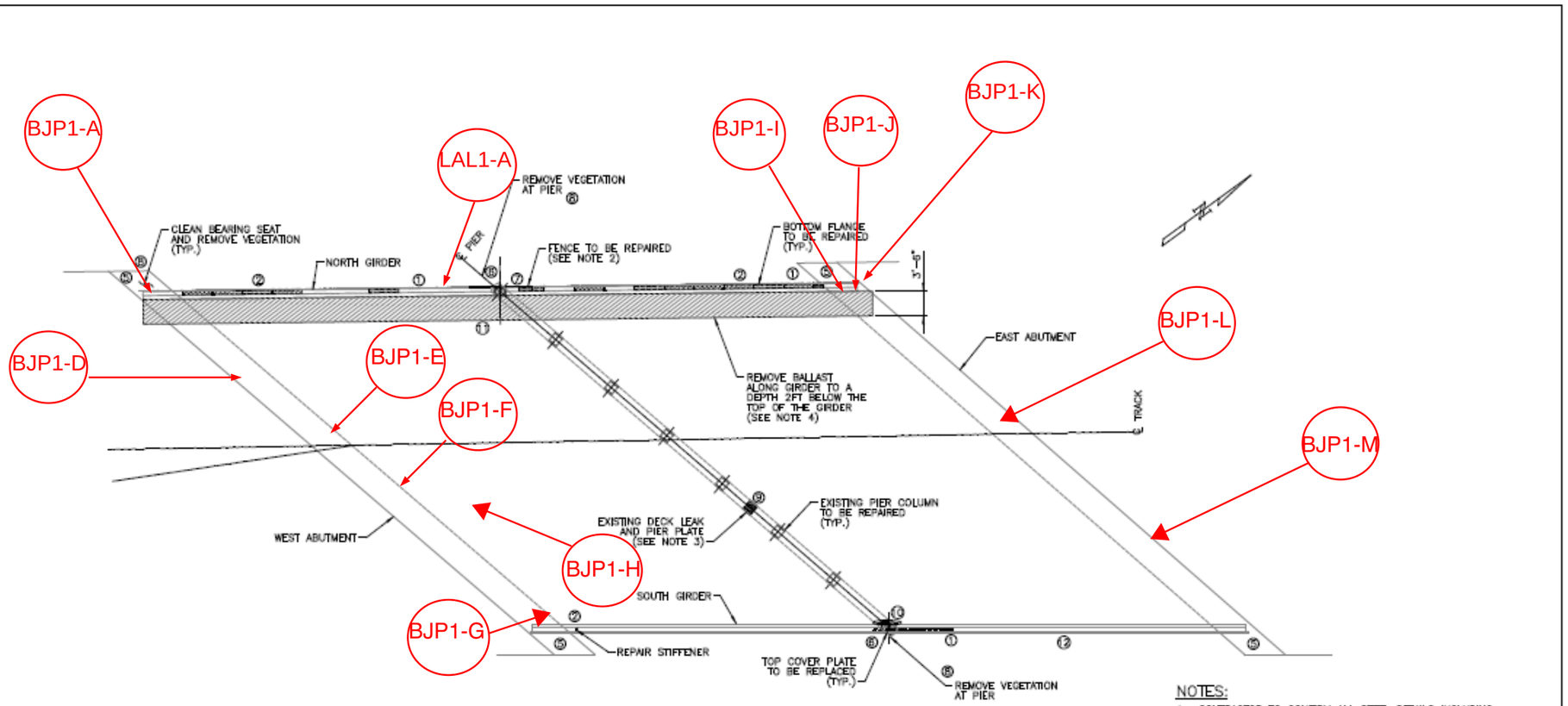
Photo 14 – Looking northwest at top flange strap/splice plate at midspan of girder 1. Note: full width crack in plate. Similar at same location, girder 2. Appears intentional.

Appendix A: Deficiency Table

Photo	Call Out #	Comment
BJP1-1	1-BJP-A	Girder 1 at the west abutment. Note: heavy soil and debris accumulation. Active pitting, 1/16" average, to girder web and bearing stiffeners.
BJP1-3	1-BJP-B	Girder 1 bearing at the west abutment. Note: heavy soil and debris accumulation. Active pitting, 1/16" average, to bearing assembly.
BJP1-4	1-BJP-C	Girder 1, span 1 from the west abutment. Note: typical through hole section loss to web stiffeners.
BJP1-5	1-BJP-D	North end of west abutment bearing seat adjacent to girder 1. Pack rust up to 1" thick between built up plates causing top flange to be distorted. Corrosion holes through some vertical stiffeners.
BJP1-6	1-BJP-E	West abutment steel bearing seat between floor beams 9-10. Note: pack rust up to 1" thick causing deformation to bottom flange.
BJP1-7	1-BJP-F	West abutment steel bearing seat under floor beam 15. Note: pack rust up to 1" thick causing deformation to bottom flange.
BJP1-9	1-BJP-G	Girder 2 bearing at the west abutment. Note: heavy soil and debris accumulation. Active pitting, 1/16" average, to girder web and bearing stiffeners.
BJP1-11	1-BJP-H	West abutment and southwest wingwall. Note: wide transverse cracks some with efflorescence, abutment are generally sound. Heavier efflorescence along wingwalls.
BJP1-13	1-BJP-I	Girder 1, east end. Note: heavy laminating corrosion and corrosion holes through bottom of outboard vertical stiffeners. First 3 stiffeners from end exhibit corrosion holes up to 5" tall, full width.
BJP1-16	1-BJP-J	East end of girder 1, outboard face. Note: 1/16" average pitting along bottom 12" of girder web. Bottom flange exhibits laminating corrosion throughout with up to 1/16" section loss.
BJP1-17	1-BJP-K	North end of the steel bearing seat at the east abutment. Note: end stiffener exhibits 100% section loss. Pack rust up to 1" exists between built up sections causing distortion.
BJP1-20	1-BJP-L	East abutment beam seat between floor beams 27 and 29. Note: heavy section loss up to through holes along top flange of bearing seat. Heavy laminating corrosion along bottom flange. Underside of floor beam 28 exhibits 16" section loss full width of bottom flange. Area of likely water intrusion.
BJP1-24	1-BJP-M	Floor beam 39 at the east abutment Note: pack rust up to 1 1/2" between floor beam bottom flange and bearing seat. Common along floor beams 37-41.
LAL1-6	1-LAL-A	Typical floorbeam to south girder connection condition. West side of floorbeam 26 shown. Girders and beam end show heavy surface corrosion with negligible section loss.
LAL1-8	1-LAL-B	Overall of the north nose of the concrete pier wall. Note: multiple scrapes and impact damage along with adjacent shallow spalling and scaling.
LAL1-9	1-LAL-C	Overall of the bottom of the pier columns at the pier wall.

LAL1-10	1-LAL-D	Pier 1, column 2 west face at pier wall has up to 1/8” section loss to angle legs and batten plate. Adjacent pier wall cover concrete is spalled. This defect is included in the upcoming repair project.
LAL1-12	1-LAL-E	Pier 1, column 6, west face at pier wall exhibits heavy section loss including up to 1/8” loss over a 1/2” tall x full width section loss at the column to pier wall interface to column web. The angle legs exhibit up to 1/8” section loss over a 1/2” tall area.
LAL1-14	1-LAL-F	Pier 1, column 8, west face at pier wall exhibits heavy section loss including up to full loss to vertical angle legs at the column to pier wall interface.
LAL1-24	1-LAL-G	Overall of the 3SF area of delaminated concrete below the east face of column 5 of pier 1.
LAL1-25	1-LAL-H	Overall of the east face vertical angle legs at the pier wall exhibit up to 75% section loss to angle legs over a 1” tall x full width area.

***47 total floorbeams numbered from left to right looking east



PLAN
SCALE: 1/8" = 1'-0"

NOTES:

1. CONTRACTOR TO CONFIRM ALL STEEL DETAILS INCLUDING DIMENSIONS BEFORE FABRICATION.
2. SORTA TO PROVIDE FENCING, CONTRACTOR TO INSTALL THE FENCING WHERE SHOWN. CONTRACTOR MIGHT HAVE TO MODIFY THE FENCING TO INSTALL. CONTACT THE OWNER FOR DIRECTION.
3. CONTRACTOR TO INSTALL PIER PLATE TO TOP FLANGE OF CROSS GIRDER.
4. APPROVAL FROM RAILROAD MUST BE ACQUIRED.

REPAIR 01:	INSTALL BOTTOM FLANGE PLATE
REPAIR 02:	INSTALL STIFFENERS ANGLE
REPAIR 03:	INSTALL STEEL COLUMNS PLATE
REPAIR 04:	PATCH SPALLED CONCRETE
REPAIR 05:	CLEAN BEARING SEATS
REPAIR 06:	REPLACE TOP FLANGE PLATE
REPAIR 07:	REPLACE MISSING FENCING SECTIONS
REPAIR 08:	REMOVE FLORA
REPAIR 09:	PIER PLATE
REPAIR 10:	PATCH CONCRETE ON INSIDE FACE OF THE TPG
REPAIR 11:	REMOVE BALLAST AND PROVIDE BLOCKING AT BACKWALL
REPAIR 12:	BLAST CLEAN AND PAINT STEEL

CONSTRUCTION PLAN SET

HDR
FILE: NO. 3105733-GP01.dgn

ENGINEERING DEPARTMENT
CINCINNATI, OHIO

REVISIONS

BRIDGE NO. 3105733 CROSSING
RIVERSIDE DRIVE
GENERAL PLAN

HAMILTON COUNTY — CINCINNATI, OH
ZONE: — SUBDIVISION:

SCALE: AS SHOWN
DATE: 08/20/2024
DESIGN: RCV
DRAWN: NME
CHECKED: JH

VAL. SEC. V—

DRAWING NO. NO. 3105733-07

PLOTTED: 8/20/2024 10:48:37 AM By: Nathan.Mensendiek
FILENAME: c:\pwworking\cdata01\d0376\dgn\3105733-GP01.dgn

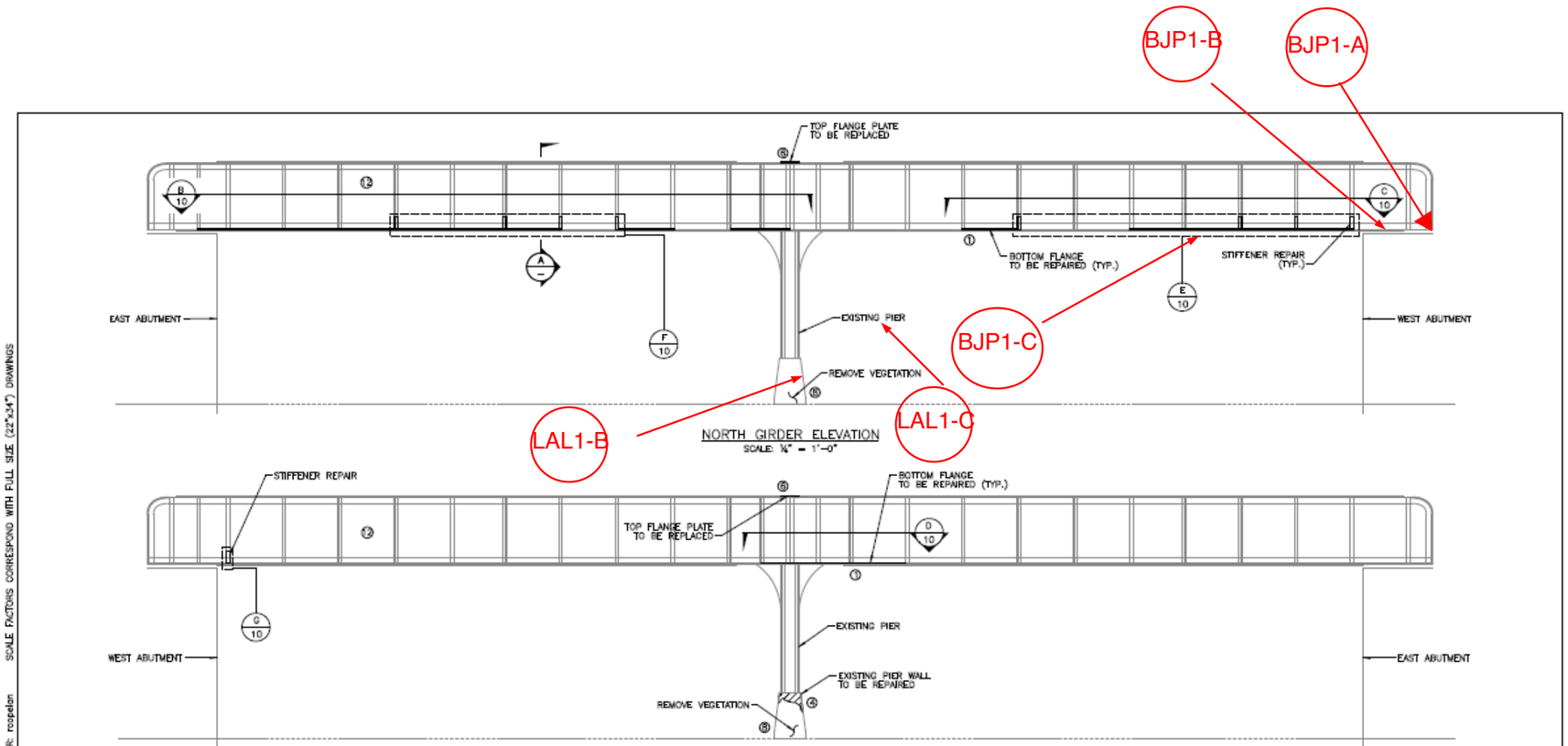
BURGESS & NIPLE

ROOKWOOD BRIDGE OVER RIVERSIDE DRIVE

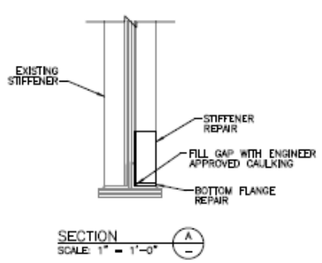
CLIENT:
OASIS TRAIL

INSPECTED BY
DATE

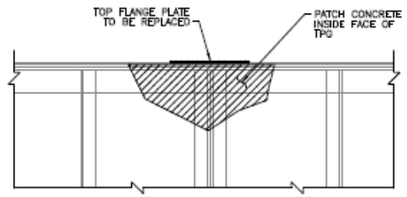
PAGE OF



REPAIR 01:	INSTALL BOTTOM FLANGE PLATE
REPAIR 02:	INSTALL STIFFENERS ANGLE
REPAIR 03:	INSTALL STEEL COLUMNS PLATE
REPAIR 04:	PATCH SPALLED CONCRETE
REPAIR 05:	CLEAN BEARING SEATS
REPAIR 06:	REPLACE TOP FLANGE PLATE
REPAIR 07:	REPLACE MISSING FENCING SECTIONS
REPAIR 08:	REMOVE FLORA
REPAIR 09:	PIER PLATE
REPAIR 10:	PATCH CONCRETE ON INSIDE FACE OF THE TPG
REPAIR 11:	REMOVE BALLAST AND PROVIDE BLOCKING AT BACKWALL
REPAIR 12:	BLAST CLEAN AND PAINT STEEL



SECTION
SCALE: 1" = 1'-0"



SOUTH GIRDER – INSIDE FACE OF TPG
SCALE: 1" = 1'-0"
SEE SHEET 12 FOR INSTRUCTIONS

NOTES:
1. CONTRACTOR TO CONFIRM ALL STEEL DETAILS INCLUDING DIMENSIONS BEFORE FABRICATION.
2. CONTRACTOR TO REMOVE DEBRIS, OIL, DELAMINATED STEEL, PACK RUST, AND OTHER LATENT MATERIAL BEFORE INSTALLING PROPOSED STEEL. SOLID SEATING OF PARTS AND COMPLETE FRICTION CONTACT MUST BE ACHIEVED.

CONSTRUCTION PLAN SET

FILE: NO. 3105733-GP02.dgn

ENGINEERING DEPARTMENT
CINCINNATI, OHIO

REVISIONS

BRIDGE NO. 3105733 CROSSING
RIVERSIDE DRIVE
GENERAL ELEVATIONS

HAMILTON COUNTY — CINCINNATI, OH
ZONE: — SUBDIVISION:
SCALE: AS SHOWN
DATE: 08/20/2024
DESIGN: RCV
DRAWN: NME
CHECKED: JH
VAL. SEC. V–
DRAWING NO. NO. 3105733-08

FILENAME: c:\pwworking\cest01\d3776837\NO. 3105733-GP02.dgn
USER: rospelam
SCALE FACTORS CORRESPOND WITH FULL SIZE (22"x34") DRAWINGS

###-# Note

Spall Delam Patch Cracks Crack

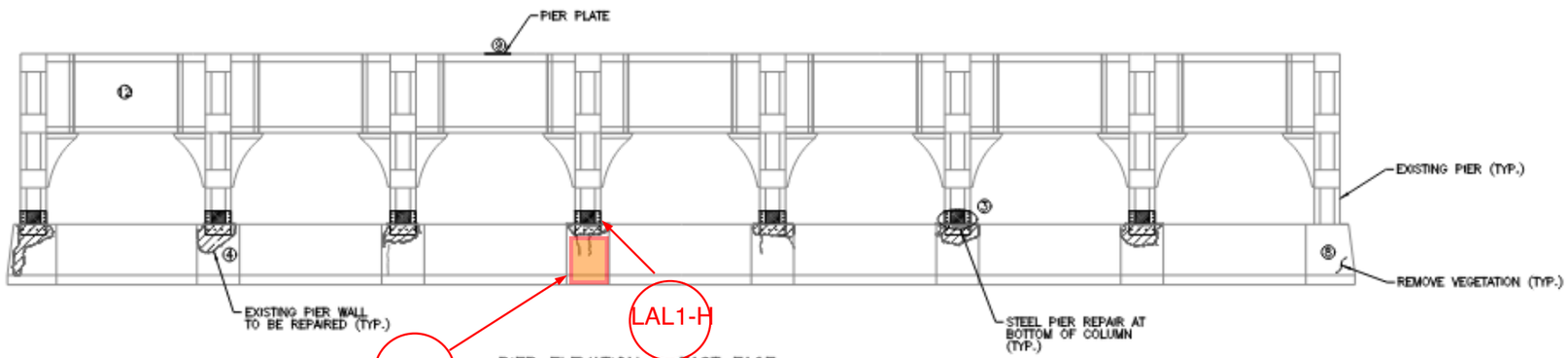
BURGESS & NIPLE

ROOKWOOD BRIDGE OVER RIVERSIDE DRIVE

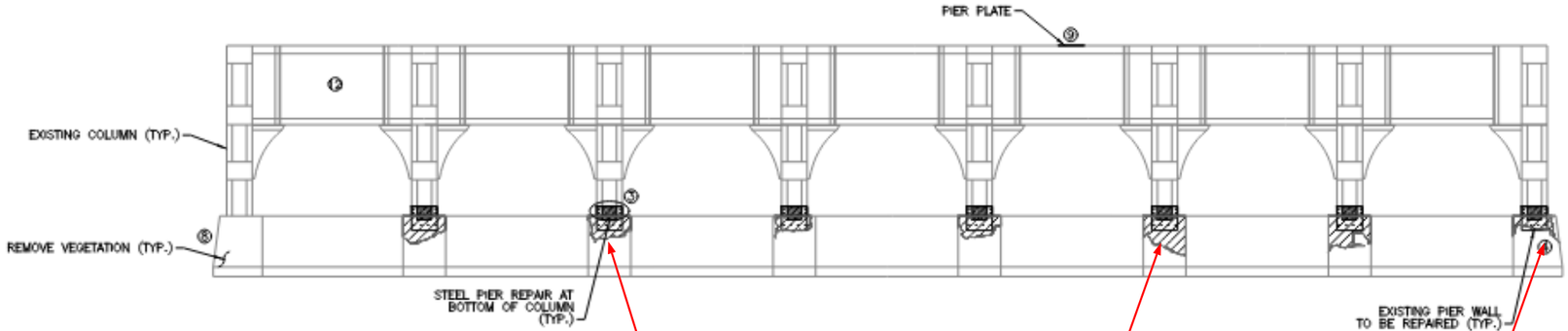
CLIENT:

OASIS TRAIL

INSPECTED BY
DATE
PAGE OF



PIER ELEVATION – EAST FACE
SCALE: ¼" = 1'-0"
SUPERSTRUCTURE NOT SHOWN FOR CLARITY



PIER ELEVATION – WEST FACE
SCALE: ¼" = 1'-0"
SUPERSTRUCTURE NOT SHOWN FOR CLARITY

REPAIR 03: INSTALL STEEL COLUMNS PLATE
REPAIR 04: PATCH SPALLED CONCRETE
REPAIR 08: REMOVE FLORA
REPAIR 09: PIER PLATE
REPAIR 12: BLAST CLEAN AND PAINT STEEL

NOTES:
1. CONTRACTOR TO CONFIRM ALL STEEL DETAILS INCLUDING DIMENSIONS BEFORE FABRICATION

SORTA Southwest Ohio Regional Transit Authority
ENGINEERING DEPARTMENT
CINCINNATI, OHIO

REVISIONS

BRIDGE NO. 3105733 CROSSING
RIVERSIDE DRIVE
COLUMN ELEVATIONS
HAMILTON COUNTY CINCINNATI, OH
ZONE: SUBDIVISION:

SCALE: AS SHOWN	VAL. SEC.	DRAWING NO.
DATE: 08/20/2024	V–	NO. 3105733-09
DESIGN: RCV		
DRAWN: NME		
CHECKED: JH		

HDR ENGINEERING, INC.
FILE: NO. 3105733-GP03.dgn

CONSTRUCTION PLAN SET

FILENAME: c:\pwworking\eas801\d3776837\NO. 3105733-GP03.dgn USER: nendeshaw SCALE FACTORS CORRESPOND WITH FULL SIZE (22"x34") DRAWINGS

###-# Note

Spall Delam Patch Cracks Crack

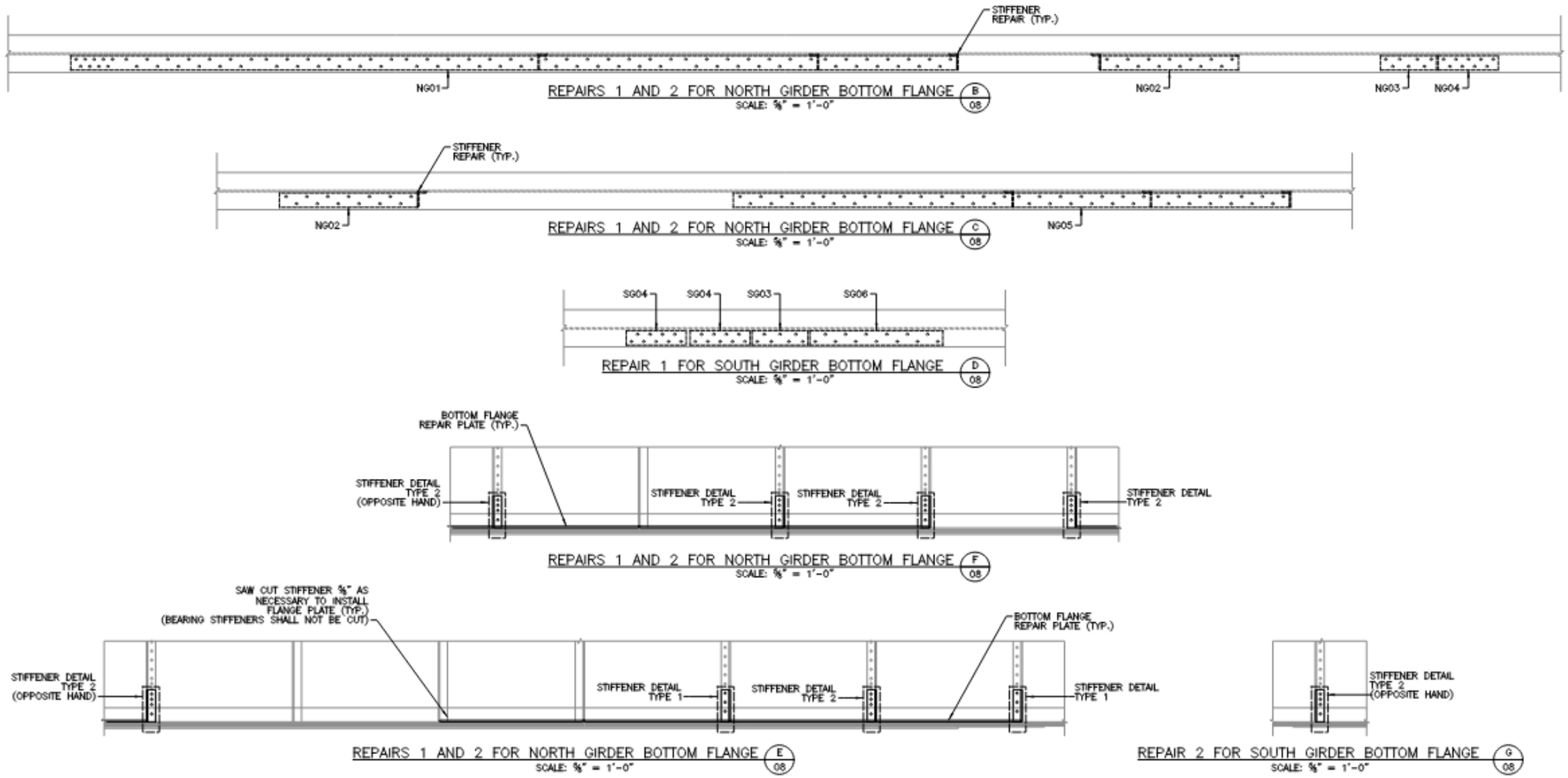
BURGESS & NIPLE

ROOKWOOD BRIDGE OVER RIVERSIDE DRIVE

CLIENT:

OASIS TRAIL

INSPECTED BY
DATE
PAGE OF



REPAIRS 1 AND 2 FOR NORTH GIRDER BOTTOM FLANGE (B/08)
SCALE: 5/8" = 1'-0"

REPAIRS 1 AND 2 FOR NORTH GIRDER BOTTOM FLANGE (C/08)
SCALE: 5/8" = 1'-0"

REPAIR 1 FOR SOUTH GIRDER BOTTOM FLANGE (D/08)
SCALE: 5/8" = 1'-0"

REPAIRS 1 AND 2 FOR NORTH GIRDER BOTTOM FLANGE (F/08)
SCALE: 5/8" = 1'-0"

REPAIRS 1 AND 2 FOR NORTH GIRDER BOTTOM FLANGE (E/08)
SCALE: 5/8" = 1'-0"

REPAIR 2 FOR SOUTH GIRDER BOTTOM FLANGE (G/08)
SCALE: 5/8" = 1'-0"

NOTES:

1. CONTRACTOR TO CONFIRM ALL STEEL DETAILS INCLUDING DIMENSIONS BEFORE FABRICATION

CONSTRUCTION PLAN SET

HDR ENGINEERING, INC.
FILE: NO. 3105733-GD01.dgn

SORTA Southwest Ohio Regional Transit Authority
ENGINEERING DEPARTMENT
CINCINNATI, OHIO

REVISIONS

BRIDGE NO. 3105733 CROSSING
RIVERSIDE DRIVE

GIRDER REPAIR DETAILS

HAMILTON COUNTY — CINCINNATI, OH

ZONE: — SUBDIVISION:

SCALE: AS SHOWN	VAL. SEC.	DRAWING NO.
DATE: 08/20/2024	V–	NO. 3105733-10
DESIGN: RCV		
DRAWN: JL		
CHECKED: JH		

FILENAME: c:\pwworking\east01\d3776837\NO. 3105733-GD01.dgn USER: nendeshaw SCALE FACTORS CORRESPOND WITH FULL SIZE (22"x34") DRAWINGS

BURGESS & NIPLE

ROOKWOOD BRIDGE OVER RIVERSIDE DRIVE

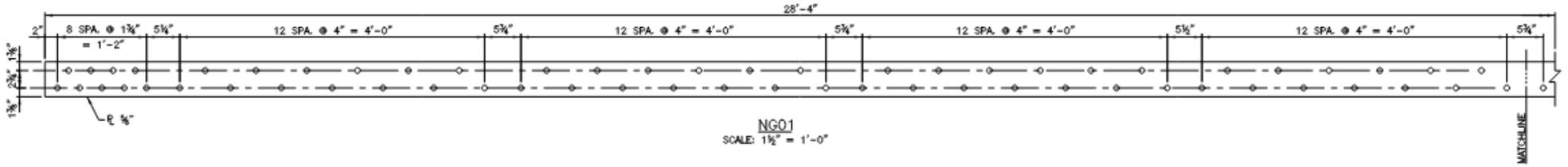
CLIENT:

OASIS TRAIL

INSPECTED BY

DATE

PAGE OF



NG01
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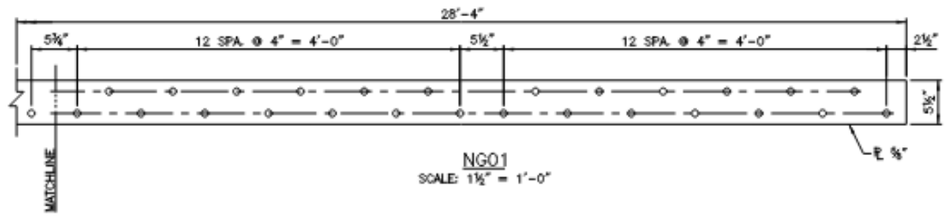

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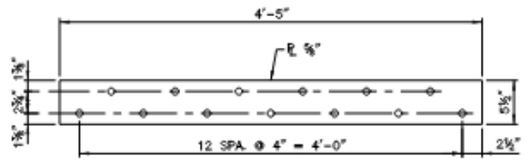

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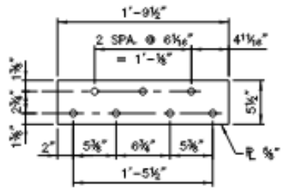
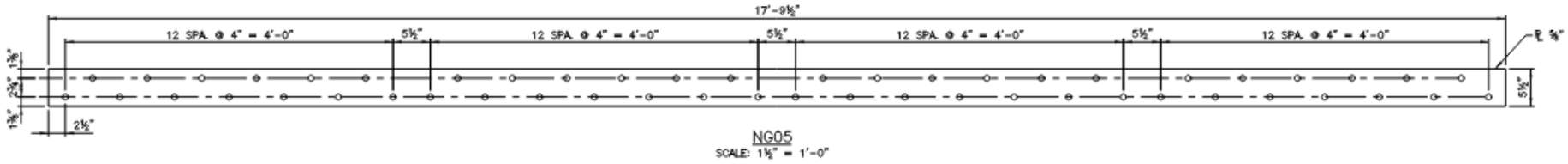


NG03
SCALE: 1½" = 1'-0"
NG03 SHOWN, SG03 SAME



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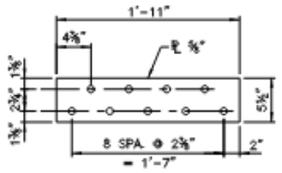
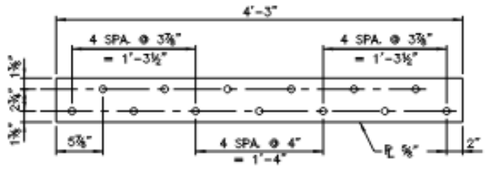
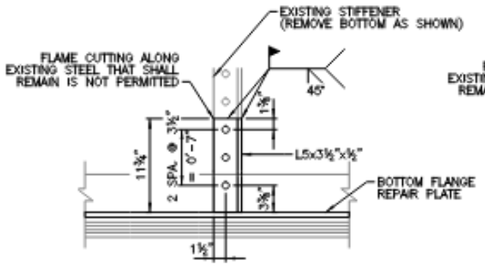
SCALE: 1½" = 1'-0"



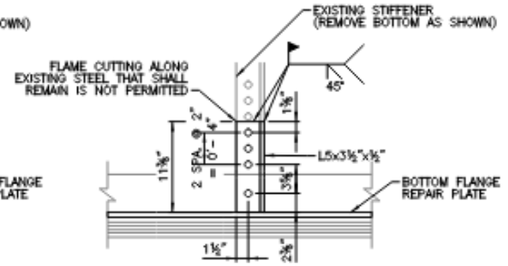
NG04
SCALE: 1½" = 1'-0"
NG04 SHOWN, SG04 SAME



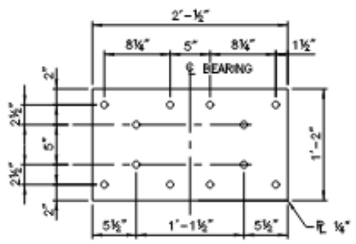
SG06
SCALE: 1½" = 1'-0"



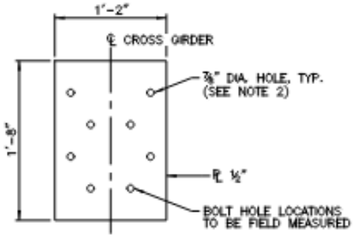
STIFFENER DETAIL – TYPE 1
SCALE: 1½" = 1'-0"



STIFFENER DETAIL – TYPE 2
SCALE: 1½" = 1'-0"



TOP FLANGE PLATE
SCALE: 1½" = 1'-0"



PIER PLATE PLAN
SCALE: 1½" = 1'-0"

NOTES:

1. CONTRACTOR TO CONFIRM ALL STEEL DETAILS INCLUDING DIMENSIONS AND RIVET HOLE DIAMETER BEFORE FABRICATION.
2. CONTRACTOR TO REMOVE RIVETS AND FIELD DRILL HOLES AS NECESSARY TO ATTACH PLATE TO CROSS GIRDER TOP FLANGE AT DECK LEAK LOCATION.

SORTA Southwest Ohio Regional Transit Authority
ENGINEERING DEPARTMENT
CINCINNATI, OHIO

REVISIONS

BRIDGE NO. 3105733 CROSSING
RIVERSIDE DRIVE

STEEL REPAIR DETAILS

HAMILTON COUNTY — CINCINNATI, OH
ZONE: — SUBDIVISION:

SCALE: AS SHOWN	VAL. SEC.	DRAWING NO.
DATE: 08/20/2024	V–	NO. 3105733-11
DESIGN: RCV		
DRAWN: JL		
CHECKED: JH		

HDR ENGINEERING, INC.
8909 CLEVELAND ROAD SUITE 210
CINCINNATI, OHIO 45242
513.984.1600

FILE: NO. 3105733-SD01.dgn

CONSTRUCTION PLAN SET

FILENAME: c:\jobworking\east01\d3776837\NO. 3105733-SD01.dgn USER: rcopelan SCALE FACTORS CORRESPOND WITH FULL SIZE (22"x34") DRAWINGS

BURGESS & NIPLE

ROOKWOOD BRIDGE OVER RIVERSIDE DRIVE

CLIENT:

OASIS TRAIL

INSPECTED BY
DATE
PAGE OF

BURGESS & NIPLE

525 Vine Street | Suite 1300 | Cincinnati, OH 45202 | 513.579.0042

Mr. Sean Creighton, PLA, LEED AP
Project Manager
Great Parks of Hamilton County
10245 Winton Road
Cincinnati, OH 45231

Re: Great Parks of Hamilton County – Oasis Corridor
B&N Bridge Assessment – Collins Ave

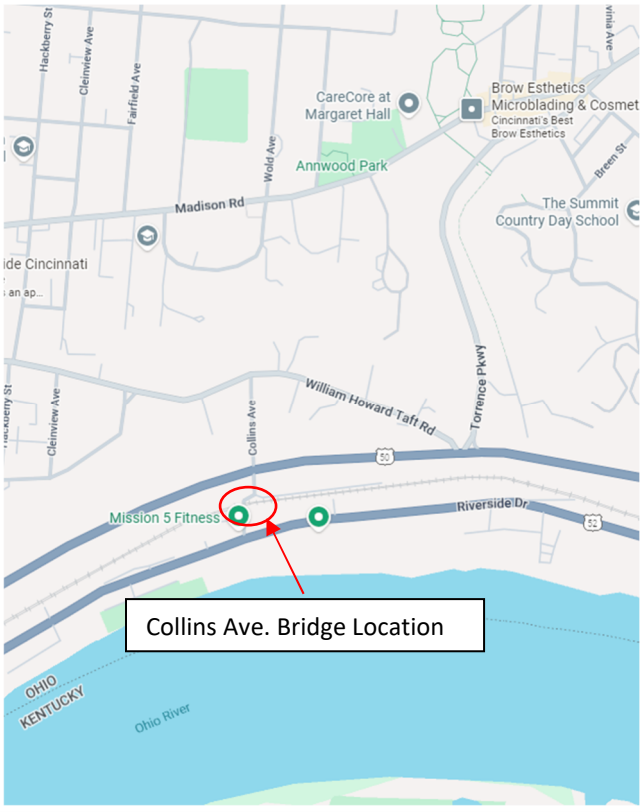
April 2, 2026

Dear Mr. Creighton:

Burgess & Niple (B&N) performed a bridge assessment of the thru girder bridge carrying the Indiana & Ohio RR over Collins Ave on January 13th & 15, 2026. The assessment focuses on the north half of the superstructure under the inactive tracks; this includes girders 1 & 2. Girders are numbered from left to right looking east (up station). A cursory inspection of the substructure and tracks was also completed.

The intent of this assessment is to determine areas of deficiency that need to be repaired for conversion of the north railroad track to a trail. Detailed dimensions of existing bridge member and geometry were not obtained.

LOCATION MAP



Bridge Assessment:

Indiana & Ohio RR over Collins Ave., SFN 3160300

Summary:

Widespread painted over section loss, up to 1/8" deep, exists to the bottom flanges and the bottom 4" of the web on girders, floorbeams, and stringers. Section loss is heaviest on the end 5' of girders near the abutments. Heavy painted over section loss exists to the bottom flange of floorbeam 0 with up to 25% section loss. Multiple corrosion holes exist in the bottom of girder stiffeners and in the web of girder 1. Girder 2 (middle girder) exhibits isolated locations of painted over section loss up to 1/8" deep. Girder 2 is generally in better condition than girder 1.

Corrosion holes in girder 1 exist at the following locations:

Girder	Bridge Location	Corrosion hole dimension	Photos
Girder 1	East end girder web between 2nd and 3rd stiffeners from east abutment.	4 ½" x 1 ½"	Photos 9 & 10
Girder 1	East end girder web between 2nd and 3rd stiffeners from east abutment.	2 ½" x 1 ½"	Photo 10
Girder 1	East end girder web between 3rd and 4th stiffeners from east, adjacent to 4th stiffener.	½" diameter	Photo 11
Girder 1	West end girder web over west abutment bearing.	4" x 4" with two adjacent ½" diameter through holes	Photo 12
Girder 1	West end girder web adjacent to the 3rd stiffener from west end.	1 ¼" diameter	Photo 13
Girder 1	West end girder web adjacent from the 4th stiffener from west end	7" wide x 4" tall	Photo 14

Recommendations:

- If reused, existing railroad ties should be assessed for deficiencies, including rot, checking and splits which may affect strength and serviceability of the bridge.
- Areas of girder, floorbeam, and stringer web section loss should be monitored. If corrosion does reinitiate, additional welded steel plates should be added in the high shear areas at abutments.
- Clearance signs and headache bars should be added below and/or on Collins Avenue north and south of the bridge to deter over height vehicles from driving below the bridge.
- The City of Cincinnati has requested a load rating of the existing structure that is planned to remain in place and carry railroad live load because there is no information on the load carrying capabilities of the bridge.

Photographs



Photo 1 – Elevation looking north.



Photo 2 – Elevation looking southwest.



Photo 3 – End view looking west.



Photo 4 – End view looking east. Note: large amounts of debris and old railroad ties piled at west end.



Photo 5 – Looking west at the typical underside between girders 1 and 2. Note: one missing and one bent lower lateral bracing bar.



Photo 6 – Looking southeast at the east abutment. Note: moderate abrasion on the north end of the east abutment. Multiple moderate width horizontal cracks in the north end with minor efflorescence.



Photo 7 – Looking west at the west abutment. Note: minor algae growth on the bottom half of the abutment wall under girder 1.



Photo 8 – Looking south at the missing lower lateral bracing bar in bays 1-2.



Photo 9 – Looking southeast at the outboard face of girder 1 at east end between the 2nd and 3rd stiffeners from east. Note: 4 1/2 inch x 1 1/2-inch and 2 1/2 inches x 1 1/2 inch through hole in web plate with adjacent pitting down to knife edge.



Photo 10 – Looking southeast at the outboard face of girder 1 at east end between the 2nd and 3rd stiffeners from east. Note: 4 1/2” x 1 1/2” and 2 1/2" x 1 1/2" through hole in web plate with adjacent pitting down to knife edge.



Photo 11 – Looking south at outboard face of girder 1 at east end between 3rd and 4th stiffeners from east, adjacent to 4th stiffener. Note: 1/2” diameter corrosion hole through web with adjacent 1/8” deep painted over pitting.



Photo 12 – Looking south at outboard face of girder 1 at the west abutment. Note: 4” x 4” painted over through hole in web plate between the first and second web stiffener from the end.



Photo 13 – Looking south at outboard face of girder 1 adjacent to 3rd stiffener from end. Note: 1 1/4” painted over corrosion hole on web.



Photo 14 – Looking south at outboard face of girder 1 adjacent to 4th stiffener from west end. Note: 7” wide x up to 4” tall painted over through hole in web plate adjacent to stiffener.



Photo 15 – Looking southeast at the outboard face of girder 1 bottom flange angle at east half of girder. Note: 1/8” average, 3/8” max painted over pitting along bottom flange angle. All bottom flange angle rivets exhibit painted over section loss, half of which are 50% or greater.



Photo 16 – Looking southwest at the outboard face of girder 1 bottom flange angle at east half of girder. Note: 1/8” average, 3/8” max painted over pitting along bottom flange angle. All bottom flange angle rivets exhibit painted over section loss, half of which are 50% or greater.



Photo 17 – Looking west at the bottom flange of girder near mid-span. Note: Multiple impact scrapes and gouges along bottom flange plates. Minor deformation of bottom flange.



Photo 18 – Looking northwest at the inboard face of girder 1. Note: Inboard face of girder 1 bottom flange angle. 1/8” average, 3/8” max painted over pitting along bottom flange angle. All bottom flange angle rivets exhibit painted over section loss, half of which are 50% or greater.



Photo 19 – Looking southwest at stringer 3 in floor beam bay 2-3. Note: Widespread 1/16” deep painted over pitting along bottom 4” of web.



Photo 20 – Looking southwest at East face of floor beam 2 between stringers 2 and 3. Note: Typical 1/16” deep painted over pitting along bottom 4” of web and bottom flange angles.

Appendix A: Deficiency Table

Photo #	Call Out #	Comment
BJP1-26	BJP-A	4 1/2” x 1 1/2” and 2 1/2” x 1 1/2” through hole in web plate with adjacent pitting down to knife edge.
BJP1-28	BJP-B	1/8” average, 3/8” max painted over pitting along bottom flange angle. All bottom flange angle rivets exhibit painted over section loss, half of which are 50% or greater.
BJP1-31	BJP-C	1/2” diameter corrosion hole through web with adjacent 1/8” deep painted over pitting.
BJP1-32	BJP-D	Most/all vertical stiffeners exhibit large painted over through holes along bottom 7” of stiffener. Similar on inboard face.
BJP1-33	BJP-E	Multiple impact scrapes and gouges along bottom flange plates. Minor deformation of bottom flange.
BJP1-36	BJP-F	Inboard face of girder 1 bottom flange angle. 1/8” average, 3/8” max painted over pitting along bottom flange angle. All bottom flange angle rivets exhibit painted over section loss, half of which are 50% or greater.
BJP1-37	BJP-G	Missing one lower lateral bracing bar.
BJP1-38	BJP-H	Typical 1/16” deep painted over pitting along bottom 4” of web.
BJP1-39	BJP-I	Typical 1/16” deep painted over pitting along bottom 4” of web and bottom flange angles.
BJP1-40	BJP-J	Thru holes along base of vertical stiffeners repaired with welded angles.
BJP1-42	BJP-K	Painted over thru hole in stiffener adjacent to floor beam 1.
BJP1-46	BJP-L	Corrosion hole through base of stiffener, typical 1/16” painted over pitting along bottom flange angle.
BJP1-47	BJP-M	Typical 1/16” painted over pitting along stringer web.
BJP1-48	BJP-N	Painted over pitting along bottom flange, 25% section loss to be plates (knife edging at edges). 1/16-1/8” painted over pitting along upstanding leg of bottom flange angle.
BJP1-50	BJP-O	4” x 4” painted over through hole in web plate between the first and second web stiffener from the end. Two 1/2” diameter painted over through holes on east side of second stiffener with adjacent 1/8” deep average painted over pitting along bottom 10” of web/bottom flange angle.
BJP1-51	BJP-P	1 1/4” painted over corrosion hole on web.
BJP1-52	BJP-Q	7” wide x up to 4” tall painted over through hole in web plate adjacent to stiffener.
BJP1-53	BJP-R	Outstanding leg for bottom flange angle is essentially gone due to previous section loss.

SCALE FACTORS CORRESPOND WITH FULL SIZE (22"x34") DRAWINGS

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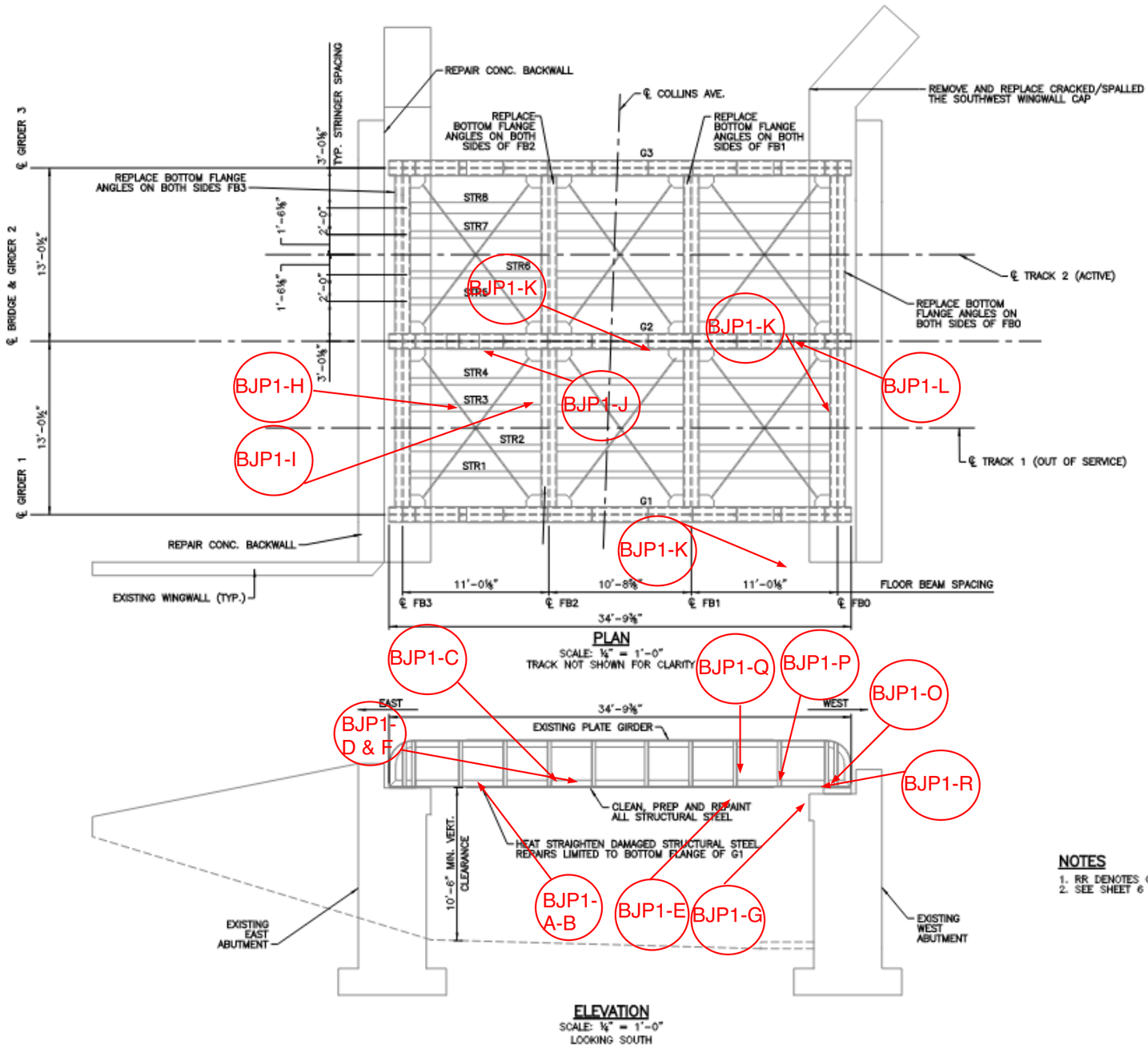


NOTES
1. RR DENOTES GENESEE & WYOMING RAILROAD
2. SEE SHEET 6 FOR STEEL AND CONCRETE REPAIR DETAILS

FINAL CONTRACT PLANS

###-# Note →

HDR ENGINEERING, INC.
9987 CARVER ROAD, SUITE 370
CINCINNATI, OHIO 45242
513-984-7500

DESIGN: CHH DATE 7/25/20
DRAWN: TS DATE 7/25/20
CHECKED: JSW DATE 7/25/20

GENERAL PLAN AND ELEVATION

BRIDGE MP 2.58
CROSSING COLLINS AVENUE
INDIANA AND OHIO RAILROAD CORP. OASIS LINE

4
7

BURGESS & NIPLE

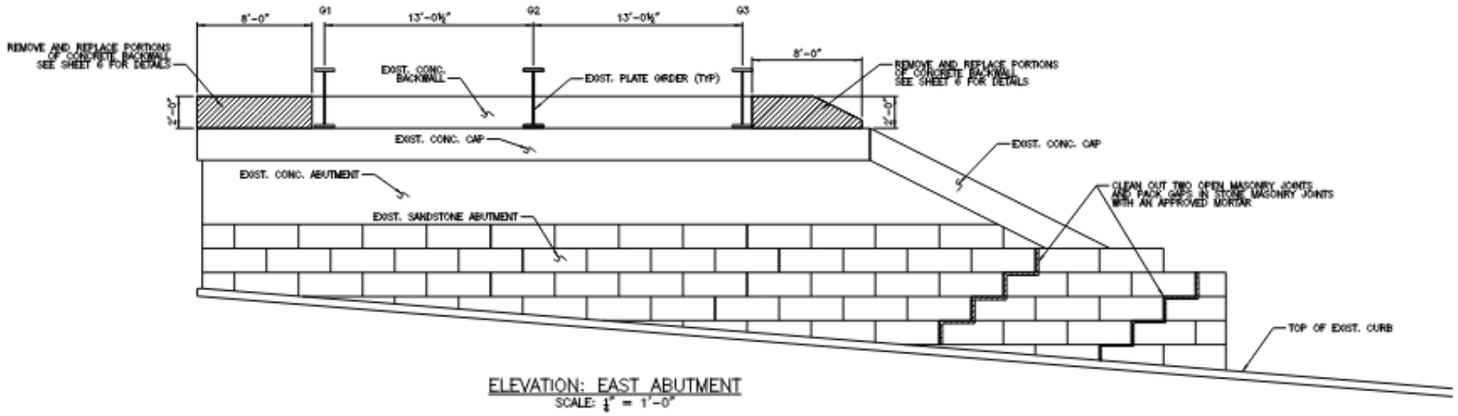
MP 2.58 BRIDGE OVER COLLINS AVENUE

CLIENT:

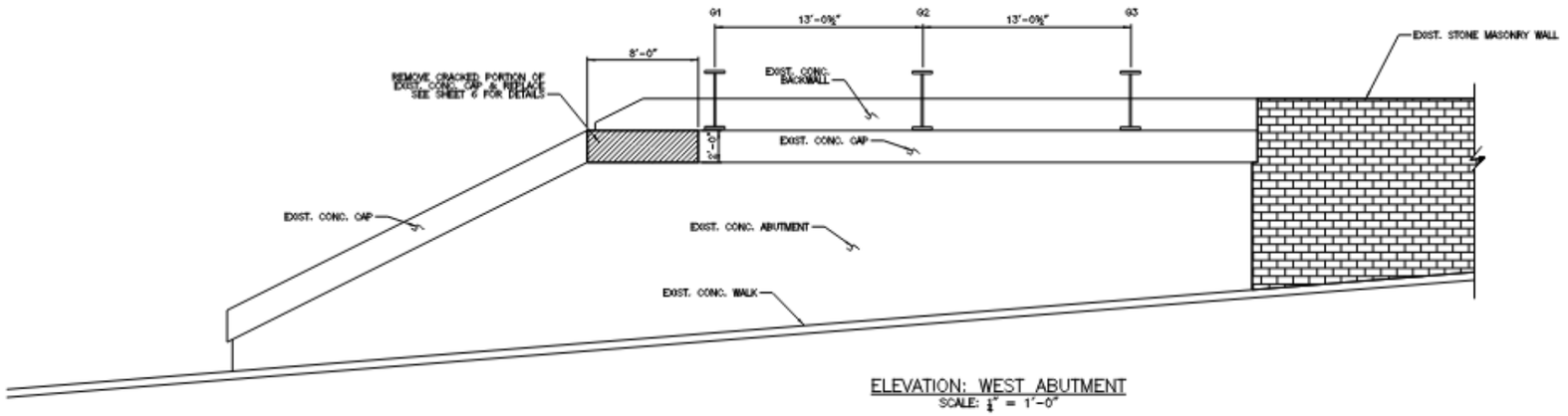
OASIS TRAIL

INSPECTED BY
DATE
PAGE OF

SCALE FACTORS CORRESPOND WITH FULL SIZE (22"x34") DRAWINGS



ELEVATION: EAST ABUTMENT
SCALE: 1" = 1'-0"



ELEVATION: WEST ABUTMENT
SCALE: 1" = 1'-0"

FINAL CONTRACT PLANS

###-# Note →

HDR ENGINEERING, INC.
8800 LYRA DR. STE 200
COLUMBUS, OHIO 43240
(614) 793-8777

DESIGN:	CHH	DATE: 7/25/20
DRAWN:	TS	DATE: 7/25/20
CHECKED:	RW	DATE: 7/25/20

ABUTMENT REPAIR PLAN

BRIDGE MP 2.58
CROSSING COLLINS AVENUE
NEWARK AND OHIO RAILROAD CORP. OASIS LINE

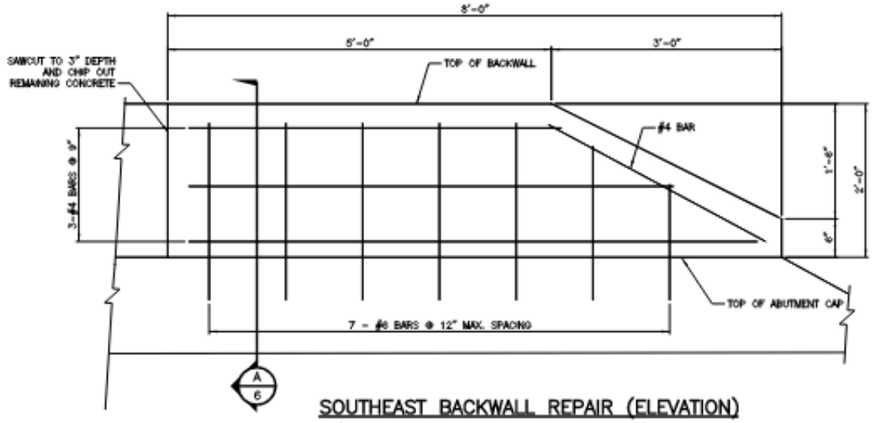
05
7

BURGESS & NIPLE

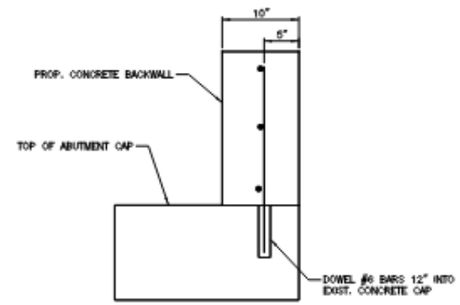
MP 2.58 BRIDGE OVER COLLINS AVENUE

CLIENT:
OASIS TRAIL

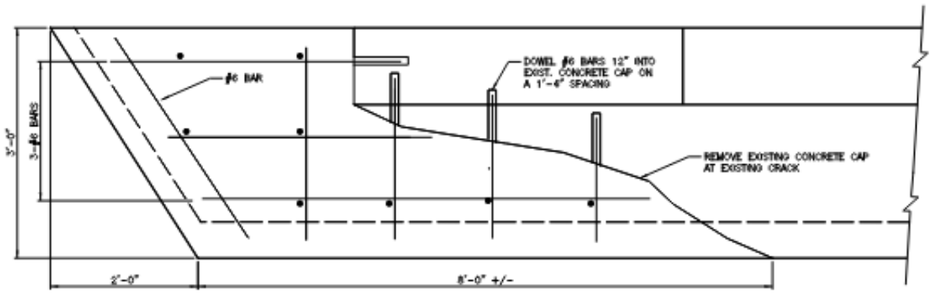
INSPECTED BY
DATE
PAGE OF



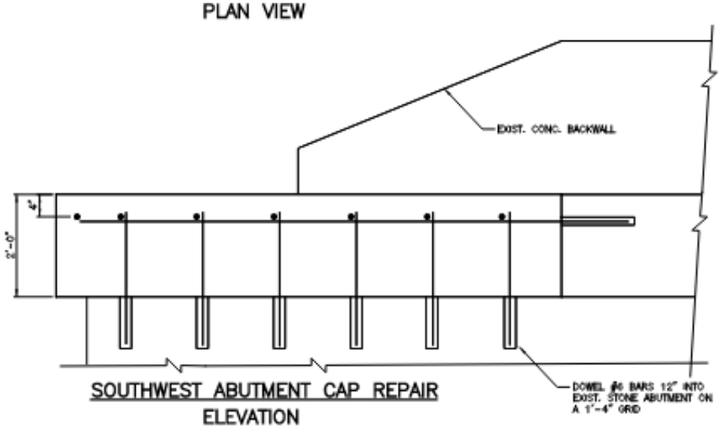
SOUTHEAST BACKWALL REPAIR (ELEVATION)
(NORTHEAST BACKWALL SIMILAR)



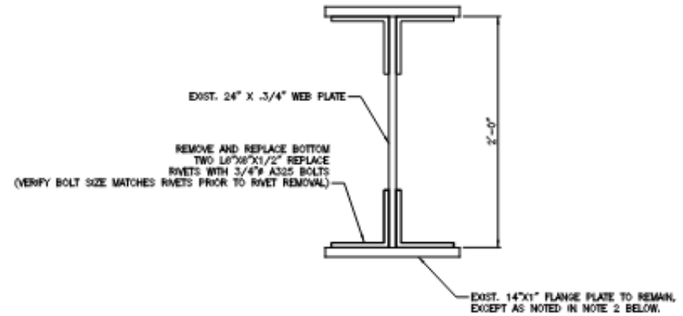
SECTION A/6



SOUTHWEST ABUTMENT CAP REPAIR
PLAN VIEW



SOUTHWEST ABUTMENT CAP REPAIR
ELEVATION



FLOOR BEAM REPAIR DETAIL

REPAIR NOTES

1. REPLACE BOTTOM FLANGE ANGLES ON FLOOR BEAMS (FB0, FB1, FB2 AND FB3). CONTRACTOR SHALL FIELD VERIFY BOLT SPACING AND ANGLE LENGTHS. APPROXIMATE LENGTH IS 13'-0" FEET.
2. AT CONTRACTOR OPTION, THE CONTRACTOR MAY REPLACE ENTIRE BOTTOM FLANGE ASSEMBLY (BOTTOM FLANGE ANGLES, PL 14"X1", RIVETS) INSTEAD OF REUSING BOTTOM PLATE AND REMOVING THE ASSOCIATED RIVETS IN THE FIELD. THE ASSEMBLY SHALL BE SHOP FABRICATED AS MEASURED IN THE FIELD BY THE CONTRACTOR. THE BOTTOM FLANGE ASSEMBLY SHALL BE FURNISHED AND INSTALLED AT THE CONTRACT UNIT PRICE FOR THE FLANGE ANGLE REPLACEMENT AS BID BY THE CONTRACTOR.
3. FLOOR BEAMS AND ASSOCIATED STRINGERS SHALL BE SUPPORTED BY TEMPORARY SHORING AND BLOCKING AS NECESSARY TO SUPPORT THE DEAD LOAD OF THE STRUCTURE SUPPORTED BY THE FLOOR BEAM. SHORING SHALL BE DESIGNED BY THE CONTRACTOR AND APPROVED BY SORTA PRIOR TO INSTALLATION. SHORING DESIGN AND INSTALLATION COSTS SHALL NOT BE PAID SEPARATELY, BUT INCLUDED IN THE CONTRACT UNIT PRICE FOR THE STEEL REPLACEMENT.
4. CONTRACTOR SHALL COORDINATE WITH THE RAILROAD TO VERIFY NO TRAIN LOADING WILL BE PLACED UPON BRIDGE DURING REPLACEMENT OF FLOOR BEAM COMPONENTS.

SCALE FACTORS CORRESPOND WITH FULL SIZE (22"x34") DRAWINGS

FINAL CONTRACT PLANS

HDR ENGINEERING, INC.
9987 CARVER RD, STE 200
CINCINNATI OHIO 45242
513-984-7500

DESIGN: CHN DATE: 7/25/20
DRAWN: TS DATE: 7/25/20
CHECKED: JSW DATE: 7/25/20

STRUCTURAL REPAIR DETAILS

BRIDGE MP 2.58
CROSSING COLLINS AVENUE
INDIANA AND OHIO RAILROAD CORP. OASIS LINE

6/7

###-# Note

BURGESS & NIPLE

MP 2.58 BRIDGE OVER COLLINS AVENUE

CLIENT:

OASIS TRAIL

INSPECTED BY
DATE
PAGE OF

BURGESS & NIPLE

525 Vine Street | Suite 1300 | Cincinnati, OH 45202 | 513.579.0042

Mr. Sean Creighton, PLA, LEED AP
Project Manager
Great Parks of Hamilton County
10245 Winton Road
Cincinnati, OH 45231

Re: Great Parks of Hamilton County – Oasis Corridor
B&N Bridge Assessment – Collins Ave

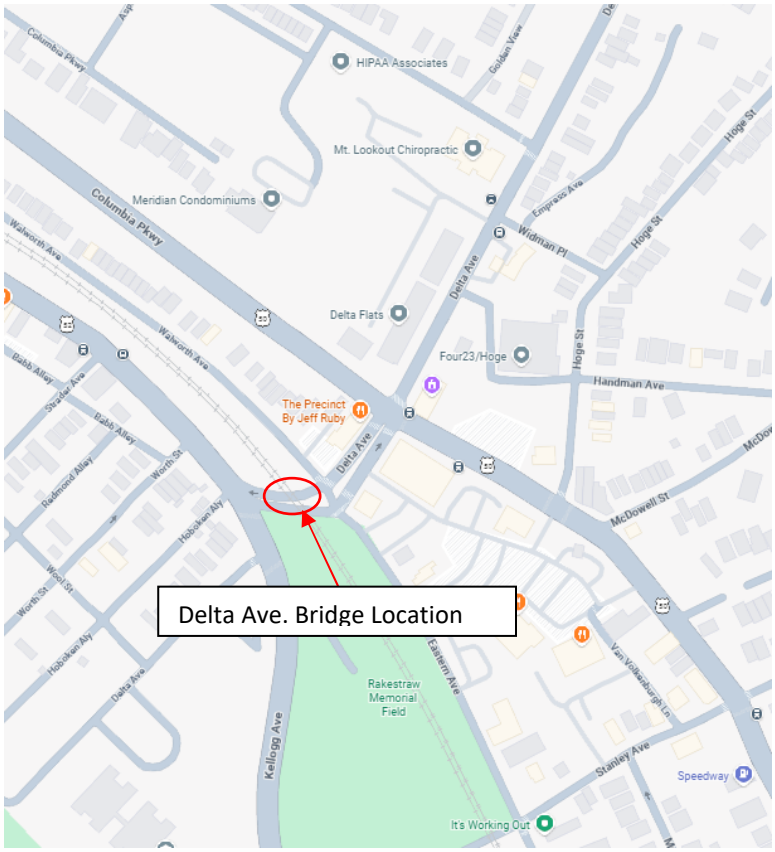
April 2, 2026

Dear Mr. Creighton:

Burgess & Niple (B&N) performed a bridge assessment of the steel twin girder bridge carrying the Indiana & Ohio RR over Delta Ave on January 14th & 15, 2026. The girders are named south and north girders (*Appendix B*). Beams and pier columns are numbered from left to right looking east. The steel pier cap and abutment bearings were inspected from a ladder. A cursory inspection of the concrete substructure elements and tracks was also completed.

The intent of this assessment is to determine areas of deficiency that need to be repaired for conversion of the north railroad track to a trail. Detailed dimensions of existing bridge members and geometry were not obtained.

LOCATION MAP



Bridge Assessment:

Indiana & Ohio RR over Delta Ave., SFN 3160653 *(see Appendix A for deficiency table and layout)*

Deck Condition Summary:

There is no deck on this structure. The steel deck pans hold up the fill and ballast under the rails **(photo 5)**.

Superstructure Condition Summary:

Multiple isolated locations of minor laminar corrosion with negligible section loss on girder and beam ends. Areas of worse corrosion exist along the length exterior face of girders and at girder and beam ends at abutments and over the pier. Section loss at these locations were negligible.

Substructure Condition Summary:

Both abutments exhibit water staining and multiple isolated moderate width vertical and horizontal cracks. Widespread shallow scaling and moderate width horizontal cracking exist on abutment caps. The concrete crash barrier exhibit

Notable Defects:

Pier 1 - Column 7 - concrete is in poor condition and appears to not contain any reinforcement and only appears to protect the underlying built up steel column. A small portion of the steel column is exposed and is in poor condition and exhibit section loss and pack rust between components up to 1/2". Full condition of steel column is unable to be determined due to encasement. Concrete is unsound throughout including portion of exposed core concrete **(photos 13-15)**. Column 1 is in similar condition **(photo 16)**.

Recommendations:

- Abrasively clean and spot paint areas of surface corrosion to steel superstructure and pier.
- Periodically inspect for loose concrete on abutment walls and pier protection. Remove any loose concrete that may pose a safety hazard to pedestrians and vehicular traffic.
- Monitor pier 1 column 7 for further spalling and steel section loss. Consider patching or replacing concrete encasement at this column.
- The City of Cincinnati has requested a load rating of the bridge since the structure will carry railroad loads and there is not documentation on the load carrying capacity of the bridge.

Photographs



Photo 1 – Elevation looking south.



Photo 2 – Elevation looking northwest.



Photo 3 – End view looking west.



Photo 4 – End view looking east.



Photo 5 – Looking south at the general underside condition of span 2.



Photo 6 – Looking northwest at the east face of the pier. Note: heavy spalling on column 7 and along the concrete pier protection.



Photo 7 – Looking northeast at overall elevation of the east abutment from south end. Note: isolated delaminations totally less than 20 SF. Horizontal and vertical moderate width cracking throughout abutment cap. Concreted is generally sound around cracks.



Photo 8 – Looking northwest overall elevation of the west abutment exhibits vertical and horizontal moderate width cracks in cap. Cracking is heaviest in south half of abutment.



Photo 9 – Looking northwest at the typical efflorescence and water staining on the bottom flange of beam 3 at the north girder in span 2.



Photo 10 – Looking west at south face of floorbeam 41 bearing at the west abutment exhibits pack rust peeling the horizontal angle leg with adjacent surface corrosion with negligible section loss.



Photo 11 – Looking south a typical painted over section loss to the steel backwall between beams 7 and 8 at the east abutment. This condition is typical at multiple locations.



Photo 12 – Looking northeast at an overall view of the partial height pier wall at column 4. Note: the pier wall exhibits heavy deterioration intermittently, full length. The concrete encasement extensions around base of columns exhibits minor crack, but are generally in good condition.



Photo 13 – Looking east at overall of column 7. Note: concrete is in poor condition and appears to not contain any reinforcement and only appears to protect the underlying built up steel column. A small portion of the steel column is exposed and is in poor condition and exhibit section loss and pack rust between components up to 1/2”.



Photo 14 – Looking north at overall of column 7. Note: concrete is in poor condition and appears to not contain any reinforcement and only appears to protect the underlying built up steel column. A small portion of the steel column is exposed and is in poor condition and exhibit section loss and pack rust between components up to 1/2”.



Photo 15 – Looking west at overall of the top half of column 7. Note: concrete is in poor condition and appears to not contain any reinforcement and only appears to protect the underlying built up steel column.

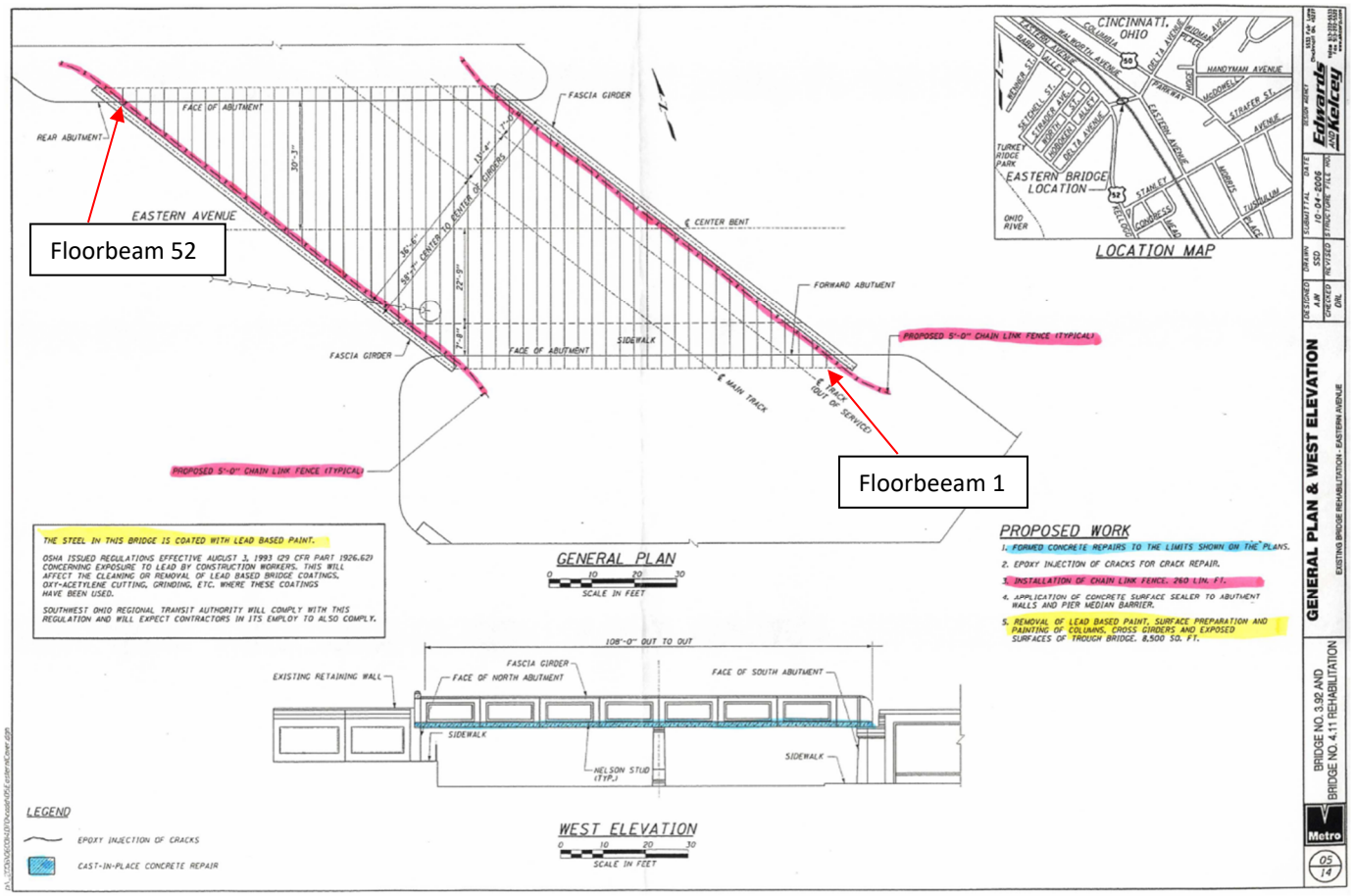


Photo 16 – Overall, of north column (column 1). Note: column is in similar condition to column 7. Steel frame is not exposed.

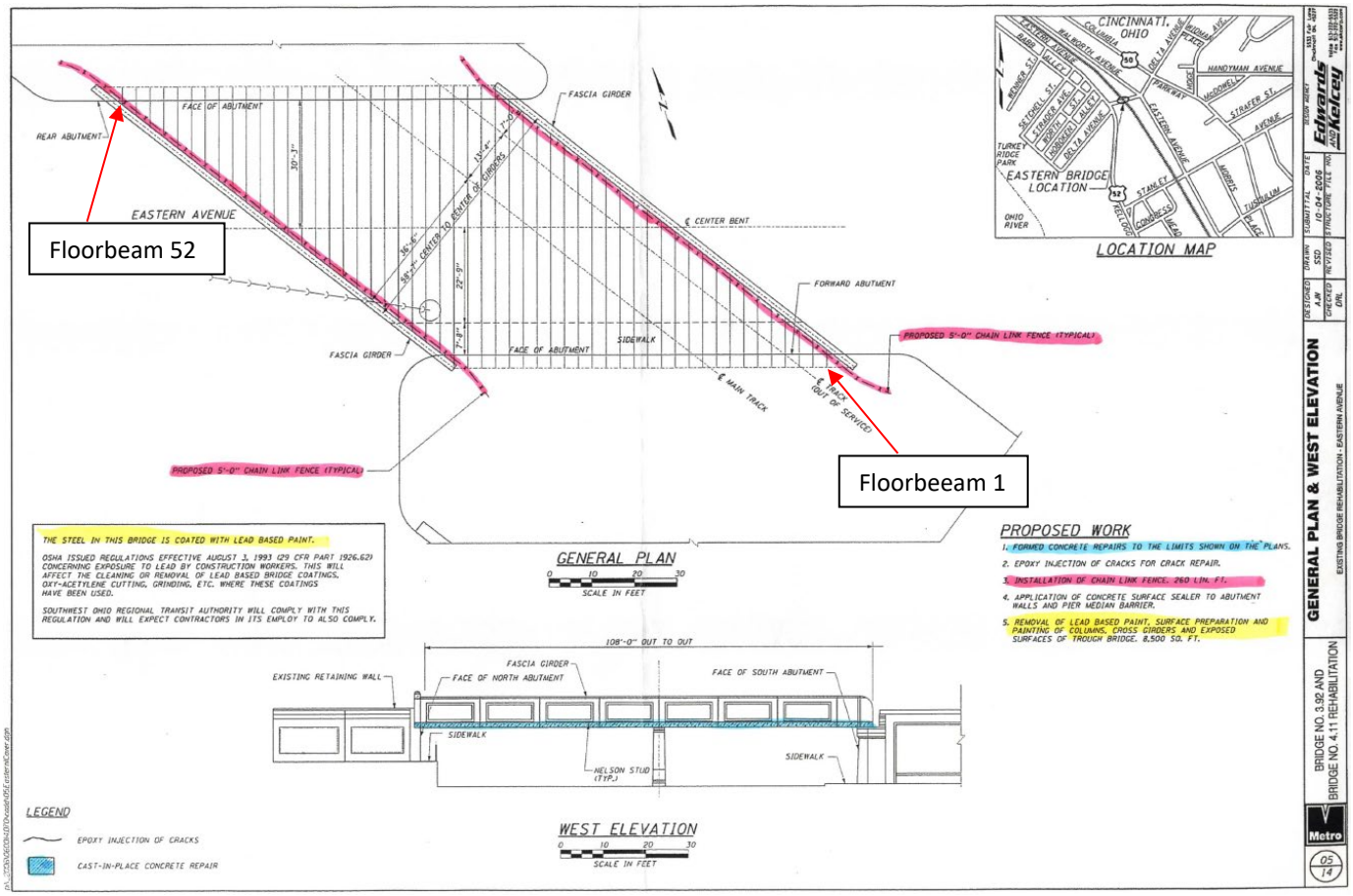
Appendix A: Floor System Layout

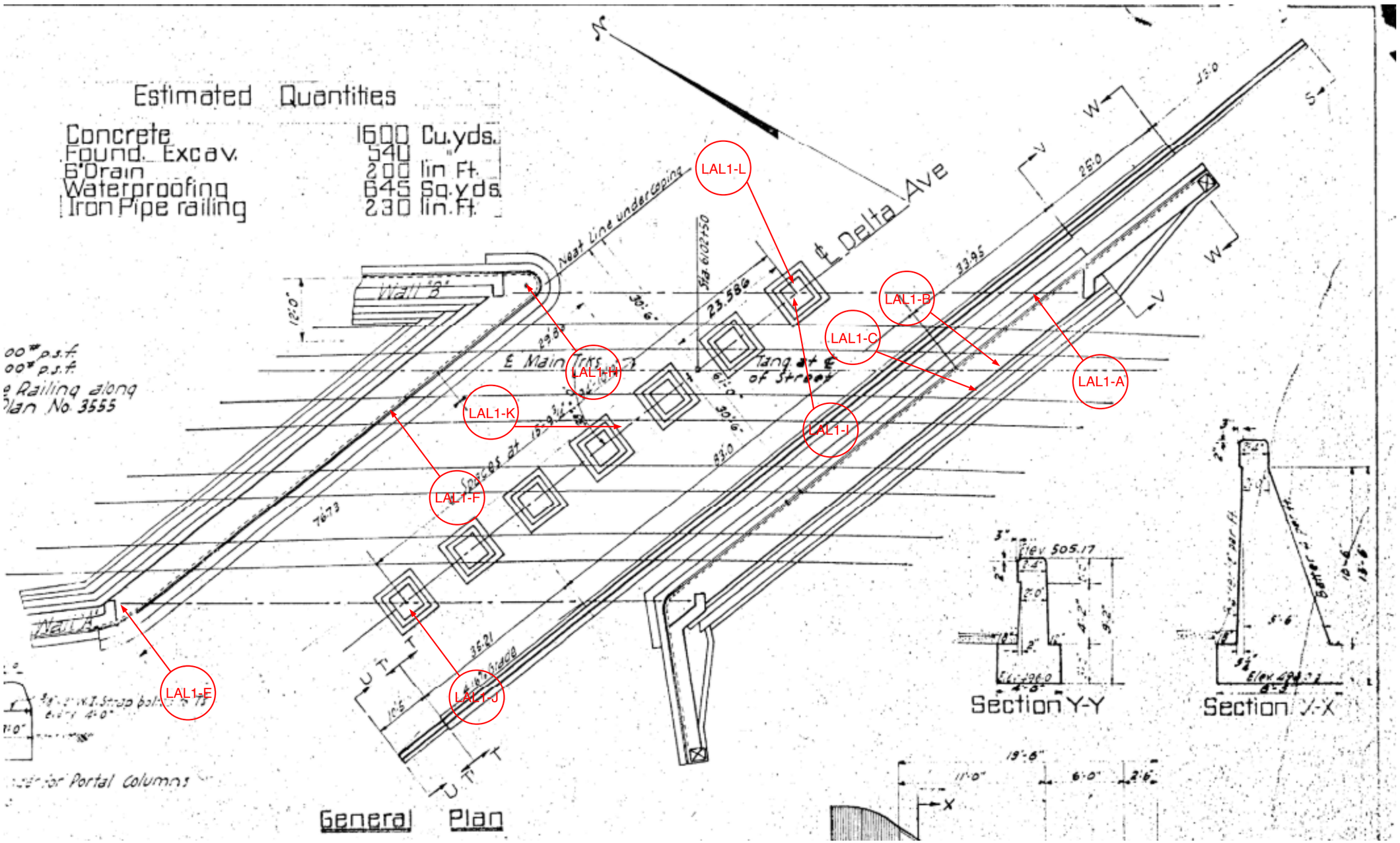
Photo #	Call Out #	Comment
LAL1-25	LAL-A	Typical efflorescence and water staining on the bottom flange of beam 3 at the north girder.
LAL1-26	LAL-B	Typical painted over section loss to the steel backwall between beams 7 and 8 at the east abutment.
LAL1-27	LAL-C	Underside of beam 10 bottom plate at the east abutment exhibits minor laminar corrosion with negligible section loss.
LAL1-28	LAL-D	East abutment cap under floorbeam 24 exhibits a 2’ square area of delamination with an adjacent 9” x 9” x 1/2” deep corner spall.
LAL1-30	LAL-E	Overall of the south girder bearing at the west abutment. Note: heavy surface corrosion with negligible section loss to steel bearing assembly. Water drains onto bearing at this location.
LAL1-31	LAL-F	South face of floorbeam 41 bearing at the west abutment exhibits pack rust peeling the horizontal angle leg.
LAL1-32	LAL-G	5’ long x 6” tall x 3” deep spall in the top of the west abutment cap between floorbeams 37 and 38. The top of the abutment cap is delaminated along a 5’ long x 6” wide area (above the spall) that does not undermine the bearing.
LAL1-34	LAL-H	South face of the north girder bearing at the west abutment. Note: heavy water staining and minor surface corrosion with negligible section loss. Water drains off the corner of the bridge onto bearing.
LAL1-38	LAL-I	Surface corrosion and pack rust between the column 1 bearing plate and sole plate.

Appendix B: Floor System Layout



Appendix B: Floor System Layout





###-# Note

BURGESS & NIPLE

BRIDGE OVER DELTA AVENUE

CLIENT:

OASIS TRAIL

INSPECTED BY

DATE

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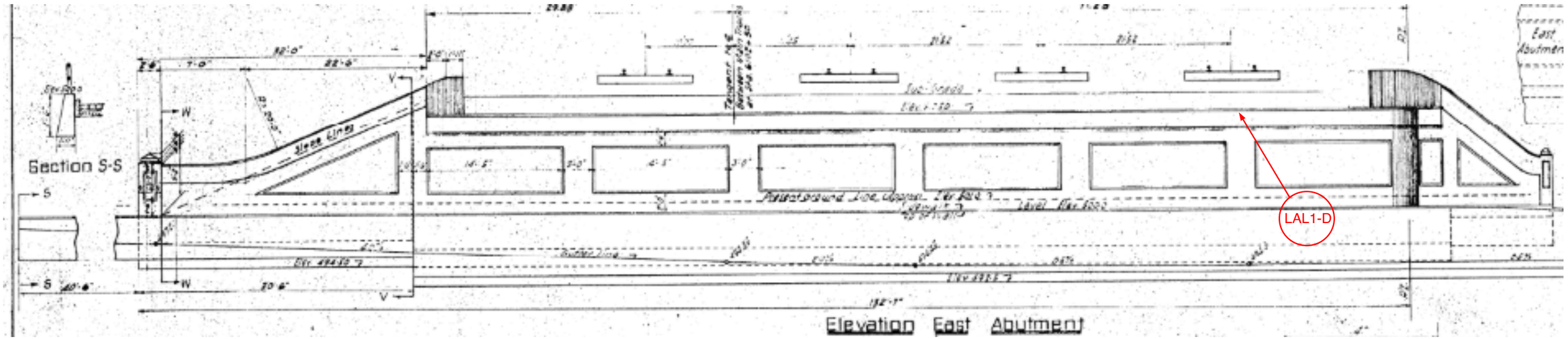

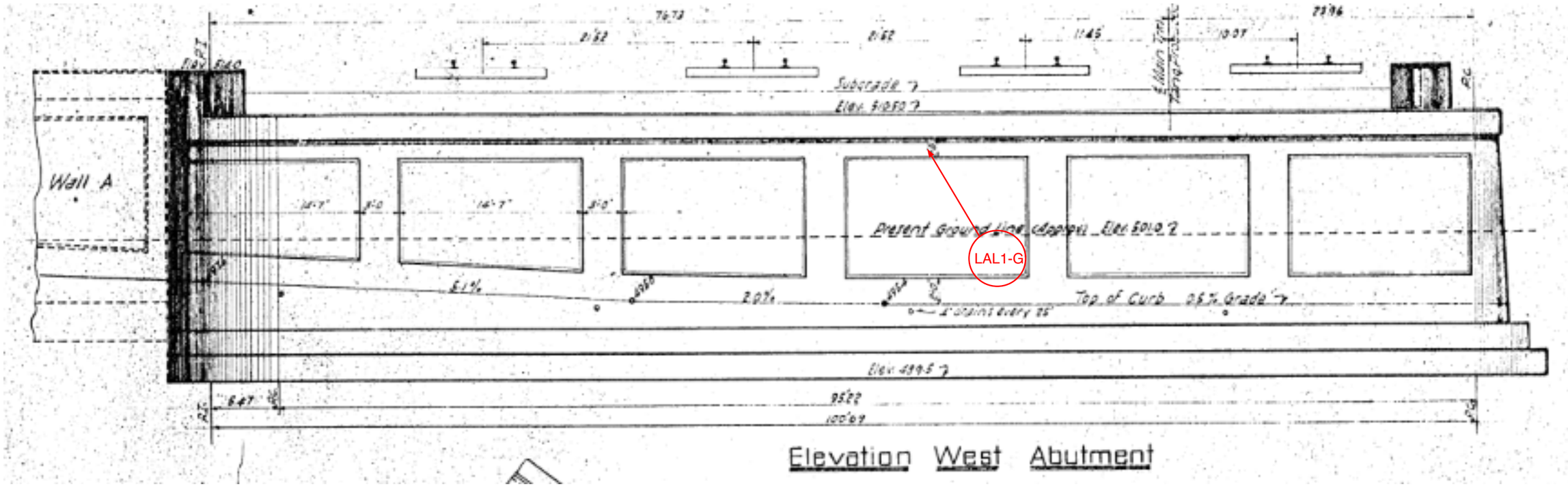

###-# Note →

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BURGESS & NIPLE

525 Vine Street | Suite 1300 | Cincinnati, OH 45202 | 513.579.0042

Mr. Sean Creighton, PLA, LEED AP
Project Manager
Great Parks of Hamilton County
10245 Winton Road
Cincinnati, OH 45231

Re: Great Parks of Hamilton County – Oasis Corridor
B&N Bridge Assessment – Collins Ave

April 2, 2026

Dear Mr. Creighton:

Burgess & Niple (B&N) performed a bridge assessment of the steel box beam bridge carrying the Indiana & Ohio RR over Stanley Ave on January 14th & 15, 2026. Beams and pier columns are numbered from left to right looking east. The steel pier cap and abutment bearings were inspected from a ladder. A cursory inspection of the concrete substructure elements and tracks was also completed.

The intent of this assessment is to determine areas of deficiency that need to be repaired for conversion of the north railroad track to a trail. Detailed dimensions of existing bridge members and geometry were not obtained.

LOCATION MAP



Bridge Assessment:

Indiana & Ohio RR over Stanley Ave *(see Appendix A for deficiency table and layout)*

Deck Condition Summary:

There is no deck on this structure. The steel deck pans hold up the fill and ballast under the rail.

Superstructure Condition Summary:

Beam ends at abutments and pier exhibit water staining and isolated corrosion with section loss up 1/16” deep. The free lengths of the beams are in good condition with only isolated locations of paint failure. Bearing seats exhibit moderate freckling corrosion with negligible section loss.

Substructure Condition Summary:

Isolated insignificant width horizontal cracks in the top of the abutment walls with moderate efflorescence. Heavy concentration of minor width cracks in the abutment caps with isolated locations of moderate width cracks.

Recommendations:

- Consider spot cleaning and painting isolated locations of surface corrosion to beam ends.
- Add a plate or angle to the top of the steel backwall between beams 12 and 13 at the east abutment to prevent loss of ballast.
- The City of Cincinnati has requested a load rating of the bridge since the structure will carry railroad loads and there is not documentation on the load carrying capacity of the bridge.

Photographs



Photo 1 – Elevation looking south.



Photo 2 – Elevation looking north.



Photo 3 – End view looking east.



Photo 4 – End view looking west.



Photo 5 – Looking west at the underside of span 1. Note: isolated locations of surface corrosion with minor section loss.



Photo 6 – Looking northeast at the east abutment elevation.



Photo 7 – Looking west at the overall of the west face of pier 1.



Photo 8 – Looking south at typical water leakage and moisture staining at pier 1. Note: leakage between beams 10-11 shown. Water leaks through the span 1 to span 2 deck pan interface.



Photo 9 – Looking north at typical beam to bearing seat condition at pier 1. Photo from beam 9. Leakage is intermittent and heaviest in the end 4 beam bays.



Photo 10 – Looking east at typical bearing seat condition between beams 3 and 4 and the east abutment. Note: minor surface corrosion, water staining, and active leakage at bearing seat with negligible section loss.



Photo 11 – Looking east at underside of beam 3 at the east abutment. Note: minor surface corrosion and water staining on the bottom of beam with negligible section loss.



Photo 12 – Looking east at north web of beam 11 at the east abutment exhibits a 14” long x 4” tall area of up to 1/16” deep painted over section loss in the bottom of the web plate.



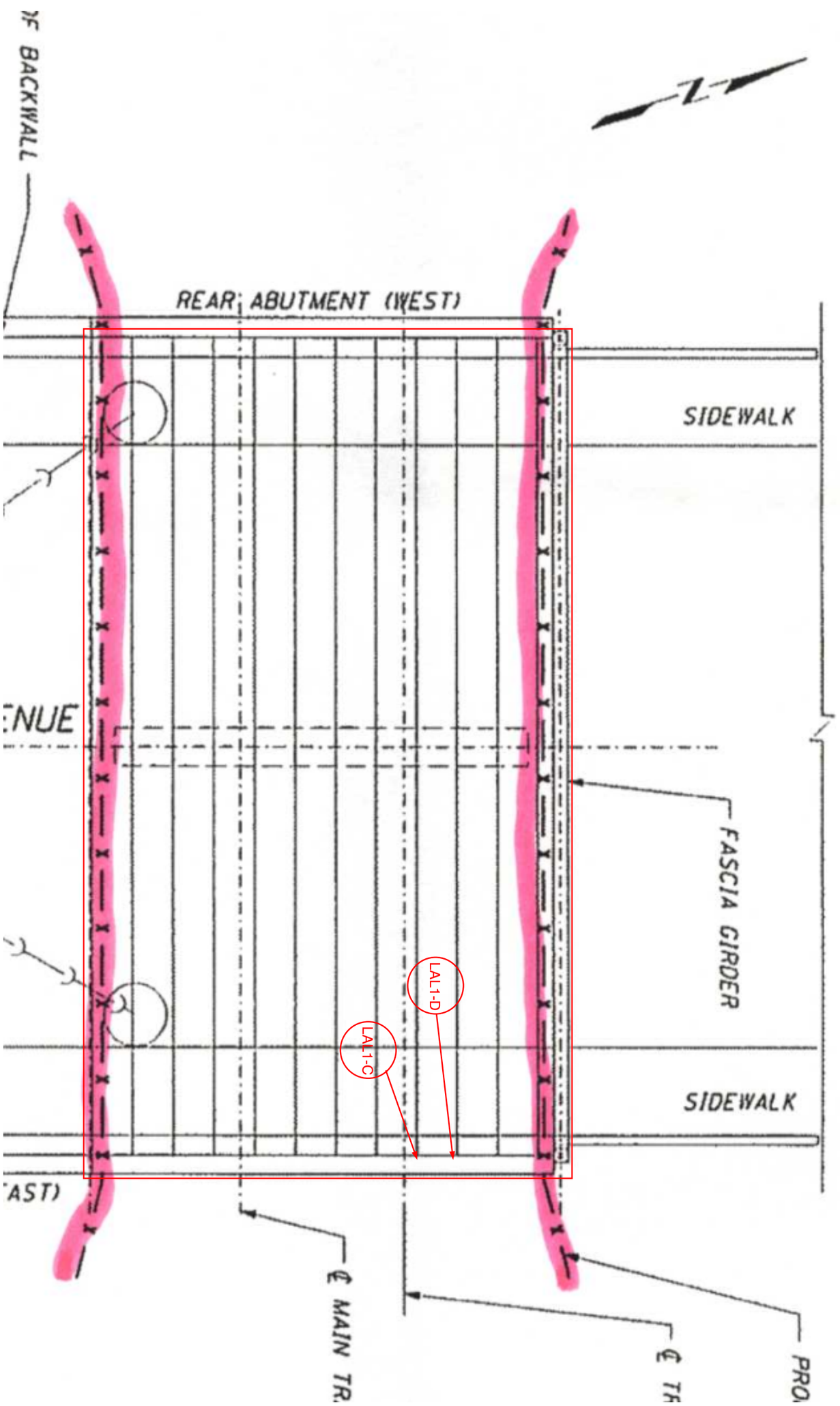
Photo 13 – Looking east at the north face of beam 13 bottom of web at the east abutment a 15” long x 3” tall area of active corrosion with up to 1/16” deep section loss.



Photo 14 – Looking east at Overall of the steel backwall between beam 12 and 13 at the east abutment. Note: up to 1//8” painted over section loss throughout with a 4” wide x 1” tall void/corrosion hole in the top of the back and end of deck pan. Ballast is exposed.

Appendix A: Deficiency Table

Photo #	Call Out #	Comment
Photo 8	C-LAL-A	Water leakage between beams 10-11. Water leaks through the span 1 to span 2 deck pan interface.
Photo 9	C-LAL-B	Leakage at pier bearing seat is intermittent and heaviest in the end 4 beam bays.
Photo 10	C-LAL-C	Minor surface corrosion, water staining, and active leakage at bearing seat with negligible section loss.
Photo 11	C-LAL-D	Underside of beam 3 at the east abutment. Note: minor surface corrosion and water staining on the bottom of beam with negligible section loss.
Photo 12	C-LAL-E	North web of beam 11 at the east abutment exhibits a 14” long x 4” tall area of up to 1/16” deep painted over section loss in the bottom of the web plate.
Photo 13	C-LAL-F	Steel backwall between beams 12 and 13 at the east abutment exhibits up to 1//8” painted over section loss throughout with a 4” wide x 1” tall void/corrosion hole in the top of the back and end of deck pan. Ballast is exposed.
Photo 14	C-LAL-G	North face of beam 13 bottom of web at the east abutment exhibits a 15” long x 3” tall area of active corrosion with up to 1/16” deep section loss.



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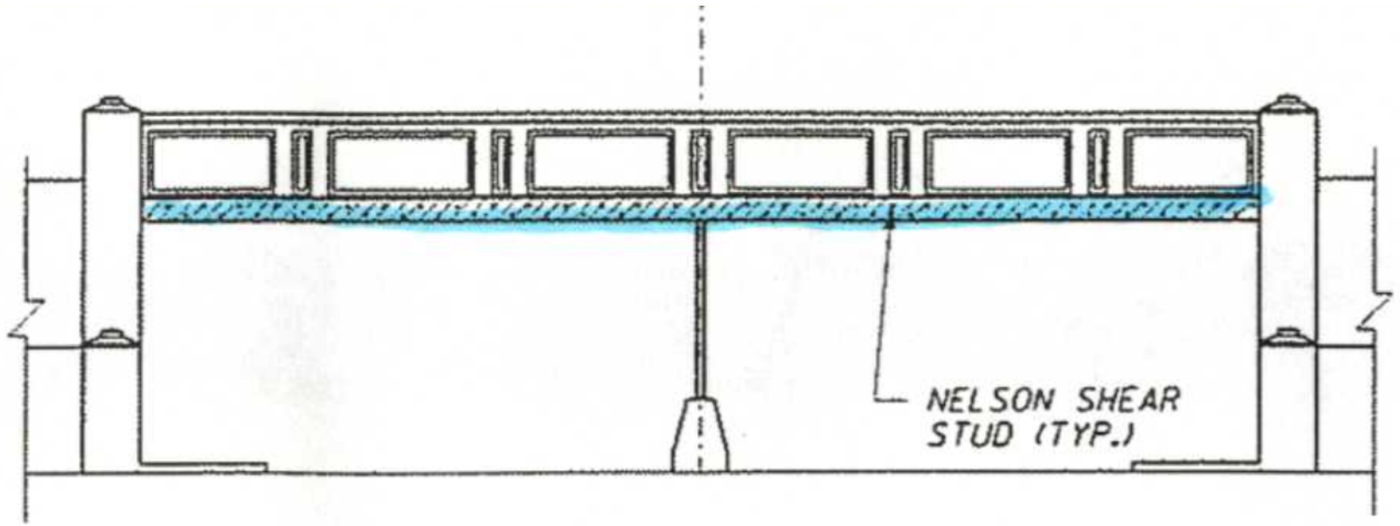
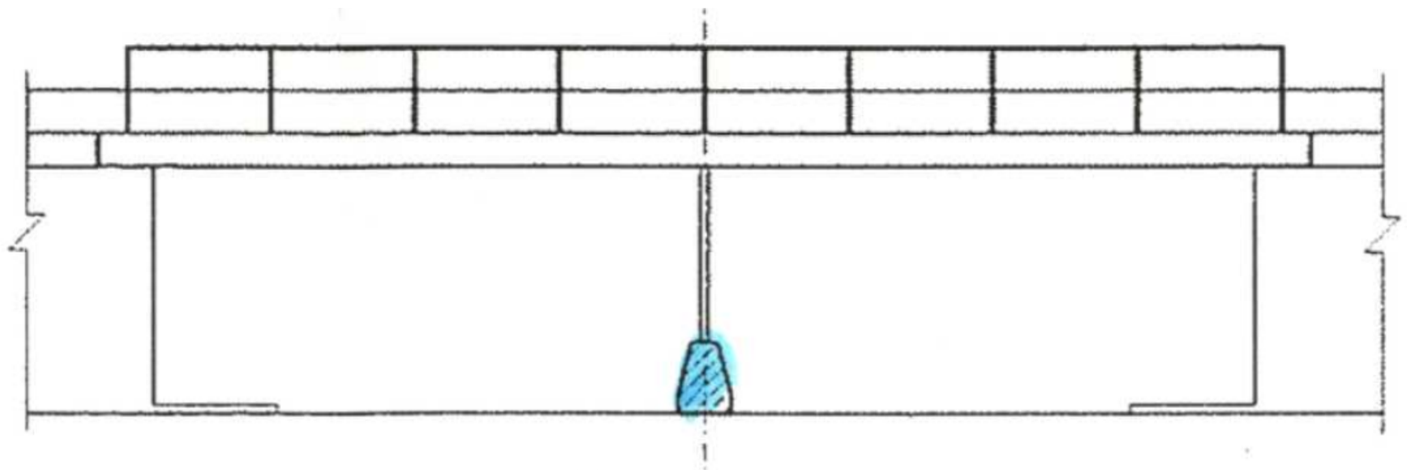


NORTH ELEVATION



SOUTH ELEVATION

KC

BURGESS & NIPLE

BRIDGE OVER STANLEY AVENUE

CLIENT:

OASIS TRAIL

INSPECTED BY

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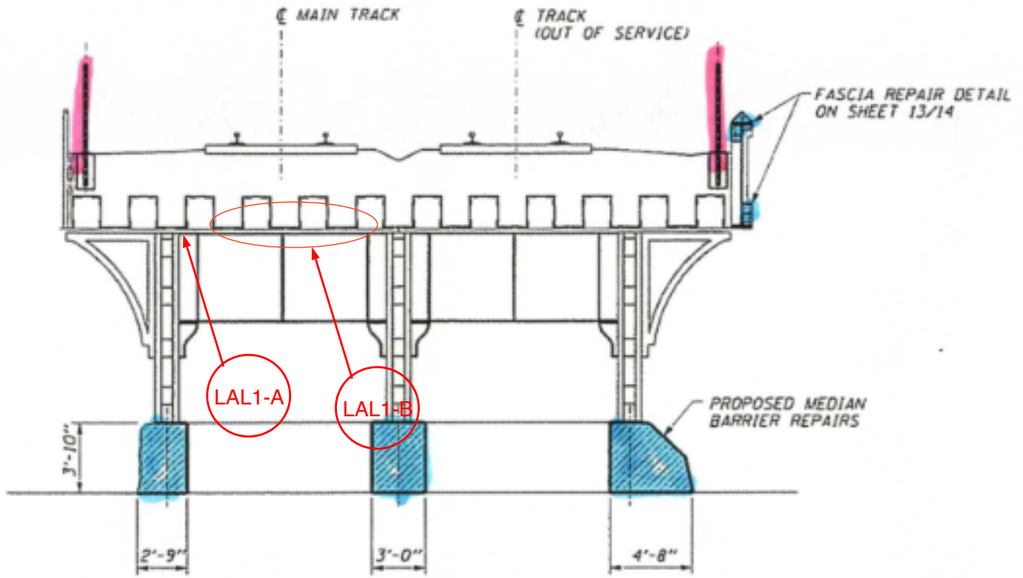
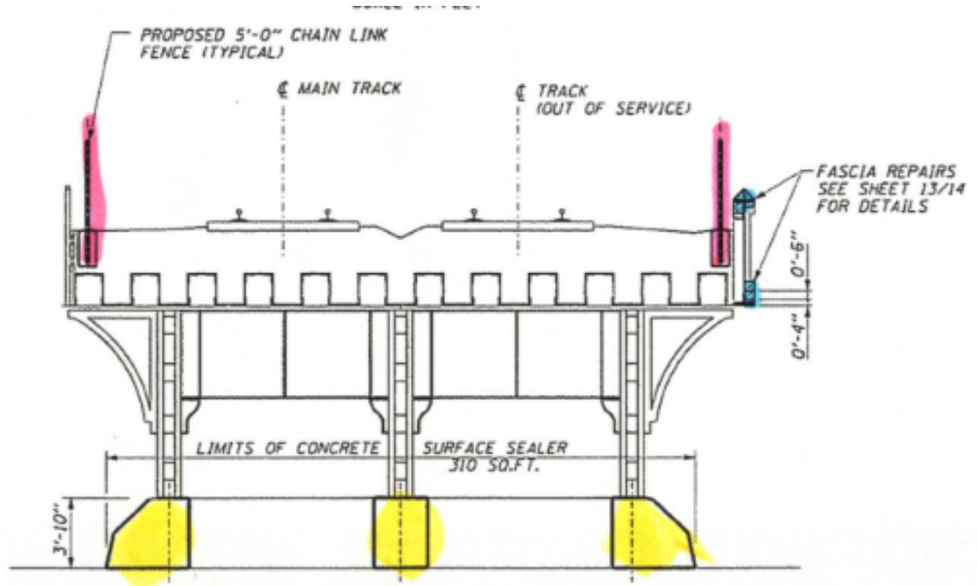
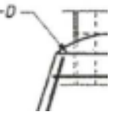


EXISTING PIER CONDITIONS
(LOOKING WEST)



PROPOSED PIER REPAIRS
(LOOKING WEST)



Looking East

BURGESS & NIPLE

BRIDGE OVER STANLEY AVENUE

CLIENT:

OASIS TRAIL

INSPECTED BY

DATE

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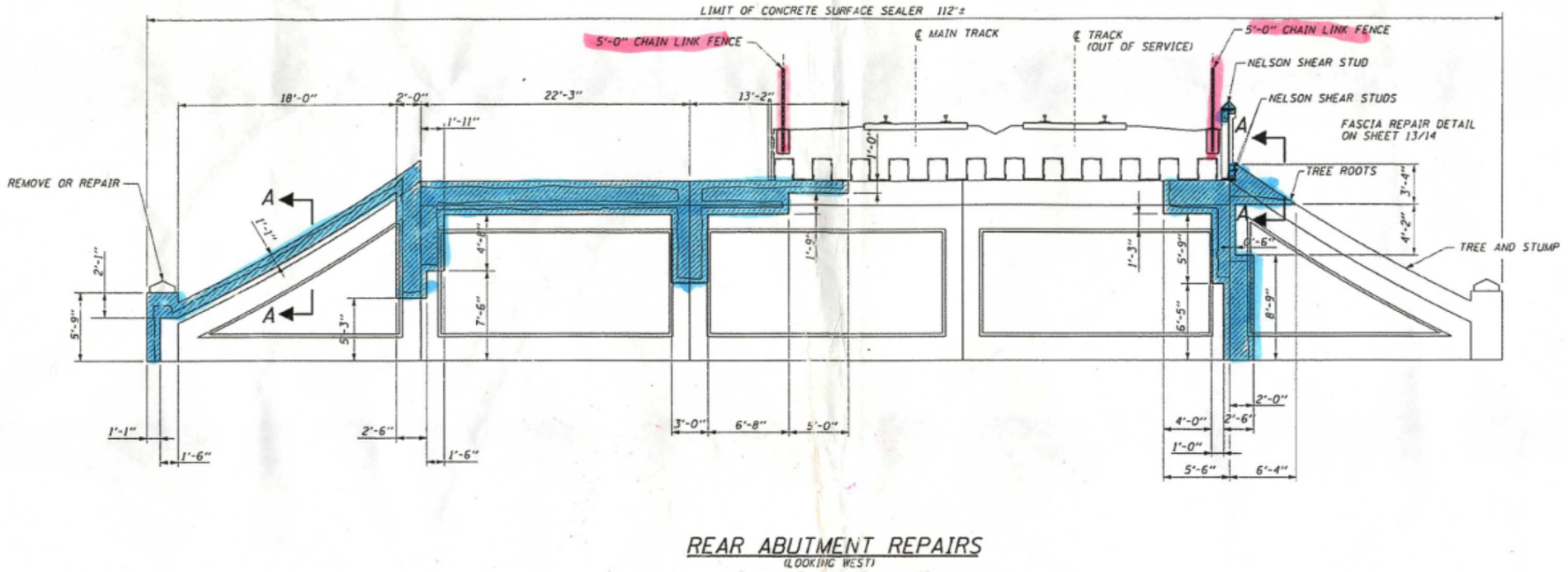
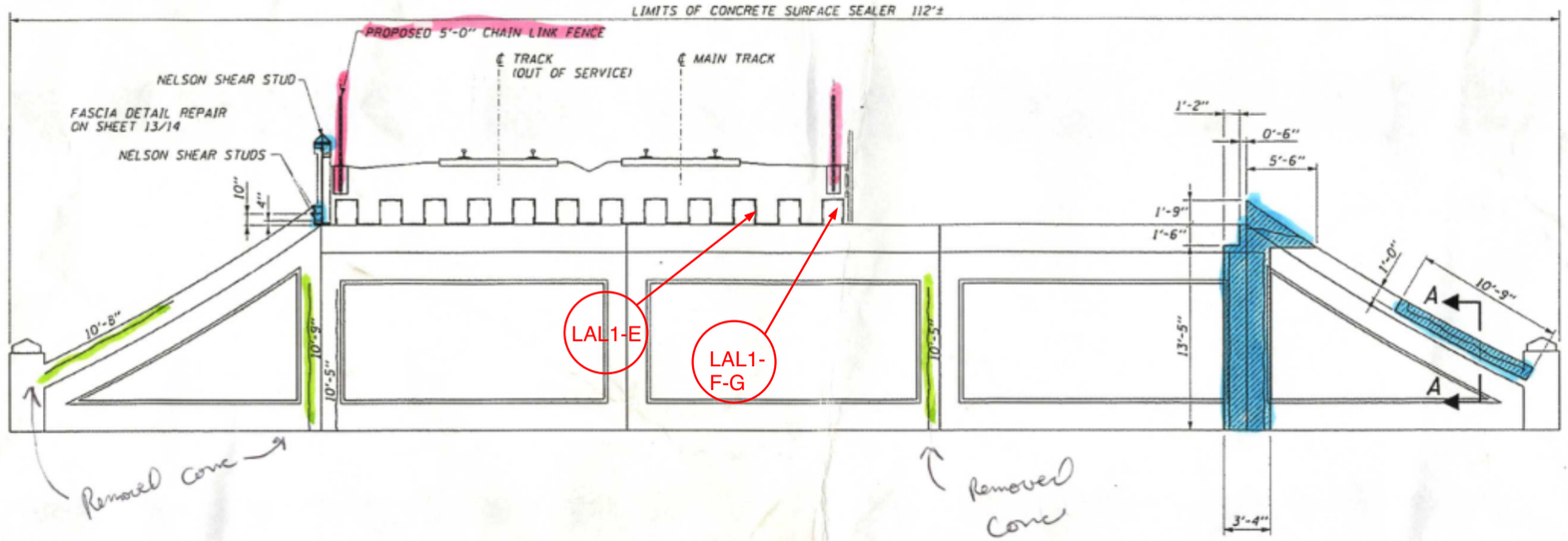


REAR ABUTMENT REPAIRS
(LOOKING WEST)



FORWARD ABUTMENT REPAIRS
(LOOKING EAST)

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BRIDGE OVER STANLEY AVENUE

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525 Vine Street | Suite 1300 | Cincinnati, OH 45202 | 513.579.0042

Mr. Sean Creighton, PLA, LEED AP
Project Manager
Great Parks of Hamilton County
10245 Winton Road
Cincinnati, OH 45231

Re: Great Parks of Hamilton County – Oasis Corridor
B&N Bridge Assessment – Collins Ave

April 2, 2026

Dear Mr. Creighton:

Burgess & Niple (B&N) performed an assessment of the reinforced concrete tunnel carrying Indiana & Ohio RR over pedestrian path on January 14th & 15, 2026. The assessment focuses on the visible portions of the concrete tunnel between Eastern and Congress Ave.

The intent of this assessment is to determine areas of deficiency that need to be repaired for conversion of the north railroad track to a trail. Detailed dimensions of existing bridge members and geometry were not obtained.

LOCATION MAP



Tunnel Assessment:

Indiana & Ohio RR over Congress Ave.

Summary:

The concrete walls and top slab were sounded for spalls and delaminations. Areas of deficiency are mapped in **Appendix A** below. There were some areas of moderate spalling in the tunnel walls and on the south headwall. Spalling was heaviest in the west wall and on the south head wall. The top slab and the east walls had isolated locations of moderate spalling. Multiple spalls had exposed rebar with negligible section loss.

Recommendations:

- Abrasively clean and paint areas of spalling with exposed rebar. Consider patching spalls and delaminations with trowelable mortar or concrete based on spall depth.
- Periodically inspect the tunnel for areas of new spalls and delaminations. Remove areas of lose concrete which pose a safety hazard to pedestrians.

Photographs



Photo 1 – Elevation looking north.



Photo 2 – Elevation looking south.



Photo 3 – Top of rail over tunnel, looking east.



Photo 4 – Top of rail over tunnel, looking west.



Photo 5 – Looking south at the typical inside of tunnel condition.



Photo 6 – Looking north at full width (8’) x 6” tall x up to 1” deep spall in the bottom corner of the south end tunnel entrance. 1’ tall x 8’ wide area of adjacent delamination above spall.



Photo 7 – Looking north at 9’ x 1’ x 3” deep spall in the east end of the east wall at the south entrance.



Photo 8 – Looking northwest at 3’ x 6’ x 2” deep spall in the south end of the east wall at the south entrance.



Photo 9 – Looking northwest at 30 SF of intermittent spalling on the west wall, up to 1” deep.



Photo 10 – Looking northwest at 30 SF of intermittent spalling on the west wall, up to 1” deep.



Photo 11 – Looking northwest at 30 SF of intermittent spalling on the west wall, up to 1” deep.



Photo 12 – Looking south at 4 SF of spalling on the underside of top slab 8’ from the north end with exposed and corroding rebar.



Photo 13 – Looking east at three, 1 SF spalls in the east top slab chamfer 15’ from the north end with exposed and corroding rebar.



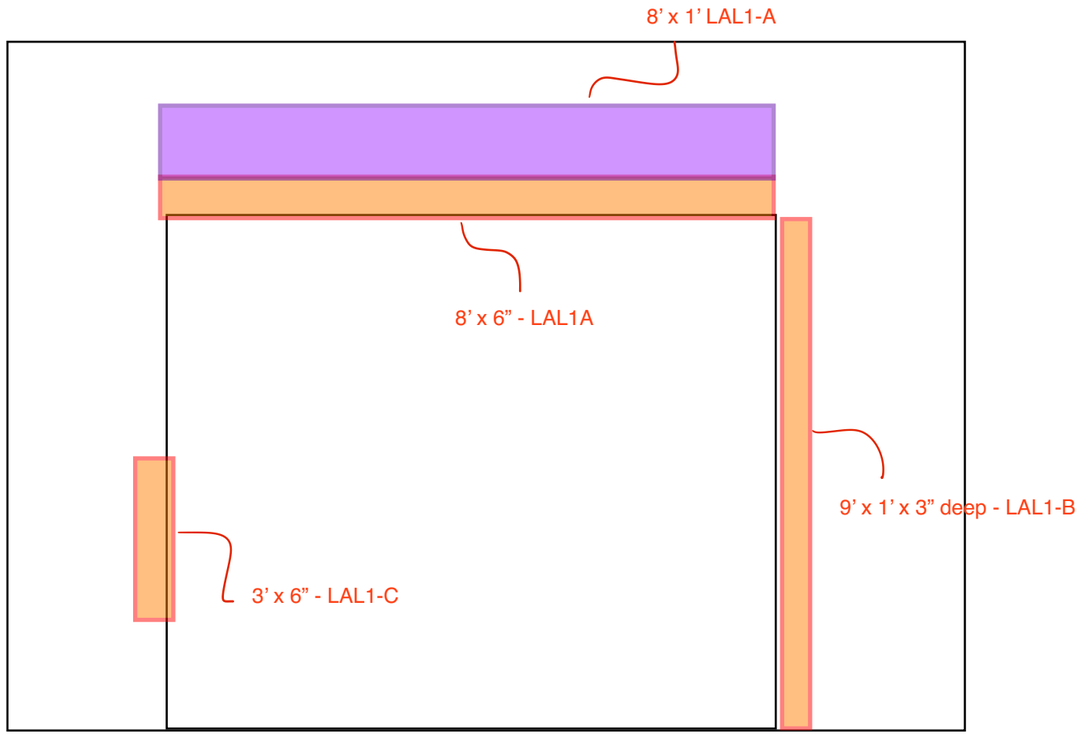
Photo 14 – Looking southeast at 4 SF of spalls with exposed rebar 20’ from the south end.



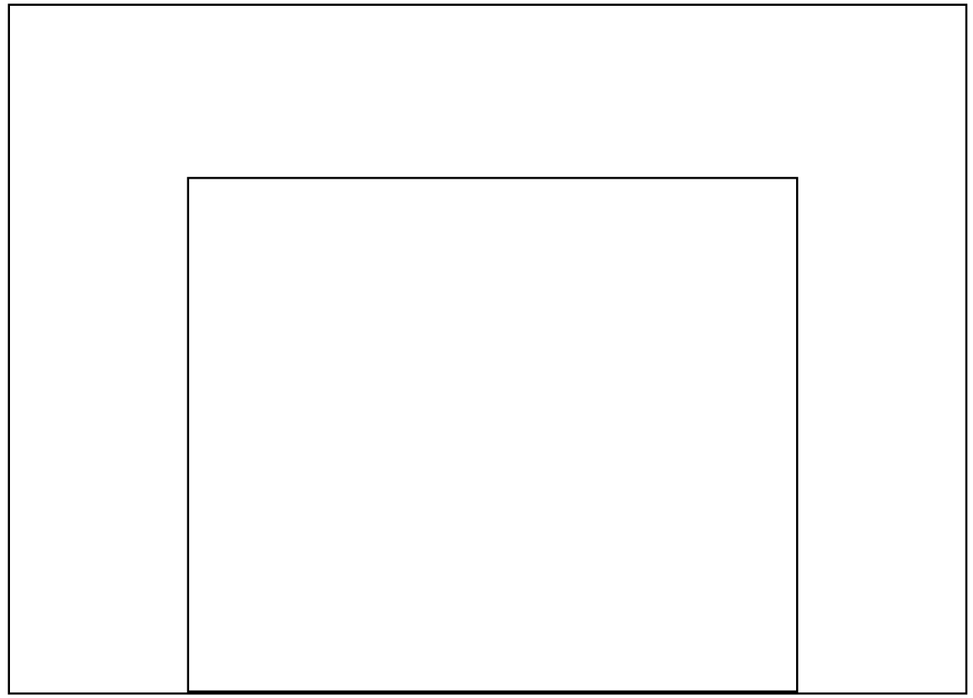
Photo 15 – Looking west at 2’ x 1’ x 1” deep spall with one exposed and corroding spiral bar on the west wall, 8’ from the south end.

Appendix A: Deficiency Callout Table

Photo #	Call Out #	Comment
Photo 6	LAL-A	Full width (8') x 6" tall spall in the bottom corner of the south end tunnel entrance. 1' tall x 8' wide area of adjacent delamination.
Photo 7	LAL-B	9' x 1' x 3" deep spall in the east end of the east wall at the south entrance.
Photo 8	LAL-C	3' x 6' x 2" deep spall in the south end of the east wall at the south entrance.
Photo 15	LAL-D	2' x 1' x 1" deep spall with one exposed and corroding spiral bar 8' from the south end.
Photo 11	LAL-E	30 SF of intermittent spalling on the west wall, up to 1" deep.
Photo 12	LAL-F	4 SF of spalling on the underside of top slab 8' from the north end with exposed and corroding rebar.
Photo 13	LAL-G	Three 1 SF spalls in the east top slab chamfer 15' from the north end with exposed and corroding rebar.
Photo 14	LAL-H	4 SF of spalls with exposed rebar 20' from the south end.



SOUTH ELEVATION (FASCIA)



NORTH ELEVATION (FASCIA)

Note ###-#

Spall

Delam

Patch

Cracks

Crack

BURGESS & NIPLE

CONGRESS TUNNEL

CLIENT:

OASIS TRAIL

INSPECTED BY

DATE

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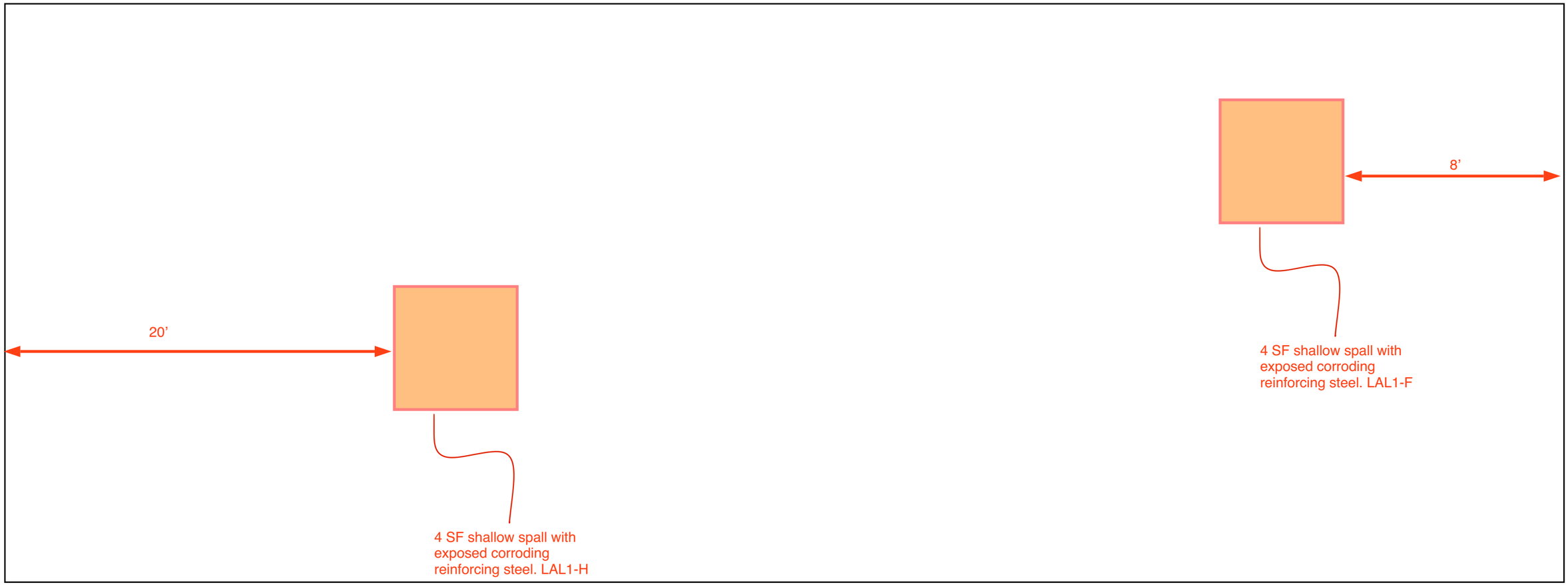

###-# Note

Spall

Delam

Patch

Cracks

Crack

BURGESS & NIPLE

CONGRESS TUNNEL

CLIENT:

OASIS TRAIL

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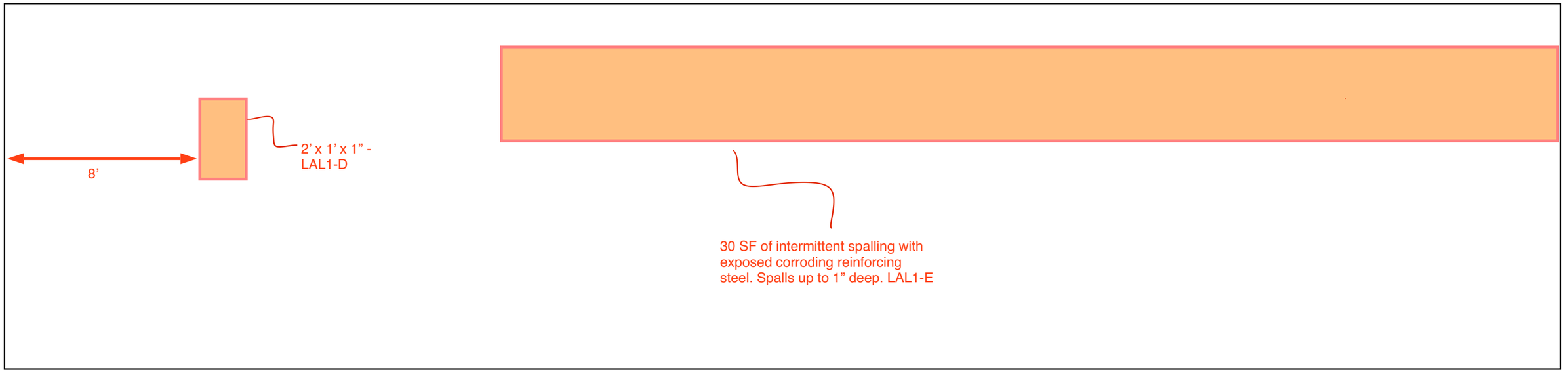
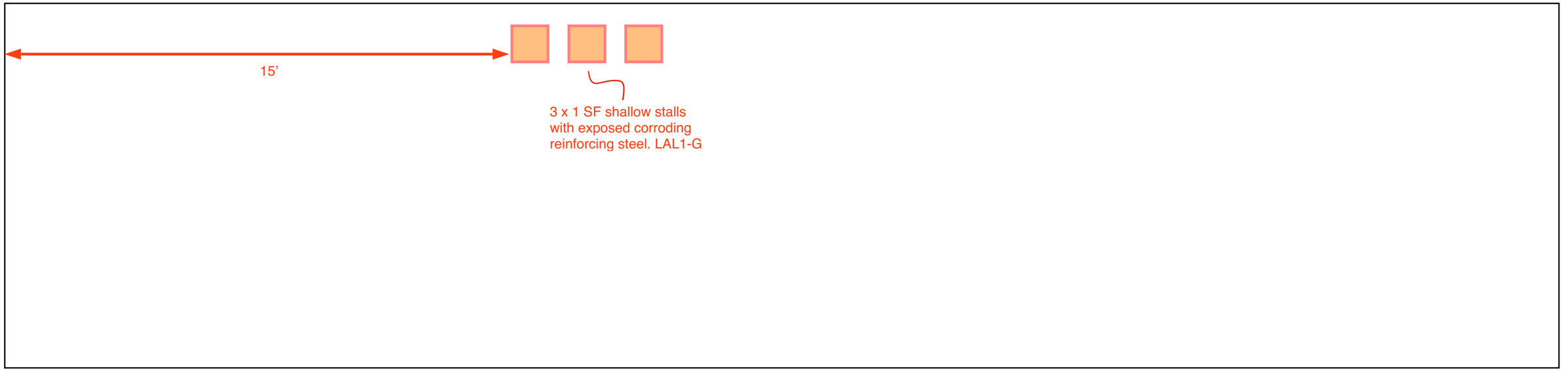


SOUTH END

NORTH END

LEFT ELEVATION VIEW
(West Wall)



NORTH END

SOUTH END

RIGHT ELEVATION VIEW
(East Wall)

###-# Note

Spall

Delam

Patch

Cracks

Crack

BURGESS & NIPLE

CONGRESS TUNNEL

CLIENT:

OASIS TRAIL

INSPECTED BY

DATE

PAGE OF

WEST END

TUNNEL FLOOR

EAST END

###-# Note

Spall

Delam

Patch

Cracks

Crack

BURGESS & NIPLE

CONGRESS TUNNEL

CLIENT:

OASIS TRAIL

INSPECTED BY

DATE

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OF

BURGESS & NIPLE

525 Vine Street | Suite 1300 | Cincinnati, OH 45202 | 513.579.0042

Mr. Sean Creighton, PLA, LEED AP
Project Manager
Great Parks of Hamilton County
10245 Winton Road
Cincinnati, OH 45231

Re: Great Parks of Hamilton County – Oasis Corridor
B&N Bridge Assessment – Collins Ave

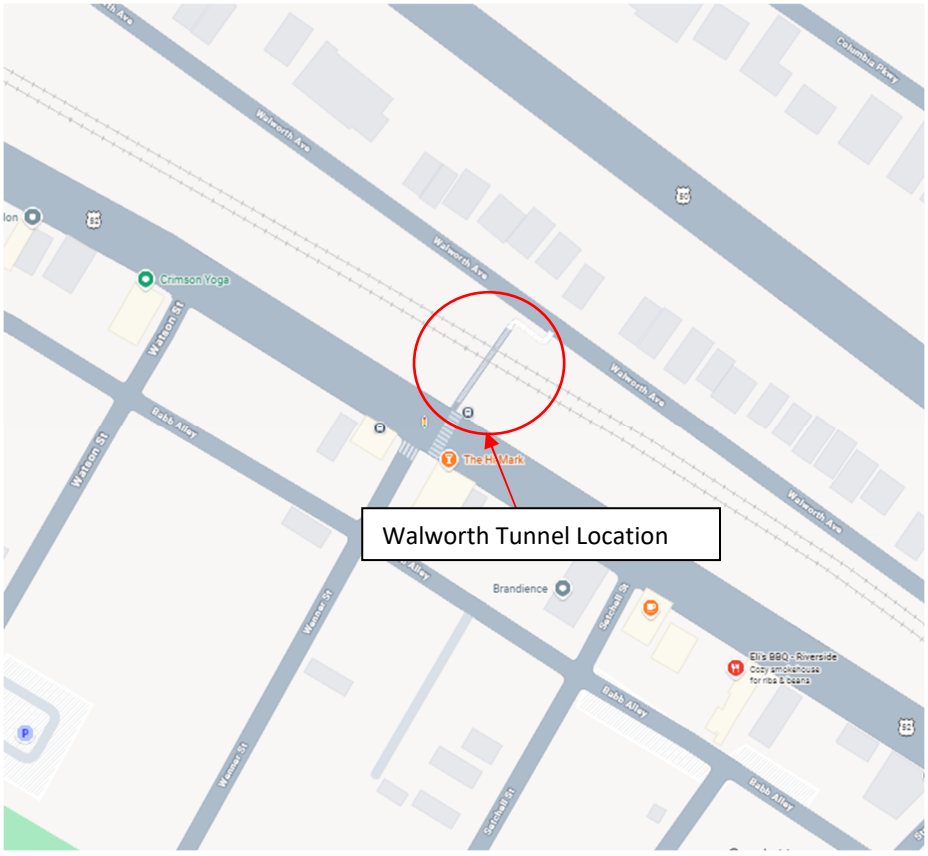
April 2, 2026

Dear Mr. Creighton:

Burgess & Niple (B&N) performed an assessment of the reinforced concrete tunnel carrying Indiana & Ohio RR over pedestrian path on January 14th & 15, 2026. The assessment focuses on the visible portions of the concrete tunnel between Eastern and Congress Ave.

The intent of this assessment is to determine areas of deficiency that need to be repaired for conversion of the north railroad track to a trail. Detailed dimensions of existing bridge members and geometry were not obtained.

LOCATION MAP



Tunnel Assessment:

Tunnel carrying Indiana & Ohio RR between Walworth Ave and US52

Summary:

The concrete walls and top slab were sounded for spalls and delaminations. Areas of deficiency are mapped in **Appendix A** below. There were isolated areas of minor spalling on the south end of the west tunnel wall. Isolated locations of minor shallow delaminations exist on both tunnel walls. Delaminations are heaviest near the north end of the tunnel.

Recommendations:

- Consider resealing the concrete on regular intervals.
- Periodically inspect the tunnel for areas of new spalls and delaminations. Remove areas of loose concrete which pose a safety hazard to pedestrians.
- Consider patching spalls and delaminations with trowelable mortar or concrete based on spall depth.

Photographs



Photo 1 – Elevation looking north.



Photo 2 – Elevation looking southwest.



Photo 3 – Top of rail over tunnel, looking east.



Photo 4 – Top of rail over tunnel, looking west.



Photo 5 – Looking north at the typical inside of tunnel condition.



Photo 6 – Looking north at the typical inside of tunnel condition.



Photo 7 – Looking southwest at the typical top of track over tunnel condition.



Photo 8 – Looking west down the north end steps. Note: minor isolated crack in the concrete steps. Flaking seal coat and insignificant width isolated cracks in retaining walls.



Photo 9 – Looking south at the overall of the above ground portion of the retaining wall from Walworth Ave.



Photo 10 – Looking west at 3’ x 1’ unsound patch on the west wall 5’ from the north end of the tunnel.



Photo 11 – Looking west at 3.5’ x 1’ delamination on the west wall 10’ from the north end of the tunnel.



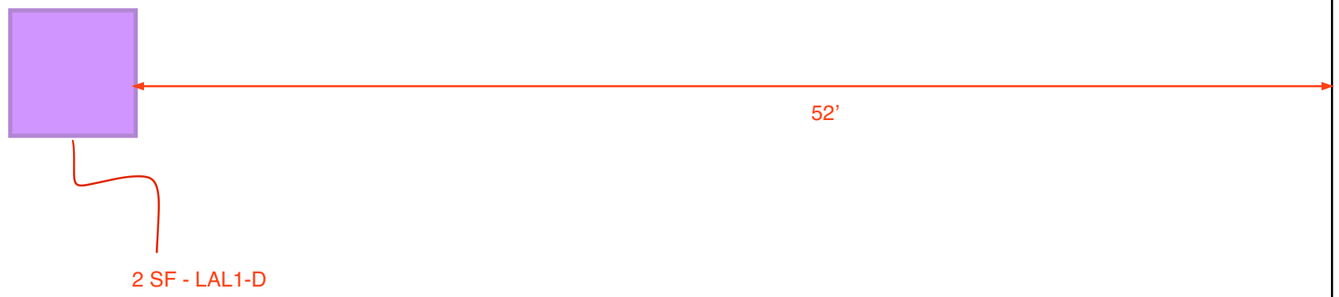
Photo 12 – Looking west at 4” diameter x 1/2” deep spall 10’ from the south end of the tunnel.



Photo 13 – Looking north at 2 SF of delaminations, 52’ from the north end of the tunnel.

Appendix A: Deficiency Callout Table

Photo #	Call Out #	Comment
Photo 10	LAL-A	3’ x 1’ unsound patch on the west wall 5’ from the north end of the tunnel.
Photo 11	LAL-B	3.5’ x 1’ delamination on the west wall 10’ from the north end of the tunnel.
Photo 12	LAL-C	4” diameter x 1/2” deep spall 10’ from the south end of the tunnel.
Photo 13	LAL-D	2 SF of delaminations, 52’ from the north end of the tunnel.



SOUTH/WEST END

NORTH/EAST END

TUNNEL SOFFIT

###-# Note

Spall

Delam

Patch

Cracks

Crack

BURGESS & NIPLE

WALWORTH TUNNEL

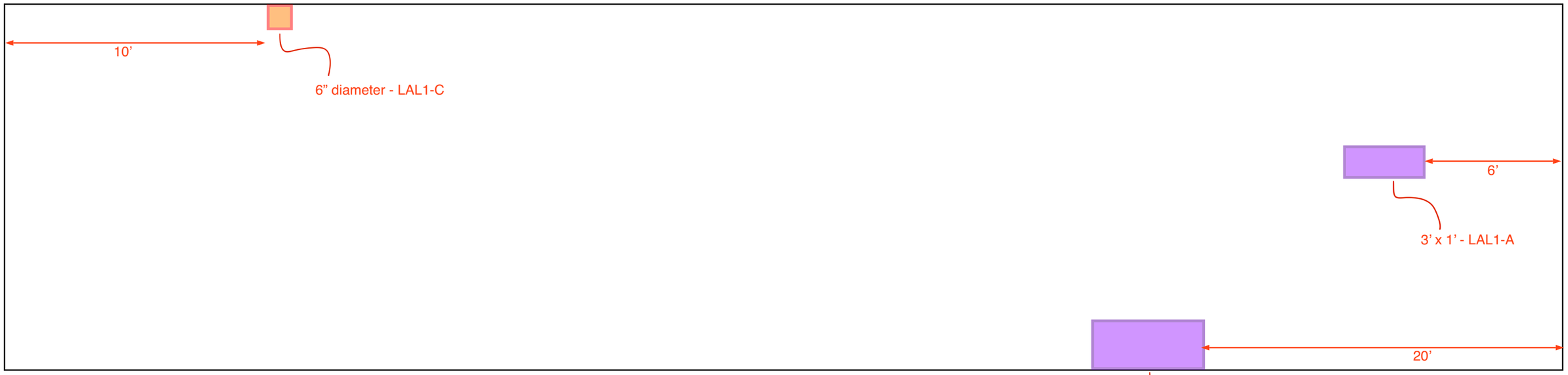
CLIENT:

OASIS TRAIL

INSPECTED BY

DATE

PAGE OF



SOUTH END

NORTH END

LEFT ELEVATION VIEW
(West Wall)

SOUTH END

NORTH END

RIGHT ELEVATION VIEW
(East Wall)

###-# Note

Spall

Delam

Patch

Cracks

Crack

BURGESS & NIPLE

WALWORTH TUNNEL

CLIENT:

OASIS TRAIL

INSPECTED BY

DATE

PAGE OF

Attachment F

BMP Calculation

Post Construction - Project Summary

Project Data			Units
	Project EDA	20	acres
	Is the Project Routine Maintenance per L&D Vol. 2, Sec. 1112.2	No	
	BMPs Required?	**BMPs Required**	NA
	Ain (New Impervious Area in New Permanent R/W	0	acres
	Does Entire Site Drain to Large River (>100 sq. miles)?	No	
	Water Quality Treatment Required	**Yes**	
	Water Quantity Treatment Required	**No**	
Treatment Percent and Treatment Requirement			
	Aix (Project EDA that is inside the existing right-of-way)	20	acres
	Ain (New Impervious Area in New Permanent R/W)	0	acres
	T% (Treatment Percent)	**20.00**	**%**
	Treatment Requirement	**4.00**	**acres**

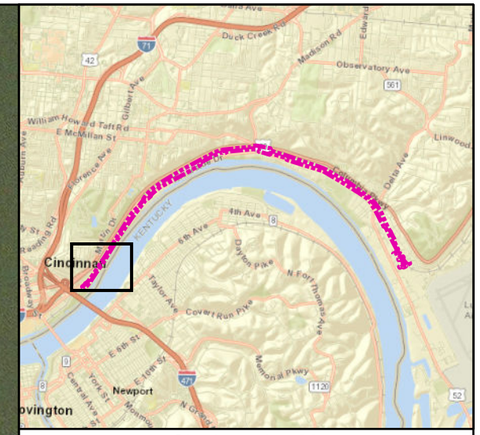
Attachment G

Environmental Mapping

Ecological Resources Maps

R:\GIS\Projects\FY2025\25-0353 Arcadis HAM-Great Parks Oasis Trail MUP PID 122971\HAM-Great Parks Oasis Trail\





Site Location Map

Legend

N

- Study Area
- Bat SWH within 100' EOP

0 100 200 400 Feet

HAM-Great Parks Oasis Trail

Ecological Resources Map

Lawhon & Associates, Inc.

Date:	Approved by:	L&A No.	Figure
Mar 2026	MC	25-0353	3-a

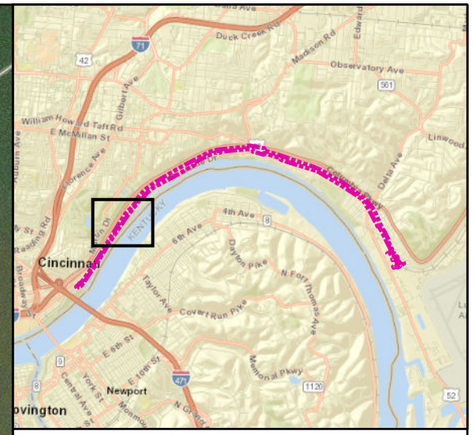
LINK-GIS/PDS, Esri, HERE, Garmin, INCREMENT P, NGA, USGS, Esri, HERE, Garmin, iPC, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Microsoft, Vantor

File Name: HAM-Great Parks Oasis Trail

Saved 3/27/2026 12:38 PM by dwilliams

R:\GIS\Projects\FY2025\25-0353 Arcadis HAM-Great Parks Oasis Trail MUP PID 122971\HAM-Great Parks Oasis Trail\





Site Location Map

Legend

N

- Study Area
- Bat SWH within 100' EOP

0 100 200 400 Feet

HAM-Great Parks Oasis Trail

Ecological Resources Map

Lawhon & Associates, Inc.

Date:	Approved by:	L&A No.	Figure
Mar 2026	MC	25-0353	3-b

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File Name: HAM-Great Parks Oasis Trail

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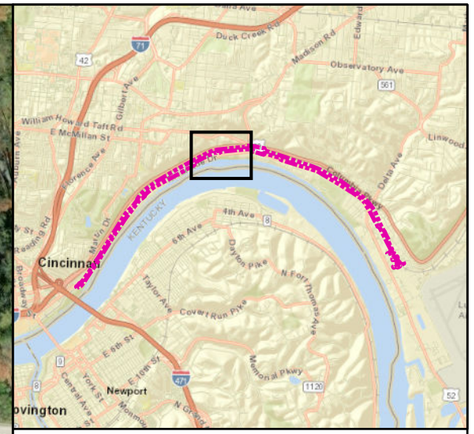
R:\GIS\Projects\FY2025\25-0353 Arcadis HAM-Great Parks Oasis Trail MUP PID 122971\HAM-Great Parks Oasis Trail\





Legend

N

- Study Area
- Bat SWH within 100' EOP
- Tunnel / Underpass
- Sample Point

0 100 200 400 Feet

HAM-Great Parks Oasis Trail

Ecological Resources Map

Lawhon & Associates, Inc.

Date:	Approved by:	L&A No.	Figure
Mar 2026	MC	25-0353	3-d

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File Name: HAM-Great Parks Oasis Trail

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HAM-Great Parks Oasis Trail

Ecological Resources Map

Lawhon & Associates, Inc.

Date:	Approved by:	L&A No.	Figure
Mar 2026	MC	25-0353	3-e

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File Name: HAM-Great Parks Oasis Trail

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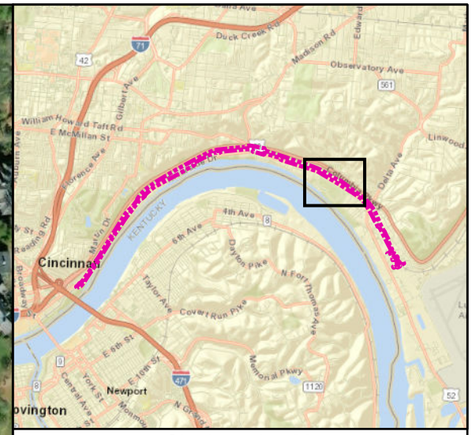

Legend

N

- Study Area
- Bat SWH within 100' EOP
- Tunnel / Underpass
- Detention Pond

0 100 200 400 Feet

HAM-Great Parks Oasis Trail

Ecological Resources Map

Lawhon & Associates, Inc.

Date:	Approved by:	L&A No.	Figure
Mar 2026	MC	25-0353	3-f

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Legend

- Study Area
- Bat SWH within 100' EOP
- Tunnel / Underpass

N

0 100 200 400 Feet

HAM-Great Parks Oasis Trail

Ecological Resources Map

Lawhon & Associates, Inc.

Date:	Approved by:	L&A No.	Figure
Mar 2026	MC	25-0353	3-g

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File Name: HAM-Great Parks Oasis Trail

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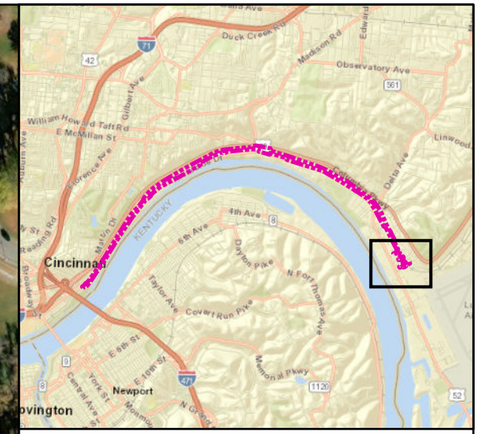

Legend

- Study Area
- Bat SWH within 100' EOP

N

0 100 200 400
Feet

HAM-Great Parks Oasis Trail

Ecological Resources Map

Lawhon & Associates, Inc.

Date:	Approved by:	L&A No.	Figure
Mar 2026	MC	25-0353	3-h

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File Name: HAM-Great Parks Oasis Trail

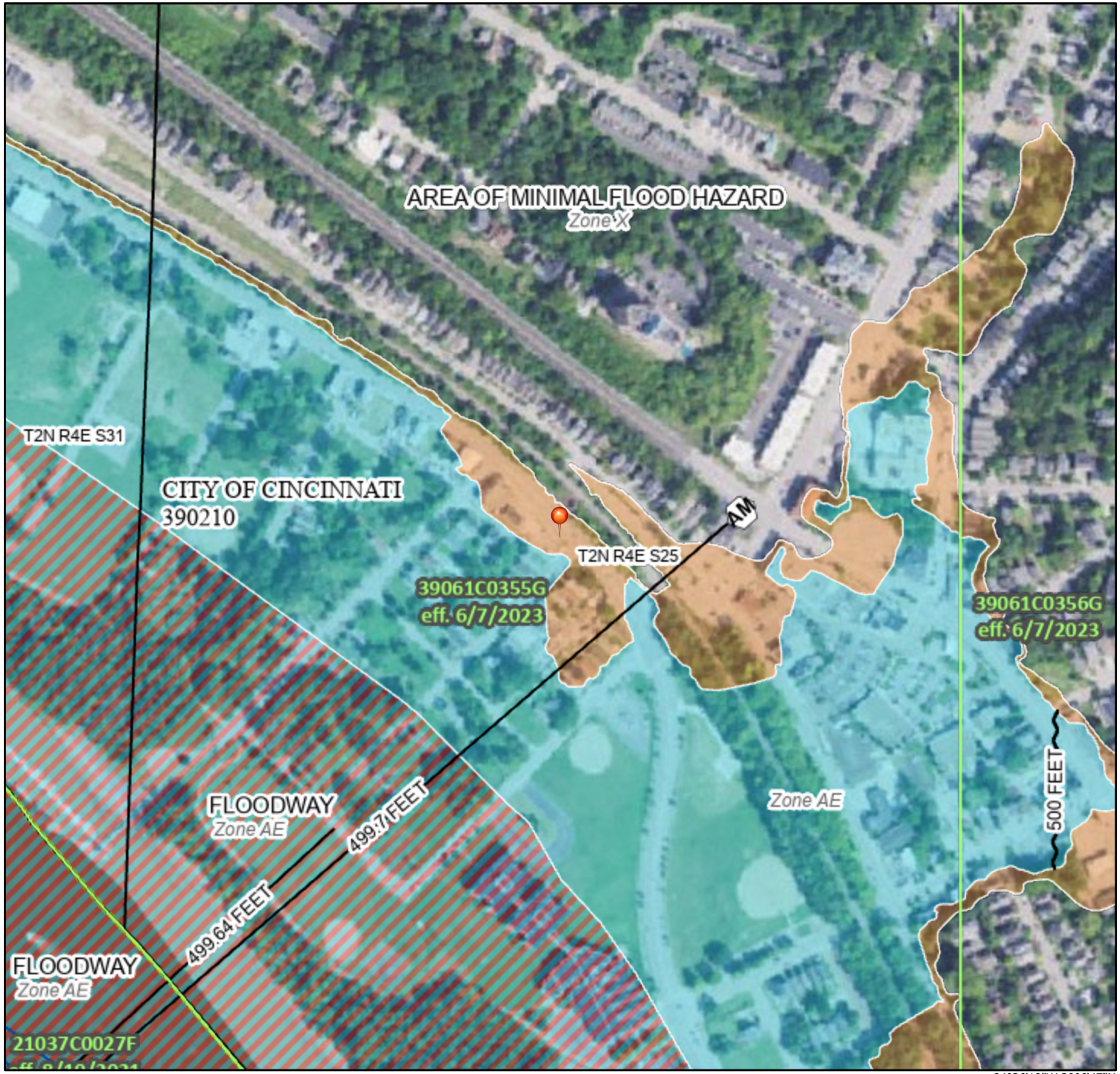
Saved 3/27/2026 12:38 PM by dwilliams

FEMA Flood Insurance Rate Map

National Flood Hazard Layer FIRMette

FEMA

84°26'47"W 39°7'15"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

84°26'10"W 39°6'47"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

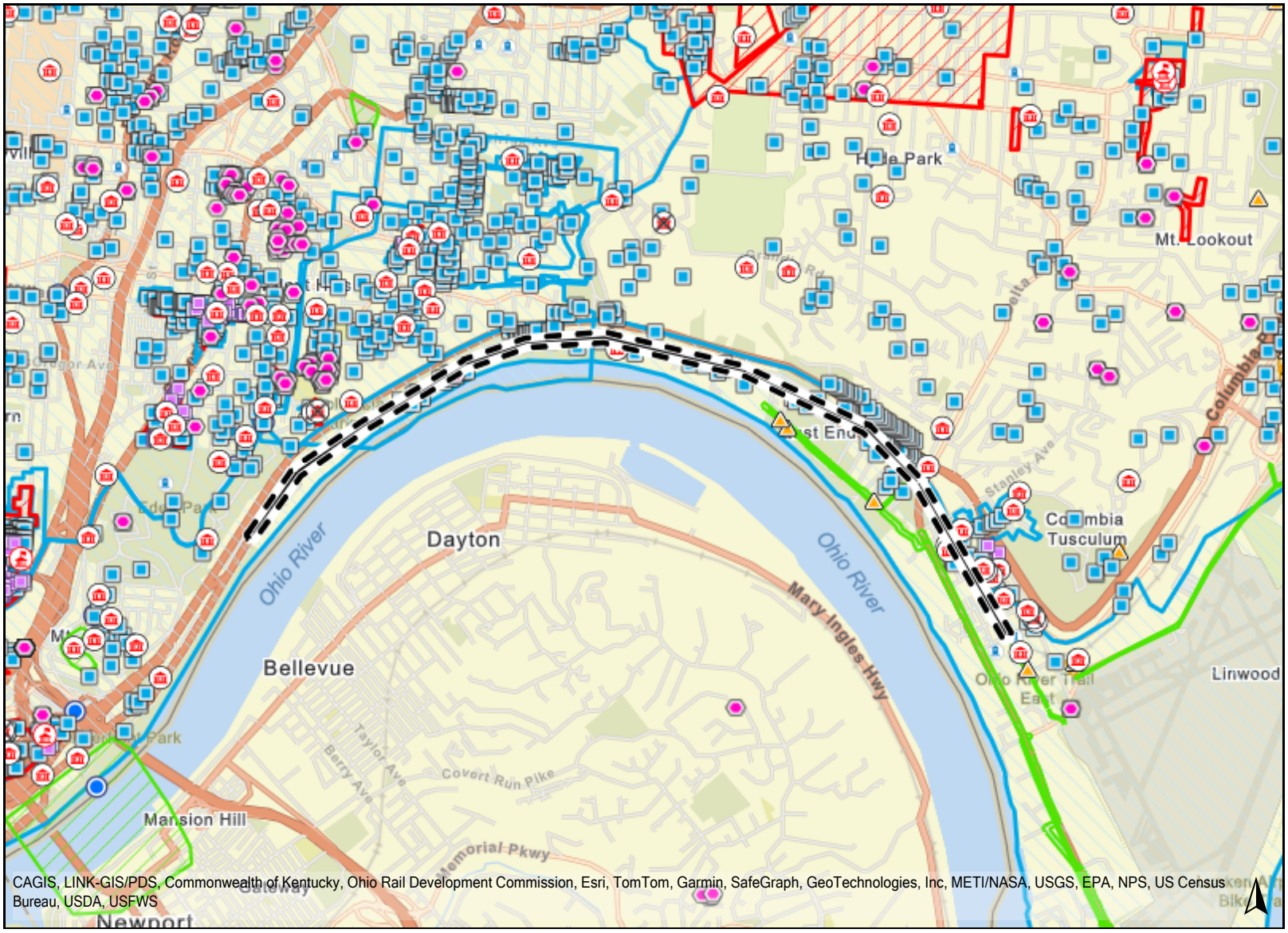
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/25/2024 at 1:31 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

OHPO Database Map

HAM-Great Parks Oasis Trail MUP (PID 122971)



Legend

National Register Listings

- Listed in the National Register
- National Historic Landmark
- Removed from National Register

SHPO Determinations

- Archaeology Determinations
- Historic Determinations
- Determination Boundaries
- Federal Tax Credit Projects
- Historic Inventory

Archaeological Inventory

- Archaeological Inventory
- OAI Boundaries

Notes

Created by:

0 1 2 mi

This map is a user generated static output from the OSHPO mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable..

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Land & Water Conversation Fund (LWCF) Grant Listing

Section 6(f) County Map

Land and Water Conservation Fund Summary Report

Ohio; Hamilton County

(**Unofficial report**; contact us to learn where to find official information: https://lwcf.tplgis.org/contact)

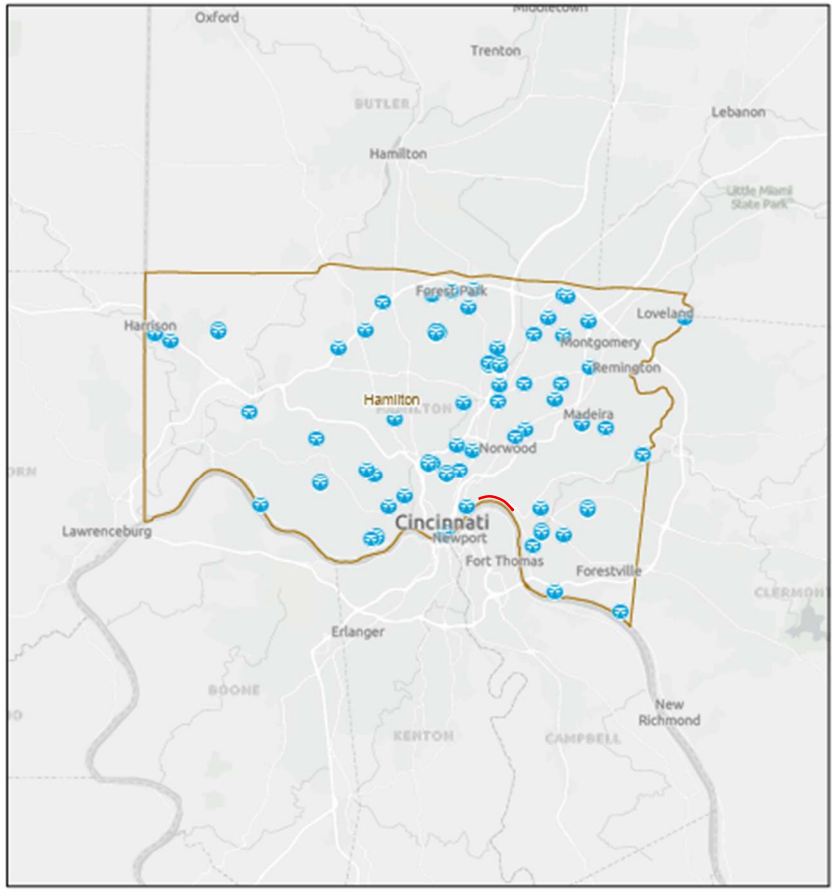
September 10, 2025

Number of projects funded:
76
Year range of funding:
1968 - 2019
Total funding received (estimate):
$10,700,000

Legend

Project funded by LWCF

State and Local Assistance Program (76)



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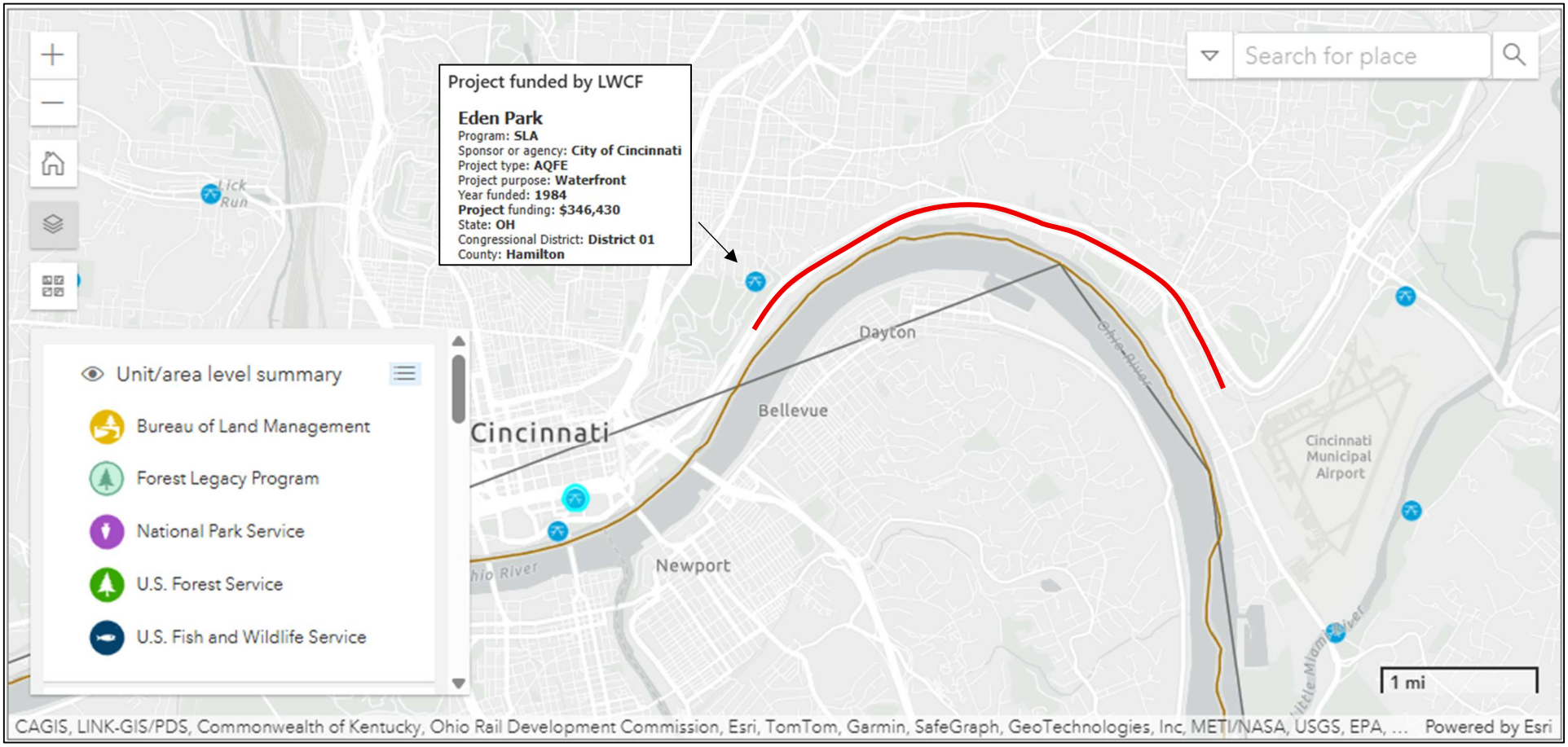
HAM-Great Parks Oasis Trail PID 122971
Cincinnati, OH
L&A No: 25-0353
Date Accessed: 09/10/2025
Map courtesy of The LWCF - Trust for Public Land GIS
https://lwcf.tplgis.org/mappast/

Legend:
Project Area

N

Section 6(f) Project Area Map



HAM-Great Parks Oasis Trail PID 122971
Cincinnati, OH
L&A No: 25-0353
Date Accessed: 09/10/2025
Map courtesy of The LWCF - Trust for Public Land GIS
https://lwcf.tplgis.org/mappast/

Legend:
Project Area

N

Section 6(f) County Report Data

Program	State	County	Municipality	Congressional District	Sponsor or agency	Project name	Other project name	Unit or area name	Project purpose	Project type	Year funded	LWCF funding by selected filter
State and Local Assistance	OH	Hamilton	Forest Park	District 08	City of Forest Park	3 Forest Park		3 Forest Park	Recreational Parks	AQFE	1968	97725
State and Local Assistance	OH	Hamilton	Blue Ash	District 01	City of Blue Ash	Amtheatre Center		Amtheatre Center		DEV	1977	86645
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Avon Woods Outdoor Center		Avon Woods Outdoor Center		DEV	1969	67722
State and Local Assistance	OH	Hamilton	Sycamore	District 01	Township of Sycamore	Bechtold Trail		Bechtold Trail		DEV	1991	10137
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Bracken Woods		Bracken Woods		AQFE	1975	74675
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Caldwell/Seymour Trail		Caldwell/Seymour Trail		DEV	2002	47010
State and Local Assistance	OH	Hamilton	Springdale	District 08	Village of Springdale	Cameron Road Park		Cameron Road Park		AQFE	1969	8450
State and Local Assistance	OH	Hamilton	Indian Hill	District 01	City of Indian Hill	Camp Livingston		Camp Livingston		AQFE	1971	7000
State and Local Assistance	OH	Hamilton	Forest Park	District 08	City of Forest Park	Central Park		Central Park		DEV	1970	72227
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Central Riverfront Park		Central Riverfront Park	Phase II	DEV	1973	1037237
State and Local Assistance	OH	Hamilton	Deer Park	District 01	City of Deer Park	Chamberlain Park		Chamberlain Park		DEV	1990	27061
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Cincinnati Bike & Hike Trail		Cincinnati Bike & Hike Trail		DEV	1973	25000
State and Local Assistance	OH	Hamilton	Cincinnati	District 08	City of Cincinnati	Cincinnati Boating		Cincinnati Boating		DEV	1973	296200
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Cincinnati Zoo		Cincinnati Zoo		DEV	1980	342107
State and Local Assistance	OH	Hamilton	Colerain	District 08	Township of Colerain	Clippard Park		Clippard Park		DEV	1976	40170
State and Local Assistance	OH	Hamilton	Sharonville	District 08	City of Sharonville	Community Center Park		Community Center Park	Phase II	DEV	1973	196288
State and Local Assistance	OH	Hamilton	Lincoln Heights	District 08	City of Lincoln Heights	Community Pool		Community Pool		DEV	1978	245000
State and Local Assistance	OH	Hamilton	Springdale	District 08	City of Springdale	Community Recreation Center		Community Recreation Center		DEV	1973	151765
State and Local Assistance	OH	Hamilton	Newtown	District 01	Village of Newtown	Debolts Playfield		Debolts Playfield		DEV	1981	34295
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Eden Park		Eden Park	Waterfront	AQFE	1984	346430
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Edgewood Grove		Edgewood Grove		AQFE	1975	125000
State and Local Assistance	OH	Hamilton	Whitewater	District 08	Township of Whitewater	Elizabethtown Park		Elizabethtown Park		DEV	1980	3245
State and Local Assistance	OH	Hamilton		District 01	Hamilton County	Embshoff Nature Preserve		Embshoff Nature Preserve		AQFE	1978	210734
State and Local Assistance	OH	Hamilton	Evendale	District 01	Village of Evendale	Evendale Community Park		Evendale Community Park		AQFE	1972	130000
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Felter's Tanglewood Park		Felter's Tanglewood Park		AQFE	1977	228600
State and Local Assistance	OH	Hamilton	Indian Hill	District 01	Village of Indian Hill	Fleischman Extension		Fleischman Extension		AQFE	1977	137500
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Fleischmann Gardens		Fleischmann Gardens	Addition	AQFE	1975	5175
State and Local Assistance	OH	Hamilton	Forest Park	District 08	City of Forest Park	Forest Park		Forest Park		AQFE	1981	292003
State and Local Assistance	OH	Hamilton	Lockland	District 08	City of Lockland	Garder Field		Garder Field		DEV	1978	88972
State and Local Assistance	OH	Hamilton	Indian Hill	District 01	Village of Indian Hill	Given - Green Area		Given - Green Area		AQFE	1976	81861
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Glenway Woods		Glenway Woods		AQFE	1977	18700
State and Local Assistance	OH	Hamilton	Harrison	District 08	Village of Harrison	Governor Looker Park		Governor Looker Park		DEV	1979	59073
State and Local Assistance	OH	Hamilton	Green	District 08	Township of Green	Green Township Park		Green Township Park		DEV	1977	63043
State and Local Assistance	OH	Hamilton	Harrison	District 08	Village of Harrison	Harrison Center		Harrison Center		AQFE	1977	94323
State and Local Assistance	OH	Hamilton	Blue Ash	District 01	City of Blue Ash	Hazelwood Park		Hazelwood Park		AQFE	1971	6225
State and Local Assistance	OH	Hamilton	Blue Ash	District 01	City of Blue Ash	Hazelwood Park		Hazelwood Park		DEV	1974	18840
State and Local Assistance	OH	Hamilton	Wyoming	District 08	OH Dept. of Natural Resources	Kattelmann Property		Kattelmann Property	Improvements	DEV	2019	456549
State and Local Assistance	OH	Hamilton	Anderson	District 01	Anderson Park Dist.	Kellogg Park		Kellogg Park		DEV	1987	60399
State and Local Assistance	OH	Hamilton	Anderson	District 01		Kellogg Park		Kellogg Park	Playground	DEV	2014	29783
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Kennedy Heights Recreation Area		Kennedy Heights Recreation Area		AQDV	1978	125000



HAM-Great Parks Oasis Trail PID 122971
Cincinnati, OH
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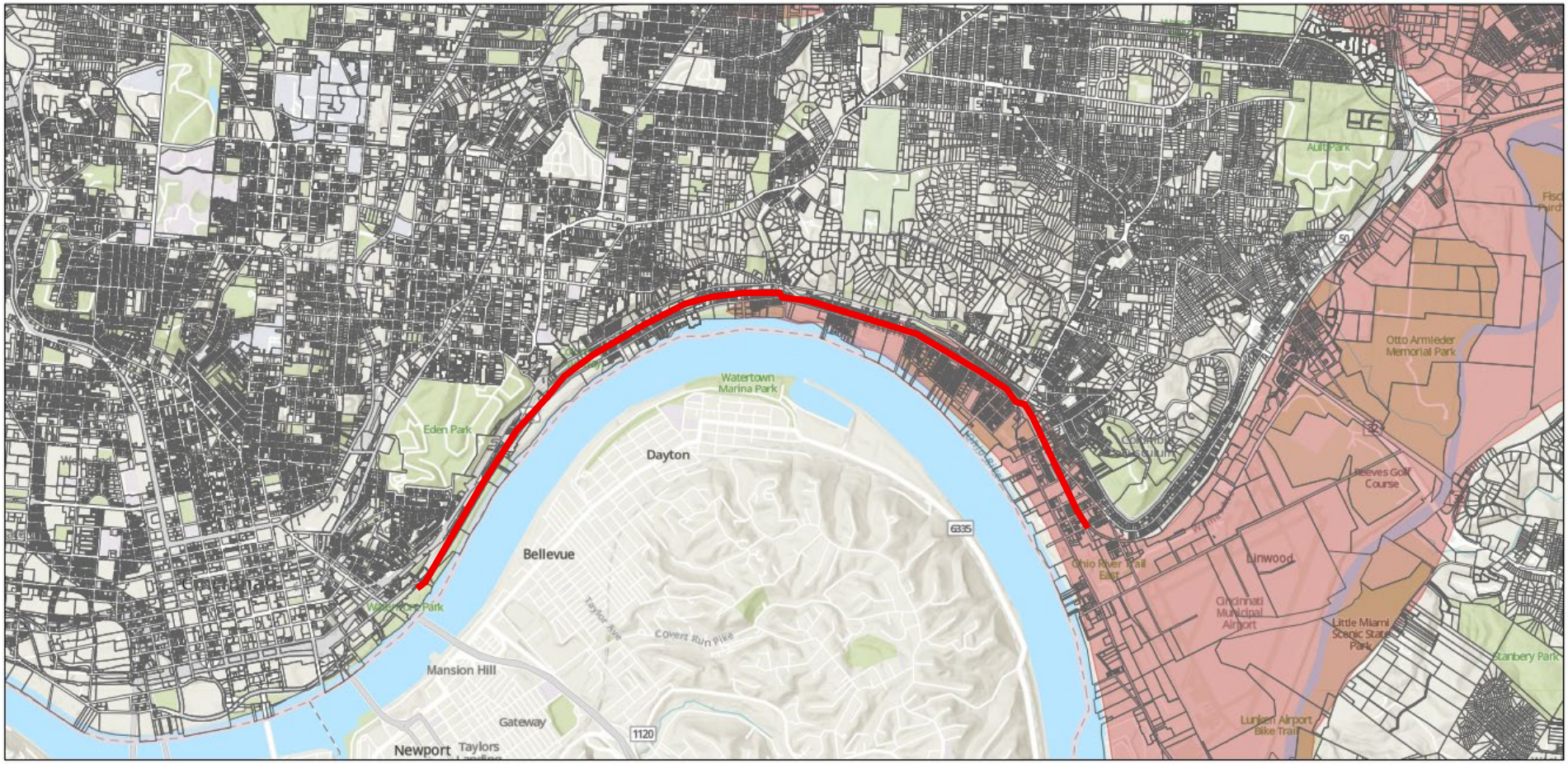
Map courtesy of The LWCF - Trust for Public Land GIS
https://lwcf.tplgis.org/mappast/

Section 6(f) County Report Data

State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Little Miami Scenic River Park	Little Miami Scenic River Park		AQFE	1974	114251
State and Local Assistance	OH	Hamilton	Harrison	District 08	Village of Harrison	Looker Park	Looker Park	Phase II	DEV	1980	26663
State and Local Assistance	OH	Hamilton	Harrison	District 08	Village of Harrison	Looker Park	Looker Park		DEV	1986	66271
State and Local Assistance	OH	Hamilton	Loveland	District 01	City of Loveland	Loveland Park	Loveland Park	Park	AQDV	1981	86770
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Magrish	Magrish	Addition	AQFE	1986	54420
State and Local Assistance	OH	Hamilton	Elmwood Place	District 01	Village of Elmwood Place	Maple Street Pool	Maple Street Pool		DEV	1979	52362
State and Local Assistance	OH	Hamilton	Norwood	District 01	City of Norwood	Mccoullough Park	Mccoullough Park		AQFE	1984	297849
State and Local Assistance	OH	Hamilton	Madeira	District 01	City of Madeira	Mcdonald Commons	Mcdonald Commons		DEV	1985	85641
State and Local Assistance	OH	Hamilton		District 08	Hamilton County	Mitchell Forest	Mitchell Forest		AQFE	1979	404806
State and Local Assistance	OH	Hamilton		District 08	Hamilton County	Newberry Park	Newberry Park		AQFE	1975	102979
State and Local Assistance	OH	Hamilton	Newtown	District 01	Village of Newtown	Newtown Village Park	Newtown Village Park		AQFE	1969	25000
State and Local Assistance	OH	Hamilton	Cincinnati	District 08	City of Cincinnati	North Avondale Park	North Avondale Park		AQFE	1971	19350
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	North Fairmount Park	North Fairmount Park		AQFE	1971	60000
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Northside Woods	Northside Woods		AQDV	1973	63119
State and Local Assistance	OH	Hamilton		District 01	Hamilton County	Paul Woods Nature Preserve	Paul Woods Nature Preserve		AQDV	1975	200000
State and Local Assistance	OH	Hamilton	Reading	District 01	City of Reading	Reading Swim Center	Reading Swim Center		DEV	1977	237000
State and Local Assistance	OH	Hamilton	Lockland	District 08		Richardson Park	Richardson Park	Restroom Facilities	DEV	2014	23478
State and Local Assistance	OH	Hamilton	Lockland	District 08	Village of Lockland	Richardson Park	Richardson Park	Restroom Developr	DEV	2015	29347
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Riverfront Park	Riverfront Park	Phase III	DEV	1973	509947
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Riverfront Park	Riverfront Park	Phase 4	AQDV	1974	888489
State and Local Assistance	OH	Hamilton	Cincinnati	District 01		Ryan Sports Complex	Ryan Sports Complex	Renovation	DEV	2013	70000
State and Local Assistance	OH	Hamilton	Cincinnati	District 01		Ryan Sports Complex	Ryan Sports Complex	Renovation	DEV	2014	88613
State and Local Assistance	OH	Hamilton		District 08	OH Dept. of Natural Resources	Sharon Lake	Sharon Lake	Recreational Impro	DEV	2019	500000
State and Local Assistance	OH	Hamilton	Sharonville	District 08	City of Sharonville	Sharonville Community Center	Sharonville Community Center		AQFE	1970	48000
State and Local Assistance	OH	Hamilton		District 08	Hamilton County	Southeast Park	Southeast Park	Addition	AQFE	1977	147728
State and Local Assistance	OH	Hamilton	Cincinnati	District 01	City of Cincinnati	Stanberry Park	Stanberry Park	Addition	AQFE	1976	23000
State and Local Assistance	OH	Hamilton	Montgomery	District 01	City of Montgomery	Swaim Field	Swaim Field		DEV	1979	150000
State and Local Assistance	OH	Hamilton	Terrace Park	District 01	Village of Terrace Park	Terrace Park	Terrace Park		DEV	2006	126818
State and Local Assistance	OH	Hamilton	Terrace Park	District 01	Village of Terrace Park	Terrace Park	Terrace Park		DEV	2006	148893
State and Local Assistance	OH	Hamilton	Villge of Arlingt	District 01	Villge of Arlington Heights	Town Hall Park	Town Hall Park		DEV	1994	3877
State and Local Assistance	OH	Hamilton		District 08	Hamilton County	Triple Creek Park	Triple Creek Park		AQDV	1979	144950
State and Local Assistance	OH	Hamilton		District 08	Hamilton County	Winton Woods Park	Winton Woods Park		AQDV	1972	33000
State and Local Assistance	OH	Hamilton	Cincinnati	District 08	City of Cincinnati	Woodland Golf Course	Woodland Golf Course		AQFE	1973	110000
State and Local Assistance	OH	Hamilton		District 01	Hamilton County	Woodland Mound Park	Woodland Mound Park		AQFE	1975	104879
State and Local Assistance	OH	Hamilton	Wyoming	District 08	City of Wyoming	Wyoming Park	Wyoming Park		DEV	1984	116150
State and Local Assistance	OH	Hamilton	Cincinnati	District 08	City of Cincinnati	Yale & Kemper Park	Yale & Kemper Park		AQFE	1971	49983

Drinking Water Protection Area Map

Drinking Water Protection Areas Map



5/12/2026, 8:39:42 AM

Parcels (Ohio)

Sole Source Aquifers

World_Hillshade

1:39,665

0 0.35 0.7 1.4 mi

0 0.5 1 2 km

Sources: Esri, Vantor, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community, Division of Drinking and Ground Waters, Ohio EPA, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, ©

HAM-Great Parks Oasis Trail PID 122971
Cincinnati, OH
L&A No: 25-0353
Date Accessed: 05/12/2026
Map courtesy of Ohio EPA Division of Drinking and Ground Waters
https://geo.epa.ohio.gov/portal/apps/experiencebuilder/experience/?id=0e4135cb7e1a40509ed321cddaae1407

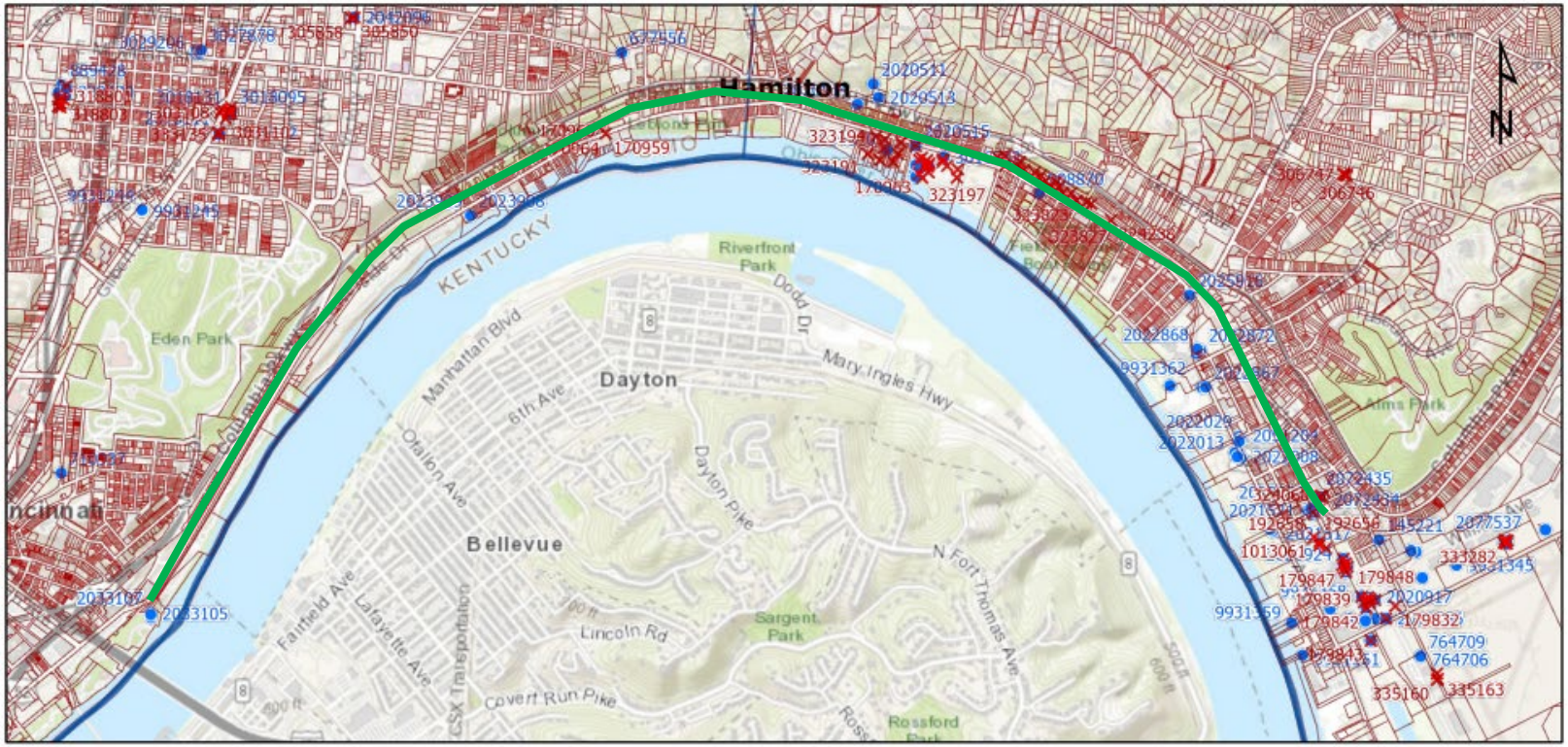
Legend:

- Project Area
- Source Water Protection Area
- Inner Management Zone
- Sole Source Aquifers
- Corridor Management Zone

N

Water Well Map

Water Well/Sealing Report Map



Statewide Parcels
Current Township
Counties
Sealing Reports

May 12, 2026

Scale: 1:35,962

0 0.2 0.4 0.8 mi
0 0.42 0.85 1.7 km

HAM-Great Parks Oasis Trail PID 122971
Cincinnati, OH
L&A No: 25-0353
Date Accessed: 05/12/2026
Map courtesy of ODNR Water Well Database
https://waterwells.ohiodnr.gov/search/interactive-search

Legend:
Project Area

N

Water Well/Sealing Report Data

Record No	Street Number	Street Name	County	Township	Total Depth	Owner Last Name	Well Use	Static Water Level	Latitude	Longitude	Date of Sealing
324238	3230	WALWORTH	HAMILTON	COLUMBIA	27.5	EAST END DEVELOPERS, LLC	MONITOR	17.7	39.11946	-84.44469	5/21/2019
323827		WALWORTH	HAMILTON	COLUMBIA	27.5	WALWORTH OPPORTUNITIES, LLC	MONITOR	17.6	39.11946	-84.44469	5/20/2019
323812		WALWORTH	HAMILTON	COLUMBIA	30.5	WALWORTH OPPORTUNITIES, LLC	MONITOR	17.8	39.12167	-84.45029	5/20/2019

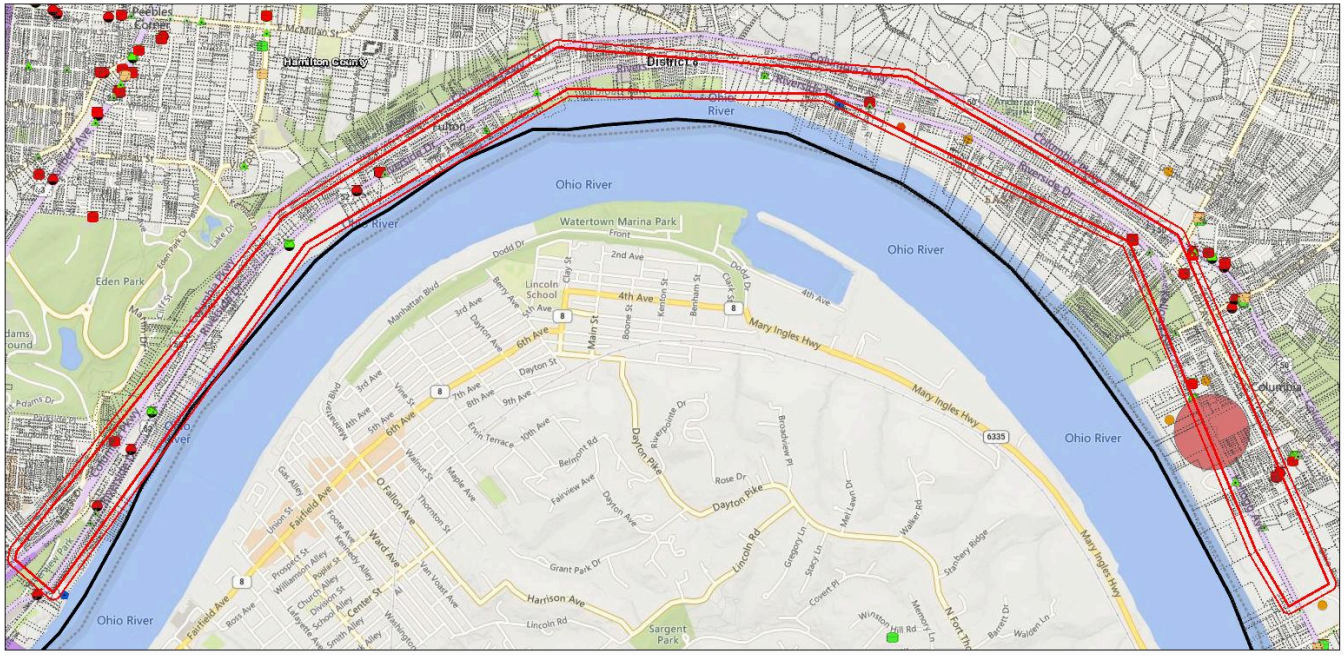
Ohio Regulated Properties Search (ORPS) Report

ORPS Summary Report

Area of Interest (AOI) Information

Area : 447.21 acres

Sep 25 2024 13:35:22 Eastern Daylight Time



Summary

Name	Count	Area(acres)	Length(ft)
SEMS - Non-NPL Sites w/buffer (US EPA)	1	13.89	N/A
SEMS - NPL Sites w/buffer (US EPA)	0	0	N/A
RCRA (US EPA)	18	N/A	N/A
RCRA - TSD Sites w/buffer (US EPA)	0	0	N/A
Federal Engineering Controls (US EPA)	0	N/A	N/A
Federal Institutional Controls (US EPA)	0	N/A	N/A
BUSTR - UST Locations (BUSTR/OGRIP)	27	N/A	N/A
BUSTR - LUST Locations (BUSTR/OGRIP)	22	N/A	N/A
Coal Gas Generators (OEPA-DERR)	1	N/A	N/A
DERR Database (OEPA-DERR)	2	N/A	N/A
Impoundment Sites (OEPA-DERR)	0	N/A	N/A
Landfills - Active Solid Waste Facilities w/buffer (OEPA-DMWM)	0	0	N/A
Landfills - Historic/Abandoned Facilities w/buffer (OEPA-DMWM/DERR)	0	0	N/A
Landfills - Solid Waste Facility Polygons (OEPA-DMWM)	0	0	N/A
Projects With Engineering Controls (OEPA-DERR)	0	N/A	N/A
Projects With Institutional Controls (OEPA-DERR)	2	N/A	N/A
Spills Database (OEPA)	2	N/A	N/A
VAP Sites (OEPA-DERR)	2	N/A	N/A
Potential Areas of Concern (ODOT-OES)	0	0	N/A

SEMS - Non-NPL Sites w/buffer (US EPA)

#	REGISTRY_ID	PRIMARY_NAME	ADDRESS	CITY	STATE	ZIP	LAST_REPORTED_DATE	URL
1	110054629176	KINDER MORGAN EMERGENCY RESPONSE	3806 KELLOGG AVE	CINCINNATI	OH	45268	*No Data*	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110054629176

#	PGM_SYS_ID	PGM_SYS_ACRONYM	INTEREST_TYPE	REFERENCE_POINT_DESC	Area(acres)
1	OHN000510869	SEMS	SUPERFUND (NON-NPL)	CENTER OF A FACILITY OR STATION	13.89

RCRA (US EPA)

#	REGISTRY_ID	PRIMARY_NAME	ADDRESS	CITY	STATE	ZIP	LAST_REPORTED_DATE	URL
1	110004713882	LINK MARKETING & DATA SERVICES	1727 EASTERN AVE	CINCINNATI	OH	45202-1710	10/16/2014	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110004713882
2	110004624951	MIKE'S BODY SHOP	3924 KELLOGG AVE	CINCINNATI	OH	45226	10/16/2014	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110004624951
3	110032654811	RAILROAD BRIDGE OVER STANLEY AVE	212 STANLEY AVE	CINCINNATI	OH	45226	4/28/2015	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110032654811
4	110004594145	LACKNER SIGN CO	1120 EASTERN AVE	CINCINNATI	OH	45202-1706	4/28/2015	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110004594145
5	110004734173	PENDLETON HERITAGE CENTER	2760 EASTERN AVENUE	CINCINNATI	OH	45202-1860	4/28/2015	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110004734173
6	110043554150	THE VERDIN COMPANY	3900 KELLOGG AVE	CINCINNATI	OH	45226	4/28/2015	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110043554150
7	110004648917	GRUBB OIL CO	1925 EASTERN AVE	CINCINNATI	OH	45202	4/14/2015	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110004648917

8	110032654820	RAILROAD BRIDGE OVER EASTERN AVE	3450 EASTERN AVE	CINCINNATI	OH	45226	3/29/2019	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110032654820
9	110001625554	I T VERDIN CO	2021 EASTERN AVE	CINCINNATI	OH	45202-1898	10/16/2014	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110001625554
10	110054220375	QUEEN CITY TERMINALS LLC (1431072036)	3801 KELLOGG AVENUE	CINCINNATI	OH	45226	3/11/2019	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110054220375
11	110000577536	QUEEN CITY TERMINAL	3806 KELLOGG AVENUE	CINCINNATI	OH	45226-1516	3/13/2015	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110000577536
12	110000577536	QUEEN CITY TERMINAL	3806 KELLOGG AVENUE	CINCINNATI	OH	45226-1516	4/28/2015	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110000577536
13	110054857605	OCCIDENTAL CHEMICAL STORAGE TANK @ KINDER MORGAN TERMINAL	3806 KELLOGG AVE	CINCINNATI	OH	45226	4/11/2019	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110054857605
14	110009660642	CINCINNATI PWS MAIN PUMP	2545 EASTERN AVE	CINCINNATI	OH	45202-1815	10/16/2014	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110009660642
15	110004670892	CINCINATI CITY OF	1108 EASTERN AVE	CINCINNATI	OH	45202	4/14/2015	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110004670892

16	110004641610	CIN GAS & ELECTIC CO EASTEN AVE GAS PLNT	2801 EASTERN AVE	CINCINNATI	OH	45226-1006	12/18/2019	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110004641610
17	110004641610	CIN GAS & ELECTIC CO EASTEN AVE GAS PLNT	2801 EASTERN AVE	CINCINNATI	OH	45226-1006	4/28/2015	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110004641610
18	110004613188	FLERLAGE MARINE	2233 EASTERN AVE	CINCINNATI	OH	45202	10/16/2014	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110004613188

#	PGM_SYS_ID	PGM_SYS_ACRONYM	INTEREST_TYPE	REFERENCE_POINT_DESC	Count
1	OHR000009340	RCRAINFO	CESQG	ENTRANCE POINT OF A FACILITY OR STATION	1
2	OHD081587404	RCRAINFO	SQG	CENTER OF A FACILITY OR STATION	1
3	OHR000143610	RCRAINFO	UNSPECIFIED UNIVERSE	ENTRANCE POINT OF A FACILITY OR STATION	1
4	OHD004253613	RCRAINFO	UNSPECIFIED UNIVERSE	ENTRANCE POINT OF A FACILITY OR STATION	1
5	OHR000037150	RCRAINFO	UNSPECIFIED UNIVERSE	ENTRANCE POINT OF A FACILITY OR STATION	1
6	OHR000164038	RCRAINFO	SQG	CENTER OF A FACILITY OR STATION	1
7	OHD981960370	RCRAINFO	UNSPECIFIED UNIVERSE	ENTRANCE POINT OF A FACILITY OR STATION	1
8	OHR000143628	RCRAINFO	UNSPECIFIED UNIVERSE	ENTRANCE POINT OF A FACILITY OR STATION	1
9	OHD986990125	RCRAINFO	SQG	PLANT ENTRANCE (GENERAL)	1
10	OHP500010640	RCRAINFO	LQG	CENTER OF A FACILITY OR STATION	1
11	OHD071270656	RCRAINFO	CESQG	PLANT ENTRANCE (GENERAL)	1
12	OHR000111450	RCRAINFO	UNSPECIFIED UNIVERSE	PLANT ENTRANCE (GENERAL)	1
13	OHR000175331	RCRAINFO	UNSPECIFIED UNIVERSE	CENTER OF A FACILITY OR STATION	1
14	OHD986968055	RCRAINFO	SQG	ENTRANCE POINT OF A FACILITY OR STATION	1
15	OHD987002268	RCRAINFO	UNSPECIFIED UNIVERSE	ENTRANCE POINT OF A FACILITY OR STATION	1
16	OHD981194509	RCRAINFO	UNSPECIFIED UNIVERSE	ENTRANCE POINT OF A FACILITY OR STATION	1
17	OHD981194509	RCRAINFO	CESQG	ENTRANCE POINT OF A FACILITY OR STATION	1
18	OHD052151487	RCRAINFO	SQG	ENTRANCE POINT OF A FACILITY OR STATION	1

BUSTR - UST Locations (BUSTR/OGRIP)

#	FACILITY_ID	CURRENT_FACILITY_NAME	ADDRESS	CITY	ZIP	Status	INSPECTION_DATE	FACILITY_CO
1	31000193	VALUE OIL CO.	2740 EASTERN AVE	CINCINNATI	45202	REM	*No Data*	*No Data*
2	31000193	VALUE OIL CO.	2740 EASTERN AVE	CINCINNATI	45202	REM	*No Data*	*No Data*
3	31000193	VALUE OIL CO.	2740 EASTERN AVE	CINCINNATI	45202	REM	*No Data*	*No Data*
4	31000193	VALUE OIL CO.	2740 EASTERN AVE	CINCINNATI	45202	REM	*No Data*	*No Data*
5	31000193	VALUE OIL CO.	2740 EASTERN AVE	CINCINNATI	45202	REM	*No Data*	*No Data*
6	31000552	SITE STORE #80	1903 RIVERSIDE DRIVE (EASTERN AV	CINCINNATI	45202	REM	*No Data*	*No Data*
7	31000552	SITE STORE #80	1903 RIVERSIDE DRIVE (EASTERN AV	CINCINNATI	45202	REM	*No Data*	*No Data*
8	31000552	SITE STORE #80	1903 RIVERSIDE DRIVE (EASTERN AV	CINCINNATI	45202	REM	*No Data*	*No Data*
9	31000552	SITE STORE #80	1903 RIVERSIDE DRIVE (EASTERN AV	CINCINNATI	45202	REM	*No Data*	*No Data*
10	31002617	CITY OF CINCINNATI	1270 COLUMBIA PKWY	CINCINNATI	45202	REM	*No Data*	*No Data*
11	31002617	CITY OF CINCINNATI	1270 COLUMBIA PKWY	CINCINNATI	45202	REM	*No Data*	*No Data*
12	31007196	CITY OF CINCINNATI	3401 EASTERN AVE	CINCINNATI	45226	REM	*No Data*	*No Data*
13	31007780	RICH'S STERN DRIVE & MARINE	3405 EASTERN AVE	CINCINNATI	45226	REM	*No Data*	*No Data*
14	31007780	RICH'S STERN DRIVE & MARINE	3405 EASTERN AVE	CINCINNATI	45226	REM	*No Data*	*No Data*
15	31007780	RICH'S STERN DRIVE & MARINE	3405 EASTERN AVE	CINCINNATI	45226	REM	*No Data*	*No Data*
16	31007780	RICH'S STERN DRIVE & MARINE	3405 EASTERN AVE	CINCINNATI	45226	REM	*No Data*	*No Data*
17	31010409	GEORGE BRANDSTETTER & SONS	4021 DUMONT (NE C/O LOT)	CINCINNATI	45226	REM	*No Data*	*No Data*

18	31010409	GEORGE BRANDSTETTER & SONS	4021 DUMONT (NE C/O LOT)	CINCINNATI	45226	REM	*No Data*	*No Data*
19	31010581	ONE MAN'S TRASH, INC.	3766 KELLOGG AVE.	CINCINNATI	45226	REM	*No Data*	*No Data*
20	31010581	ONE MAN'S TRASH, INC.	3766 KELLOGG AVE.	CINCINNATI	45226	REM	*No Data*	*No Data*
21	31010581	ONE MAN'S TRASH, INC.	3766 KELLOGG AVE.	CINCINNATI	45226	REM	*No Data*	*No Data*
22	31010645	COLUMBIA COMMONS/ORPH AN TANK	3511 COLUMBIA PARKWAY	CINCINNATI	45226	REM	*No Data*	*No Data*
23	31010645	COLUMBIA COMMONS/ORPH AN TANK	3511 COLUMBIA PARKWAY	CINCINNATI	45226	REM	*No Data*	*No Data*
24	31010645	COLUMBIA COMMONS/ORPH AN TANK	3511 COLUMBIA PARKWAY	CINCINNATI	45226	REM	*No Data*	*No Data*
25	31010645	COLUMBIA COMMONS/ORPH AN TANK	3511 COLUMBIA PARKWAY	CINCINNATI	45226	REM	*No Data*	*No Data*
26	31010645	COLUMBIA COMMONS/ORPH AN TANK	3511 COLUMBIA PARKWAY	CINCINNATI	45226	REM	*No Data*	*No Data*
27	31010685	COLUMBIA SQUARE/CELL TOWER SITE	3526 EASTERN AVE	CINCINNATI	45226	REM	*No Data*	*No Data*

#	TANK_ID	CAPACITY	CONTENT	DATE_REMOVED	FACILITY_STATUS	Count
1	T00001	8000	Gasoline	11/05/94	Inactive	1
2	T00002	8000	Gasoline	11/08/94	Inactive	1
3	T00003	6000	Gasoline	11/08/94	Inactive	1
4	T00004	6000	Diesel	11/08/94	Inactive	1
5	T00005	4000	Gasoline	11/08/94	Inactive	1
6	T00001	12000	Gasoline	06/17/09	Inactive	1
7	T00002	12000	Gasoline	06/17/09	Inactive	1
8	T00003	12000	Gasoline	06/17/09	Inactive	1
9	T00004	12000	Diesel	06/17/09	Inactive	1
10	T00001	7000	Unknown	01/01/94	Inactive	1
11	T00002	4000	Unknown	01/01/94	Inactive	1
12	T00001	1000	Unknown	10/27/92	Inactive	1
13	T00001	NULL	Gasoline	01/01/93	Inactive	1
14	T00002	NULL	Gasoline	01/01/93	Inactive	1
15	T00003	NULL	Gasoline	01/01/93	Inactive	1
16	T00004	NULL	Gasoline	01/01/93	Inactive	1
17	T00001	250	Used Oil	06/21/91	Inactive	1
18	T00002	2000	Gasoline	06/21/91	Inactive	1
19	T00001	8000	Unknown	05/30/97	Inactive	1
20	T00002	8000	Unknown	05/30/97	Inactive	1
21	T00003	6000	Unknown	05/30/97	Inactive	1
22	T00001	3000	Gasoline	02/06/06	Inactive	1
23	T00002	3000	Diesel	02/06/06	Inactive	1
24	T00003	4000	Unknown	02/06/06	Inactive	1
25	T00004	4000	Unknown	02/06/06	Inactive	1
26	T00005	6000	Unknown	12/04/06	Inactive	1
27	T00001	3500	Gasoline	11/15/07	Inactive	1

BUSTR - LUST Locations (BUSTR/OGRIP)

#	FACILITY_ID	CURRENT_FACILITY_NAME	ADDRESS	CITY	ZIP	INCIDENT_ID	LTF	STATUS	FACILITY_STATUS	Count
1	*No Data*	SITE STORE #80	1903 RIVERSIDE DRIVE (EASTERN AV	CINCINNATI	45202	*No Data*	1 SUS/CON from regulated UST	NFA: No Further Action	Inactive	2
2	*No Data*	GEORGE BRANDSTETTER & SONS	4021 DUMONT (NE C/O LOT)	CINCINNATI	45226	*No Data*	6 Closure of regulated UST	NFA: No Further Action	Inactive	2
3	31000552	SITE STORE #80	1903 RIVERSIDE DRIVE (EASTERN AV	CINCINNATI	45202	N00002	1 SUS/CON from regulated UST	TR2: Tier 2	Active	1
4	31010070	VACANT LOT	1350 EASTERN AVE	CINCINNATI	45202	N00001	1 SUS/CON from regulated UST	T1N: Tier 1 Notification	Active	1
5	31010381	AMERICAN BUILDING COMPONENTS	1727 EASTERN AVE	CINCINNATI	45202	N00001	1 SUS/CON from regulated UST	T1N: Tier 1 Notification	Active	1
6	31010581	ONE MAN'S TRASH, INC.	3766 KELLOGG AVE.	CINCINNATI	45226	N00001	1 SUS/CON from regulated UST	T1S: Tier 1 Source Investigation	Active	1
7	31010685	COLUMBIA SQUARE/CELL TOWER SITE	3526 EASTERN AVE	CINCINNATI	45226	N00001	1 SUS/CON from regulated UST	M	Inactive	1
8	31000193	VALUE OIL CO.	2740 EASTERN AVE	CINCINNATI	45202	N00001	1 SUS/CON from regulated UST	NFA: No Further Action	Inactive	1
9	31000552	SITE STORE #80	1903 RIVERSIDE DRIVE (EASTERN AV	CINCINNATI	45202	N00001	1 SUS/CON from regulated UST	NFA: No Further Action	Inactive	1
10	31007196	CITY OF CINCINNATI	3401 EASTERN AVE	CINCINNATI	45226	N00001	6 Closure of regulated UST	NFA: No Further Action	Inactive	1
11	31007780	RICH'S STERN DRIVE & MARINE	3405 EASTERN AVE	CINCINNATI	45226	N00001	6 Closure of regulated UST	NFA: No Further Action	Inactive	1
12	31010074	VACANT LOT	1110 EASTERN AVE	CINCINNATI	45202	N00001	1 SUS/CON from regulated UST	NFA: No Further Action	Inactive	1
13	31010124	ADAMS LANDING	1262 EASTERN AVE	CINCINNATI	44114	N00001	1 SUS/CON from regulated UST	NFA: No Further Action	Inactive	1

14	31010409	GEORGE BRANDSTETTER & SONS	4021 DUMONT (NE C/O LOT)	CINCINNATI	45226	N00001	6 Closure of regulated UST	NFA: No Further Action	Inactive	1
15	31010409	GEORGE BRANDSTETTER & SONS	4021 DUMONT (NE C/O LOT)	CINCINNATI	45226	N00002	6 Closure of regulated UST	NFA: No Further Action	Inactive	1
16	31010645	COLUMBIA COMMONS/ORPHAN TANK	3511 COLUMBIA PARKWAY	CINCINNATI	45226	N00001	1 SUS/CON from regulated UST	NFA: No Further Action	Inactive	1
17	31010645	COLUMBIA COMMONS/ORPHAN TANK	3511 COLUMBIA PARKWAY	CINCINNATI	45226	N00002	6 Closure of regulated UST	NFA: No Further Action	Inactive	1
18	*No Data*	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI	45226	*No Data*	1 SUS/CON from regulated UST	T1S: Tier 1 Source Investigation	Active	1
19	*No Data*	COLUMBIA SQUARE/CELL TOWER SITE	3526 EASTERN AVE	CINCINNATI	45226	*No Data*	1 SUS/CON from regulated UST	NFA: No Further Action	Inactive	1
20	*No Data*	ONE MAN'S TRASH, INC.	3766 KELLOGG AVE.	CINCINNATI	45226	*No Data*	1 SUS/CON from regulated UST	T1S: Tier 1 Source Investigation	Active	1

Coal Gas Generators (OEPA-DERR)

#	SITE_NAME	ADDRESS	CITY	ZIP	PROCESS	OEPA_DISTRICT	Count
1	EAST END GAS WORKS	COMPANY	CINCINNATI	45201	COAL GAS	5	1

DERR Database (OEPA-DERR)

#	DERR_ID	NAME	ALIAS	ADDRESS	CITY	ZIP	CERCLIS_ID	ACTIVITY
1	531003071	Riverside Drive Property, Cincinnati	*No Data*	Keck Street & Riverside Drive	Cincinnati	45202-	*No Data*	VAP
2	531003071	Riverside Drive Property, Cincinnati	Riverside Drive Property, Cincinnati	Keck Street & Riverside Drive	Cincinnati	45202-	*No Data*	VAP

#	OEPA_DISTRICT	EDOCS_LINK	Count
1	SWDO		1
2	SWDO		1

Projects With Institutional Controls (OEPA-DERR)

#	NAME	ADDRESS	CITY	ZIP	LAND_USE	CONTROL_TYPE	SITE_ID	PROJECT_ID
1	Riverside Drive Property, Cincinnati	Keck Street & Riverside Drive	Cincinnati	45202-	*No Data*	Institutional	531003071	531003071002
2	Riverside Drive Property, Cincinnati	Keck Street & Riverside Drive	Cincinnati	45202-	Other	Institutional	531003071	531003071002

#	PROJECT_TYPE	NFA_NUMBER	IC_TYPE	IC_MECHANISM	OEPA_DISTRICT	EDOCS_LINK	Count
1	NFA 90 Day	*No Data*	Potable & Non-potable GW Extraction/Use Restriction	Environmental Covennant IAW UECA	SWDO		1
2	NFA 90 Day	14NFA586	*No Data*	*No Data*	SWDO		1

Spills Database (OEPA)

#	LATITUDE	LONGITUDE	SPILL_NUMBER	SPILL_YEAR	SPILL_LOCATION	SPILL_CITY	SPILL_COUNTY	WATERWAY
1	39.111972	-84.438139	684	2002	3744 MEADE AVE.	CINCINNATI	HAMILTON	SANITARY SEWER
2	39.121222	-84.449889	522	2012	2915 RIVERSIDE DR	CINCINNATI	HAMILTON	N/A

#	SPILL_AMOUNT	PRODUCT	STATUS	OEPA_DISTRICT	Count
1	3000	OIL - WASTE OIL	5/17/2017	SWDO	1
2	70	DIESEL FUEL	5/17/2017	SWDO	1

VAP Sites (OEPA-DERR)

#	SITE_ID	NAME	ALIAS_NAME	ADDRESS	ADDRESS2	CITY	ZIP	PROJECT_TYPE
1	531003071	Riverside Drive Property, Cincinnati	Riverside Drive Property, Cincinnati	Keck Street & Riverside Drive	*No Data*	Cincinnati	45202-	NFA 90 Day
2	531003071	Riverside Drive Property, Cincinnati	*No Data*	Keck Street & Riverside Drive	*No Data*	Cincinnati	45202-	VAP Technical Assistance

#	OEPA_DISTRICT	EDOCS_LINK	Count
1	SWDO		1
2	SWDO		1

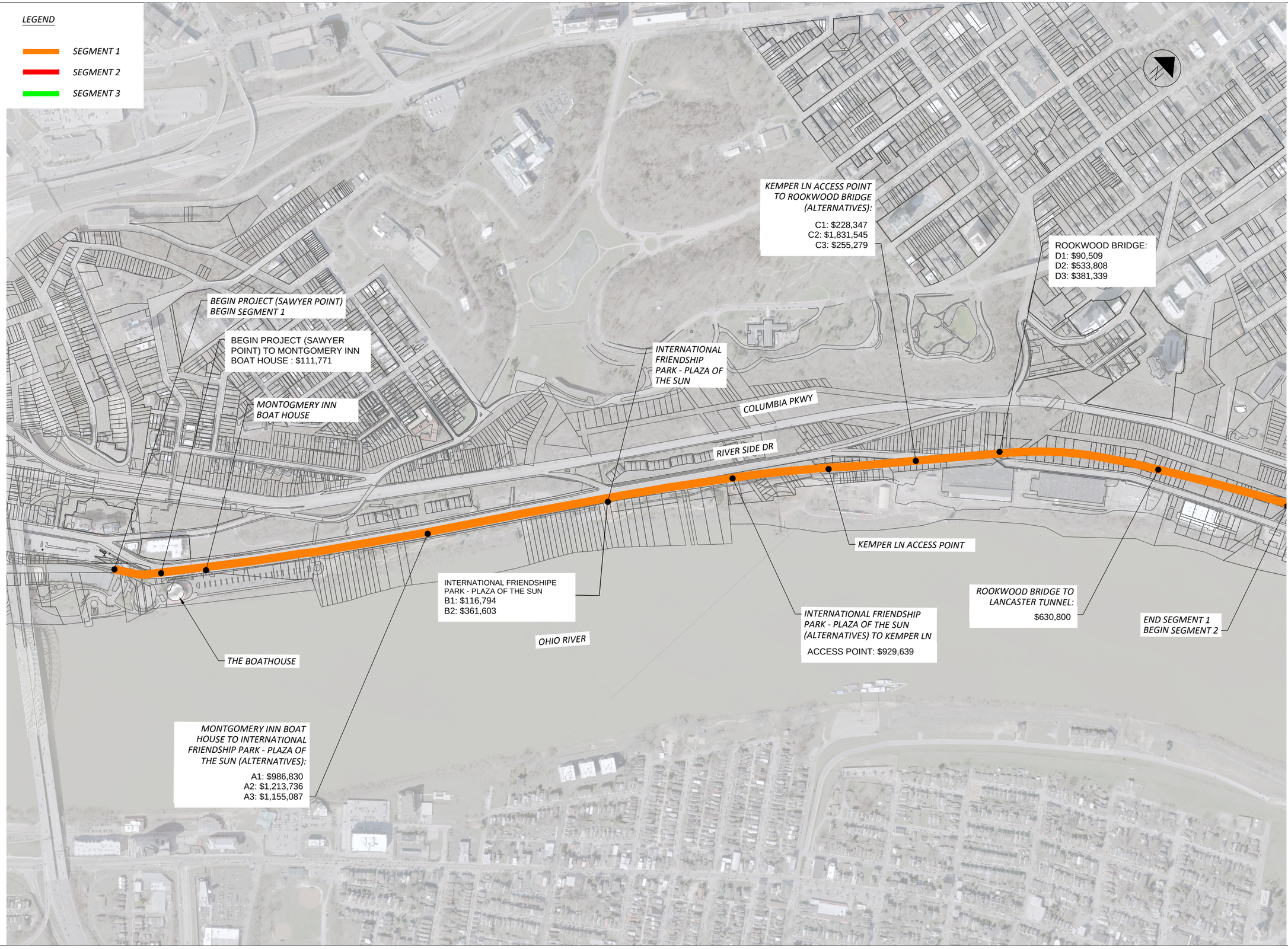
Attachment H

Public Involvement Summary Report

Attachment I

Preliminary Cost Estimates

COST ESTIMATE SUMMARY OF OASIS TRAIL						
	To and From	Alternatives				
BEGIN PROJECT (SAWYER POINT) TO MONTGOMERY INN BOAT HOUSE	$111,771.01	0				
MONTGOMERY INN BOAT HOUSE TO INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN (ALTERNATIVES)		A1 $986,829.59	A2 $1,213,736.01	A3 $1,155,087.02		
INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN (ALTERNATIVES)		B1 $116,793.56	B2 $361,603.42			
INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN ALTERNATIVES TO KEMPER LN ACCESS POINT	$929,638.84					
KEMPER LN ACCESS POINT TO ROOKWOOD BRIDGE (ALTERNATIVES)		C1 $228,347.14	C2 $1,831,544.88	C3 $255,279.42		
ROOKWOOD BRIDGE (ALTERNATIVES)		D1 $90,509.29	D2 $533,807.94	D3 $381,339.20		
ROOKWOOD BRIDGE TO LANCASTER TUNNEL	$630,799.57					
LANCASTER ST. PEDESTRIAN ACCESS TUNNEL		E1 N/A	E2 $172,950.00	E3 $49,611,220.72		
LANCASTER ST. PEDESTRIAN ACCESS TUNNEL TO HAZEN ST. ACCESS POINT	$266,136.67					
HAZEN ST. ACCESS POINT		F1 $487,832.53	F2 $60,568.68	No Build		
HAZEN ST. ACCESS POINT TO COLLINS AVE. BRIDGE	$1,214,720.97					
COLLINS AVE BRIDGE MODIFICATIONS		$325,444.80	$313,914.80	$383,094.80	$117,904.80	
GLADSTONE AVE.	$533,256.81					
GLADSTONE AVE. TO TORRENCE RD STATION	$544,070.07					
TORRENCE RD STATION		G1 $496,988.81	G2 $70,489.24	G3 $459,485.72	G4 $2,788,793.63	G5 $3,570,866.94
TORRENCE TO HOFF AVE. CONNECTION	$587,147.01					
HOFF AVE. CONNECTION	$87,237.95					
HOFF AVE. CONNECTION TO ST. ANDREWS ST.	$622,277.55					
ST. ANDREWS ST.		H1 $354,856.36	H2 $120,297.94			
ST. ANDREWS ST. TO WALWORTH TUNNEL	$1,294,306.91					
WALWORTH TUNNEL	$85,887.77					
WALWORTH TUNNEL TO DELTA AVE. BRIDGE		J1 $278,874.96	J2 $1,686,574.80	J3 $427,848.97		
DELTA AVE. PEDESTRAIN ACCESS POINT	$258,462.83					
DELTA AVE. ACCESS POINT TO STANLEY AVE. ACCESS POINT	$305,962.84					
STANLEY AVE. ACCESS POINT	$276,030.69					
STANLEY AVE. BRIDGE	$87,704.84					
STANLEY AVE. BRIDGE TO CONGRESS TUNNEL/TUSCULUM AVE. ACCESS POINT	$259,615.01					
TUSCULUM AVE. ACCESS POINT	$9,777.89					
TUSCULUM AVE. ACCESS POINT TO DONHAM ST. ACCESS POINT	$197,234.07					
DONHAM ST. ACCESS POINT	$19,918.21					
DONHAM ST. ACCESS POINT TO CARREL ST.	$597,515.02					
CARREL ST		K1 $42,268.12	K2 $214,234.12			
INCIDENTALS	$970,000.00					
	PREFERRED ALTERNATIVE					
GRAND TOTAL PREFERRED ALTERNATIVES	$12,662,025.94					



HORIZONTAL SCALE IN FEET
0 150 300 600

OASIS TRAIL
COST ESTIMATE MAP

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4000
www.arcadis.com

DESIGNER
TFM

REVIEWER
MJB 05-29-26

PROJECT ID
122971

SHEET 1 | TOTAL 3

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LEGEND

SEGMENT 1

SEGMENT 2

SEGMENT 3

COLLINS AVE. BRIDGE

ALT 1: $325,445
ALT 2: $313,915
ALT 3: $383,095
ALT 4: $117,905

END SEGMENT 2
BEGIN SEGMENT 3
TORRENCE RD. STATION

HAZEN ST. ACCESS POINT TO COLLINS AVE. BRIDGE:

$1,214,721

LANCASTER ST. PEDESTRIAN ACCESS TUNNEL
E1: N/A
E2: $172,950.00
E3: $ 49,611,221

COLLINS AV

COLUMBIA PKWY

RIVER SIDE DR

MATCH LINE
SEE SHEET 1

GLADSTONE AVE $533,257

GLADSTONE AVE. TO TORRENCE STATION:

$544,070

END SEGMENT 2
BEGIN SEGMENT 3
TORRENCE RD. STATION

G1: $496,989
G2: $70,489
G3: $459,486
G4: $2,788,794
G5: $3,570,867

OHIO RIVER

MATCH LINE
SEE SHEET 3

END SEGMENT 1
BEGIN SEGMENT 2

HAZEN ST. ACCESS POINT
F1: $487,833
F2: $60,569

LANCASTER ST. PEDESTRIAN ACCESS TUNNEL TO HAZEN ST. ACCESS POINT:

$266,137

HORIZONTAL SCALE IN FEET
0 100 200 400

OASIS TRAIL
COST ESTIMATE MAP

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 985-4700
www.arcadis.com

DESIGNER
TFM

REVIEWER
MJB 05-29-26

PROJECT ID
122971

SHEET 2 TOTAL 3

#####

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LEGEND

SEGMENT 1

SEGMENT 2

SEGMENT 3

HORIZONTAL SCALE IN FEET
0 200 400 800

ST. ANDREWS ST. TO WALWORTH TUNNEL:
$1,294,307

HOFF AVE. CONNECTION TO ST. ANDREWS. ST.:
$622,278

WALWORTH TUNNEL
$85,888

DELTA AVE. BRIDGE

HOFF AVE CONNECTION:
$87,238

COLUMBIA PKWY

DELTA AVE

STANLEY AVE. BRIDGE TO TUSCULUM AVE. ACCESS POINT:
$259,615

TUSCULUM AVE. ACCESS POINT: $9,778

TUSCULUM AVE, ACCESS POINT TO DONHAM ST ACCESS POINT
$197,234

COLUMBIA PKWY

RIVER SIDE DR

WALWORTH TUNNEL TO DELTA AVE. PEDESTIRAN ACCESS POINT
J1: $278,875
J2: $1,686,575
J3: $427,849

MATCH LINE SEE SHEET 2

ST. ANDREWS ST.
H1: $354,856
H2: $120,298

DELTA AVE. PEDESTRIAN ACCESS
$258,463

DELTA AVE. PEDESTRIAN ACCESS POINT TO STANLEY AVE. ACCESS
$305,963

OHIO RIVER

STANLEY AVE ACCESS POINT $276,031

STANLEY AVE. BRIDGE: $87,7105

KELLOGG AVE

TENNYSON ST

MCCULLOUGH ST

CARREL ST

TORRENCE TO HOFF AVE. CONNECTION:
$587,147

END SEGMENT 2
BEGIN SEGMENT 3
TORRENCE RD. STATION

DONHAM ST. ACCESS POINT:
$19,918

DONHAM ST. ACCESS POINT TO CARREL ST.:
$597,515

END SEGMENT 3
CARREL ST.
K1: $42,268
K2: $214,234

OASIS TRAIL
COST ESTIMATE MAP

DESIGN AGENCY
ARCADIS
100 E CAMPUS VIEW BLVD SUITE 230
COLUMBUS, OHIO 43235
(614) 825-4900
www.arcadis.com

DESIGNER
TFM

REVIEWER
MJB 05-29-26

PROJECT ID
122971

SHEET 3 TOTAL 3

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SEGMENT 1

BEGIN PROJECT (SAWYER POINT) TO MONTGOMERY INN BOAT HOUSE

Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$10,000.00
Pavement Removed	SY	$17	302	$5,137.78
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	127	$4,434.95
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	434	$1,303.33
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	230	$6,900.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	170	$3,910.00
Curb, Type 6	FT	$42	10	$420.00
Concrete Walk	SF	$10	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	145	$14,481.48
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	1	$1,115.00
Manhole Adjusted To Grade	EA	$1,050	1	$1,050.00
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	24	$8,447.53
Asphalt Concrete Intermediate Course, Type 2	CY	$350	30	$10,559.41
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	72	$5,720.19
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.04	$1,089.02
Structures				
Segmental/ Retaining Wall	SF	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$22,370.61
Inflation Factor	LUMP	15.3%		$14,831.71
Total			**$111,771.01**	

MONTGOMERY INN BOAT HOUSE TO INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN (ALTERNATIVES)								
Item	Unit	Unit Price	ALTERNATIVE A1 (CONSTRAINED-10ft)		ALTERNATIVE A2 (11FT TRAIL)		ALTERNATIVE A3 (12FT TRAIL)	
			QTY	COST	QTY	COST	QTY	COST
Roadway								
Clearing and Grubbing	LUMP			$20,000.00		$20,000.00		$20,000.00
Pavement Removed	SY	$17	233	$3,962.89	233	$3,962.89	233	$3,962.89
Walk Removed	SF	$4	-		2937	$11,748.00	2937	$11,748.00
Steps Removed	FT	$68	-		-		-	
Curb Removed	FT	$11	-		-		-	
Handrail Removed	FT	$8	-		-		-	
Retaining Wall Removed	SF	$25	-		-		-	
Removal Misc.: Fence and Bollards	FT	$5	-		2937	$14,685.00	2937	$14,685.00
Guardrail Removed	FT	$3	-		-		-	
Excavation	CY	$35	1428	$49,969.79	1523	$53,301.11	1618	$56,630.00
Embankment	CY	$30	-		-		-	
Subgrade Compaction	SY	$3	4895	$14,685.00	5221	$15,664.00	5548	$16,644.00
Seeding and Mulching	SY	$5	-		3590	$17,948.33	3263	$16,315.00
Topsoil, T=4"	CY	$6	-		10758	$64,549.39	-	
Fence, Misc.: 8' Chain Link	FT	$30	2937	$88,110.00	2937	$88,110.00	2937	$88,110.00
Fence, Misc.: Wood Bike Railing	FT	$85	-		-		-	
Curb Ramp	SF	$23	300	$6,900.00	320	$7,360.00	340	$7,820.00
Curb, Type 6	FT	$42	20	$840.00	20	$840.00	20	$840.00
Concrete Walk	SF	$10						
Guardrail, Type MGS	FT	$22	-		-		-	
Subgrade Remediation	CY	$100	1632	$163,166.67	1740	$174,044.44	1849	$184,900.00
Concrete Steps	FT	$496	-		-		-	
Railing	FT	$150	-		-		-	
Drainage & Erosion Control								
Catch Basin Adjusted To Grade	EA	$1,115	-		-		-	
Manhole Adjusted To Grade	EA	$1,050	-		1	$1,050.00	1	$1,050.00
Catch Basin/ Manhole Removed	EA	$800	-		-			
Manhole	EA	$6,000	-		-			
Catch Basin	EA	$5,000	-		-			
Conduit <24"	LUMP		-		-		-	
Slope Erosion Protection (Vegetated Filter Strip)	SY	$2	-		3590	$7,179.33	-	
Pavement								
Asphalt Concrete Surface Course, Type 1	CY	$350	282	$98,580.09	300	$104,925.46	318	$111,300.00
Asphalt Concrete Intermediate Course, Type 2	CY	$350	350	$122,375.23	372	$130,306.94	395	$138,250.00
Unreinforced Concrete Base	CY	$215	39	$8,353.15	39	$8,353.15	39	$8,385.00
Aggregate Base	CY	$79	855	$67,520.13	909	$71,816.85	963	$76,077.00
Traffic Control								
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.56	$13,906.25	0.56	$13,906.25	0.56	$13,906.25
Structures								
Segmental/ Retaining Wall	SF	$75.00	-		-		-	
Rookwood Bridge Modifications	LUMP		-		-		-	
Delta Ave Bridge Modifications	LUMP		-		-		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-		-		-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		-		-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-		-		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-		-		-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-		-		-	
Walworth Tunnel	LUMP		-		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-		-	
Congress Tunnel	LUMP		-		-		-	
Railroad								
Rookwood Bridge Track Shift	LUMP		-		-		-	
Delta Ave Bridge Track Shift	LUMP		-		-		-	
Incidentals								
Contingency	LUMP	30.0%		$197,510.76		$242,925.35		$231,186.94
Inflation Factor	LUMP	15.3%		$130,949.63		$161,059.50		$153,276.94
Total			**$986,829.59**		**$1,213,736.01**		**$1,155,087.02**	

INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN (ALTERNATIVES)						
Item	Unit	Unit Price	ALTERNATIVE B1 (CONSTRAINED-8ft)		ALTERNATIVE B2 (12FT TRAIL)	
			QTY	COST	QTY	COST
Roadway						
Clearing and Grubbing	LUMP			$5,000.00		$5,000.00
Pavement Removed	SY	$17	123	$2,094.78	261	$4,429.44
Walk Removed	SF	$4	-		-	
Steps Removed	FT	$68	-		-	
Curb Removed	FT	$11	-		206	$2,266.00
Handrail Removed	FT	$8	-		-	
Retaining Wall Removed	SF	$25	-		1030	$25,750.00
Removal Misc.: Fence and Bollards	FT	$5	-		-	
Guardrail Removed	FT	$3	-		206	$618.00
Excavation	CY	$35	170	$5,957.13	223	$7,790.09
Embankment	CY	$30	-		-	
Subgrade Compaction	SY	$3	584	$1,750.67	763	$2,289.33
Seeding and Mulching	SY	$5	-		-	
Topsoil, T=4"	CY	$6	-		-	
Fence, Misc.: 8' Chain Link	FT	$30	-		404	$12,120.00
Fence, Misc.: Wood Bike Railing	FT	$85	-		-	
Curb Ramp	SF	$23	130	$2,990.00	170	$3,910.00
Curb, Type 6	FT	$42	10	$420.00	216	$9,072.00
Concrete Walk	SF	$10				
Guardrail, Type MGS	FT	$22	-		206	$4,532.00
Subgrade Remediation	CY	$100	195	$19,451.85	254	$25,437.04
Concrete Steps	FT	$496	-		-	
Railing	FT	$150	-		-	
Drainage & Erosion Control						
Catch Basin Adjusted To Grade	EA	$1,115	-		-	
Manhole Adjusted To Grade	EA	$1,050	-		-	
Catch Basin/ Manhole Removed	EA	$800	-		-	
Manhole	EA	$6,000	-		-	
Catch Basin	EA	$5,000	-		-	
Conduit <24"	LUMP		-		-	
BMP Vegetated Filter Strip	SY	$5	-		-	
Pavement						
Asphalt Concrete Surface Course, Type 1	CY	$350	33	$11,546.58	49	$17,302.85
Asphalt Concrete Intermediate Course, Type 2	CY	$350	41	$14,516.42	60	$21,012.42
Unreinforced Concrete Base	CY	$215	21	$4,415.46	28	$6,055.83
Aggregate Base	CY	$79	100	$7,863.75	184	$14,497.96
Traffic Control						
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.08	$1,912.88	0.08	$1,912.88
Structures						
Segmental/ Retaining Wall	SF	$75.00	-		1030	$77,250.00
Rookwood Bridge Modifications	LUMP		-		-	
Delta Ave Bridge Modifications	LUMP		-		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-		-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-		-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-		-	
Walworth Tunnel	LUMP		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-	
Congress Tunnel	LUMP		-		-	
Railroad						
Rookwood Bridge Track Shift	LUMP		-		-	
Delta Ave Bridge Track Shift	LUMP		-		-	
					-	
Incidentals						
Contingency	LUMP	30.0%		$23,375.85		$72,373.76
Inflation Factor	LUMP	15.3%		$15,498.19		$47,983.80
Total			**$116,793.56**		**$361,603.42**	

INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN ALTERNATIVES TO KEMPER LN ACCESS POINT				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$50,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	896	$31,372.48
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	3073	$9,219.67
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	1627	$48,810.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Concrete Walk	SF	$10		
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	1024	$102,440.74
Concrete Steps	FT	$496		
Railing	FT	$150		
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	171	$59,757.10
Asphalt Concrete Intermediate Course, Type 2	CY	$350	213	$74,696.37
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	512	$40,464.09
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.31	$7,703.60
Structures				
Segmental/ Retaining Wall	SF	$75.00	2610	$195,750.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$186,064.21
Inflation Factor	LUMP	15.3%		$123,360.57
Total			**$929,638.84**	

KEMPER LN ACCESS POINT TO ROOKWOOD BRIDGE (ALTERNATIVES)								
Item	Unit	Unit Price	ALTERNATIVE C1 (CONSTRAINED - 8ft)		ALTERNATIVE C2 (12FT TRAIL)		ALTERNATIVE C2 (12FT TRAIL)	
			QTY	COST	QTY	COST	QTY	COST
Roadway								
Clearing and Grubbing	LUMP			$20,000.00		$20,000.00		$20,000.00
Pavement Removed	SY	$17	-		-		-	
Walk Removed	SF	$4	-		5719	$22,876.00	-	
Steps Removed	FT	$68	-		-		-	
Curb Removed	FT	$11	-		602	$6,622.00	-	
Handrail Removed	FT	$8	-		-		-	
Retaining Wall Removed	SF	$25	-		6000	$150,000.00	-	
Removal Misc.: Fence and Bollards	FT	$5	-		602	$3,010.00	-	
Guardrail Removed	FT	$3	-		-		-	
Excavation	CY	$35	254	$8,876.71	332	$11,608.01	332	$11,608.01
Embankment	CY	$30	-		-		-	
Subgrade Compaction	SY	$3	870	$2,608.67	1137	$3,411.33	1137	$3,411.33
Seeding and Mulching	SY	$5	-		-		-	
Topsoil, T=4"	CY	$6	-		-		-	
Fence, Misc.: 8' Chain Link	FT	$30	1204	$36,120.00	1204	$36,120.00	1204	$36,120.00
Fence, Misc.: Wood Bike Railing	FT	$85	-		-		-	
Curb Ramp	SF	$23	130	$2,990.00	170	$3,910.00	130	$2,990.00
Curb, Type 6	FT	$42	10	$420.00	612	$25,704.00	10	$420.00
Concrete Walk	SF	$10	-		5719	$57,190.00	-	
Guardrail, Type MGS	FT	$22	-		-		-	
Subgrade Remediation	CY	$100	290	$28,985.19	379	$37,903.70	379	$37,903.70
Concrete Steps	FT	$496	-		-		-	
Railing	FT	$150	-		-		-	
Drainage & Erosion Control								
Catch Basin Adjusted To Grade	EA	$1,115	-		-		-	
Manhole Adjusted To Grade	EA	$1,050	-		-		-	
Catch Basin/ Manhole Removed	EA	$800	-		5	$4,000.00	-	
Manhole	EA	$6,000	-		2	$12,000.00	-	
Catch Basin	EA	$5,000	-		3	$15,000.00	-	
Conduit <24"	LUMP		-		-	$25,000.00	-	
BMP Vegetated Filter Strip	SY	$5	-		-		-	
Pavement								
Asphalt Concrete Surface Course, Type 1	CY	$350	48	$16,908.02	63	$22,110.49	63	$22,110.49
Asphalt Concrete Intermediate Course, Type 2	CY	$350	60	$21,135.03	79	$27,638.12	79	$17,925.29
Unreinforced Concrete Base	CY	$215	-		-		-	
Aggregate Base	CY	$79	145	$11,449.15	190	$14,971.96	190	$14,971.96
Traffic Control								
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.11	$2,850.38	0.11	$2,850.38	0.11	$2,850.38
Structures								
Segmental/ Retaining Wall	SF	$75.00	-		-		-	
Rookwood Bridge Modifications	LUMP		-		-		-	
Delta Ave Bridge Modifications	LUMP		-		-		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-		6000	$720,000.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		-		-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-		-		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-		-		-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-		-		-	
Walworth Tunnel	LUMP		-		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-		-	
Congress Tunnel	LUMP		-		-		-	
Railroad								
Rookwood Bridge Track Shift	LUMP		-		-		-	
Delta Ave Bridge Track Shift	LUMP		-		-		-	
Incidentals								
Contingency	LUMP	30.0%		$45,702.94		$366,577.80		$51,093.35
Inflation Factor	LUMP	15.3%		$30,301.05		$243,041.08		$33,874.89
Total			**$228,347.14**		**$1,831,544.88**		**$255,279.42**	

ROOKWOOD BRIDGE (ALTERNATIVES)								
Item	Unit	Unit Price	ALTERNATIVE D1 (CONSTRAINED)		ALTERNATIVE D2 (12FT TRAIL)		ALTERNATIVE D3 (12FT TRAIL) W/ TRACK REALIGNMENT	
			QTY	COST	QTY	COST	QTY	COST
Roadway								
Clearing and Grubbing	LUMP		-		-		-	
Pavement Removed	SY	$17	-		-		-	
Walk Removed	SF	$4	-		-		-	
Steps Removed	FT	$68	-		-		-	
Curb Removed	FT	$11	-		-		-	
Handrail Removed	FT	$8	-		-		-	
Retaining Wall Removed	SF	$25	-		-		-	
Removal Misc.: Fence and Bollards	FT	$5	180	$900.00	180	$900.00	-	
Guardrail Removed	FT	$3	-		-		-	
Excavation	CY	$35	-		-		-	
Embankment	CY	$30	-		-		-	
Subgrade Compaction	SY	$3	-		-		-	
Seeding and Mulching	SY	$5	-		-		-	
Topsoil, T=4"	CY	$6	-		-		-	
Fence, Misc.: 8' Chain Link	FT	$30	360	$10,800.00	360	$10,800.00	180	$5,400.00
Fence, Misc.: Wood Bike Railing	FT	$85	-		-		-	
Curb Ramp	SF	$23	-		-		-	
Curb, Type 6	FT	$42	-		-		-	
Concrete Walk	SF	$10	-		-		-	
Guardrail, Type MGS	FT	$22	-		-		-	
Subgrade Remediation	CY	$100	-		-		-	
Concrete Steps	FT	$496	-		-		-	
Railing	FT	$150	-		-		-	
Drainage & Erosion Control								
Catch Basin Adjusted To Grade	EA	$1,115	-		-		-	
Manhole Adjusted To Grade	EA	$1,050	-		-		-	
Catch Basin/ Manhole Removed	EA	$800						
Manhole	EA	$6,000						
Catch Basin	EA	$5,000	-		-		-	
Conduit <24"	LUMP		-		-		-	
BMP Vegetated Filter Strip	SY	$5	-		-		-	
Pavement								
Asphalt Concrete Surface Course, Type 1	CY	$350	10	$3,500.00	18	$6,222.22	19	$6,611.11
Asphalt Concrete Intermediate Course, Type 2	CY	$350	10	$3,500.00	18	$6,222.22	19	$6,611.11
Unreinforced Concrete Base	CY	$215	-		-		-	
Aggregate Base	CY	$79	30	$2,370.00	53	$4,213.33	57	$4,476.67
Traffic Control								
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.03	$852.27	0.03	$852.27	0.03	$852.27
Structures								
Segmental/ Retaining Wall	FT	$75.00	-		-		-	
Rookwood Bridge Modifications	LUMP			$50,000.00		$425,000.00		$50,000.00
Delta Ave Bridge Modifications	LUMP		-		-		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-		-		-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		-		-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-		-		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-		-		-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-		-		-	
Walworth Tunnel	LUMP		-		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-		-	
Congress Tunnel	LUMP		-		-		-	
Railroad								
Rookwood Bridge Track Shift	LUMP		-		-			$192,000.00
Delta Ave Bridge Track Shift	LUMP		-		-		-	
Incidentals								
Contingency	LUMP	30.0%		$6,576.68		$8,763.02		$64,785.35
Inflation Factor	LUMP	15.3%		$12,010.34		$70,834.88		$50,602.69
Total			**$90,509.29**		**$533,807.94**		**$381,339.20**	

ROOKWOOD BRIDGE TO LANCASTER TUNNEL				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$20,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	1043	$36,520.88
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	3578	$10,732.67
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	1894	$56,820.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Concrete Walk	SF	$10	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	842	$84,177.78
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800		
Manhole	EA	$6,000		
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	199	$69,563.58
Asphalt Concrete Intermediate Course, Type 2	CY	$350	248	$86,954.48
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	596	$47,104.48
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.36	$8,967.80
Structures				
Segmental/ Retaining Wall	FT	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$126,252.50
Inflation Factor	LUMP	15.3%		$83,705.41
Total			**$630,799.57**	

SEGMENT 2

LANCASTER ST. PEDESTRIAN ACCESS TUNNEL

Item	Unit	Unit Price	ALTERNATIVE E1 (REHABILITATION)		ALTERNATIVE E2 (ABANDONMENT)		ALTERNATIVE E3 (REPLACEMENT)	
			QTY	COST	QTY	COST	QTY	COST
Roadway								
Clearing and Grubbing	LUMP		-		-		-	$1,000.00
Pavement Removed	SY	$17	-		-		-	
Walk Removed	SF	$4	-		-		-	
Steps Removed	FT	$68	-		-		-	
Curb Removed	FT	$11	-		-		-	
Handrail Removed	FT	$8	-		-		-	
Retaining Wall Removed	SF	$25	-		-		-	
Removal Misc.: Fence and Bollards	FT	$5	-		-		-	
Guardrail Removed	FT	$3	-		-		-	
Excavation	CY	$35	-		-		58	$2,022.38
Embankment	CY	$30	-		-		-	
Subgrade Compaction	SY	$3	-		-		198	$594.33
Seeding and Mulching	SY	$5	-		-		-	
Topsoil, T=4"	CY	$6	-		-		-	
Fence, Misc.: 8' Chain Link	FT	$30	-		-		-	
Fence, Misc.: Wood Bike Railing	FT	$85	-		-		-	
Curb Ramp	SF	$23	-		-		-	
Curb, Type 6	FT	$42	-		-		-	
Concrete Walk	SF	$10	-		-			
Guardrail, Type MGS	FT	$22	-		-		-	
Subgrade Remediation	CY	$100	-		-		66	$6,603.70
Concrete Steps	FT	$496	-		-		-	
Railing	FT	$150	-		-		-	
Drainage & Erosion Control								
Catch Basin Adjusted To Grade	EA	$1,115	-		-		-	
Manhole Adjusted To Grade	EA	$1,050	-		-		-	
Catch Basin/ Manhole Removed	EA	$800	-		-		-	
Manhole	EA	$6,000	-		-		-	
Catch Basin	EA	$5,000	-		-		-	
Conduit <24"	LUMP		-		-		-	
BMP Vegetated Filter Strip	SY	$5	-		-		-	
Pavement								
Asphalt Concrete Surface Course, Type 1	CY	$350	-		-		11	$3,852.16
Asphalt Concrete Intermediate Course, Type 2	CY	$350	-		-		14	$4,815.20
Unreinforced Concrete Base	CY	$215	-		-		-	
Aggregate Base	CY	$79	-		-		33	$2,608.46
Traffic Control								
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-		-		-	
Structures								
Segmental/ Retaining Wall	SF	$75.00	-		-		-	
Rookwood Bridge Modifications	LUMP		-		-		-	
Delta Ave Bridge Modifications	LUMP		-		-		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-		-		-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		-		-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-			$150,000.00	-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-			$43,000,000.00
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-		-		-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-		-		-	
Walworth Tunnel	LUMP		-		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-		-	
Congress Tunnel	LUMP		-		-		-	
Railroad								
Rookwood Bridge Track Shift	LUMP		-		-		-	
Delta Ave Bridge Track Shift	LUMP		-		-		-	
Incidentals								
Contingency	LUMP	30.0%				$0.00		$6,448.87
Inflation Factor	LUMP	15.3%				$22,950.00		$6,583,275.60
Total			**N/A**		**$172,950.00**		**$49,611,220.72**	

LANCASTER ST. PEDESTRIAN ACCESS TUNNEL TO HAZEN ST. ACCESS POINT				
Item	**Unit**	**Unit Price**	**12FT TRAIL**	
			QTY	**COST**
Roadway				
Clearing and Grubbing	LUMP			$10,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	870	$21,750.00
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	193	$6,748.84
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	661	$1,983.33
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	350	$10,500.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Concrete Walk	SF	$10	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	220	$22,037.04
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	37	$12,854.94
Asphalt Concrete Intermediate Course, Type 2	CY	$350	46	$16,068.67
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	110	$8,704.63
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.07	$1,657.20
Structures				
Segmental/ Retaining Wall	SF	$75.00	870	$65,250.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$53,266.40
Inflation Factor	LUMP	15.3%		$35,315.62
Total			**$266,136.67**	

HAZEN ST. ACCESS POINT						
Item	Unit	Unit Price	ALTERNATIVE F1 (SWITCHBACK)		ALTERNATIVE F2 (10 FT TRAIL)	
			QTY	COST	QTY	COST
Roadway						
Clearing and Grubbing	LUMP			$2,500.00		$1,000.00
Pavement Removed	SY	$17	-		-	
Walk Removed	SF	$4	-		-	
Steps Removed	FT	$68	-		-	
Curb Removed	FT	$11	-		-	
Handrail Removed	FT	$8	-		-	
Retaining Wall Removed	SF	$25	-		-	
Removal Misc.: Fence and Bollards	FT	$5	-		-	
Guardrail Removed	FT	$3	-		-	
Excavation	CY	$35	58	$2,022.38	47	$1,652.62
Embankment	CY	$30	-		-	
Subgrade Compaction	SY	$3	198	$594.33	162	$485.67
Seeding and Mulching	SY	$5	-		-	
Topsoil, T=4"	CY	$6	-		-	
Fence, Misc.: 8' Chain Link	FT	$30	-			
Fence, Misc.: Wood Bike Railing	FT	$85	-		-	
Curb Ramp	SF	$23	120	$2,760.00	120	$2,760.00
Curb, Type 6	FT	$42			-	
Concrete Walk	SF	$10			-	
Guardrail, Type MGS	FT	$22	-		-	
Subgrade Remediation	CY	$100	198	$19,818.52	54	$5,396.30
Concrete Steps	FT	$496	-		25	$12,400.00
Railing	FT	$150	782	$117,300.00	50	$7,500.00
Drainage & Erosion Control						
Catch Basin Adjusted To Grade	EA	$1,115	-		-	
Manhole Adjusted To Grade	EA	$1,050	-		-	
Catch Basin/ Manhole Removed	EA	$800	-		-	
Manhole	EA	$6,000	-		-	
Catch Basin	EA	$5,000	-		-	
Conduit <24"	LUMP		-		-	
BMP Vegetated Filter Strip	SY	$5	-		-	
Pavement						
Asphalt Concrete Surface Course, Type 1	CY	$350	33	$11,560.80	9	$3,147.84
Asphalt Concrete Intermediate Course, Type 2	CY	$350	41	$14,451.00	11	$3,934.80
Unreinforced Concrete Base	CY	$215	-		-	
Aggregate Base	CY	$79	99	$7,828.31	27	$2,131.54
Traffic Control						
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-		-	
Structures						
Segmental/ Retaining Wall	SF	$75.00	1955	$146,625.00	-	
Rookwood Bridge Modifications	LUMP		-		-	
Delta Ave Bridge Modifications	LUMP		-		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-		-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-		-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-		-	
Walworth Tunnel	LUMP		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-	
Congress Tunnel	LUMP		-		-	
Railroad						
Rookwood Bridge Track Shift	LUMP					
Delta Ave Bridge Track Shift	LUMP					
Incidentals						
Contingency	LUMP	30.0%		$97,638.11		$12,122.63
Inflation Factor	LUMP	15.3%		$64,734.06		$8,037.30
Total			**$487,832.53**		**$60,568.68**	

HAZEN ST. ACCESS POINT TO COLLINS AVE. BRIDGE				
Item	**Unit**	**Unit Price**	**12FT TRAIL**	
			QTY	**COST**
Roadway				
Clearing and Grubbing	LUMP			$50,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	1200	$30,000.00
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	1366	$47,819.24
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	4684	$14,053.00
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	2527	$75,810.00
Fence, Misc.: Wood Bike Railing	FT	$85	800	$68,000.00
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Concrete Walk	SF	$10	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	1561	$156,144.44
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	260	$91,084.26
Asphalt Concrete Intermediate Course, Type 2	CY	$350	325	$113,855.32
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	781	$61,677.06
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.48	$11,964.96
Structures				
Segmental/ Retaining Wall	SF	$75.00	1200	$90,000.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$243,122.48
Inflation Factor	LUMP	15.3%		$161,190.21
Total			**$1,214,720.97**	

COLLINS AVE. BRIDGE						
Item	Unit	Unit Price	12FT TRAIL			
			QTY	COST		
Roadway						
Clearing and Grubbing	LUMP		-			
Pavement Removed	SY	$17	-			
Walk Removed	SF	$4	-			
Steps Removed	FT	$68	-			
Curb Removed	FT	$11	-			
Handrail Removed	FT	$8	-			
Retaining Wall Removed	SF	$25	-			
Removal Misc.: Fence and Bollards	FT	$5	-			
Guardrail Removed	FT	$3	-			
Excavation	CY	$35	-			
Embankment	CY	$30	-			
Subgrade Compaction	SY	$3	-			
Seeding and Mulching	SY	$5	-			
Topsoil, T=4"	CY	$6	-			
Fence, Misc.: 8' Chain Link	FT	$30	135	$4,050.00		
Fence, Misc.: Wood Bike Railing	FT	$85	-			
Curb Ramp	SF	$23	-			
Curb, Type 6	FT	$42	-			
Concrete Walk	SF	$10	-			
Guardrail, Type MGS	FT	$22	-			
Subgrade Remediation	CY	$100	-			
Concrete Steps	FT	$496	-			
Railing	FT	$150	-			
Drainage & Erosion Control						
Catch Basin Adjusted To Grade	EA	$1,115	-			
Manhole Adjusted To Grade	EA	$1,050	-			
Catch Basin/ Manhole Removed	EA	$800	-			
Manhole	EA	$6,000	-			
Catch Basin	EA	$5,000	-			
Conduit <24"	LUMP		-			
BMP Vegetated Filter Strip	SY	$5	-			
Pavement						
Asphalt Concrete Surface Course, Type 1	CY	$350	14	$4,958.33		
Asphalt Concrete Intermediate Course, Type 2	CY	$350	18	$6,197.92		
Unreinforced Concrete Base	CY	$215	-			
Aggregate Base	CY	$79	43	$3,357.50		
Traffic Control						
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.03	$639.20		
Structures						
Segmental/ Retaining Wall	SF	$75.00	-			
Rookwood Bridge Modifications	LUMP		-			
Delta Ave Bridge Modifications	LUMP		-			
Rookwood Retaining Wall Relocation	SF	$120.00	-			
Delta Ave Retaining Wall Relocation	SF	$120.00	-			
Lancaster Tunnel and Stairwell Abandonment	LUMP		-			
Lancaster Tunnel and Stairwell Replacement	LUMP		-			
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-			
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-			
Walworth Tunnel	LUMP		-			
Stanley Ave Bridge Modifications	LUMP		-			
Congress Tunnel	LUMP		-			
Railroad						
Rookwood Bridge Track Shift	LUMP		-			
Delta Ave Bridge Track Shift	LUMP		-			
Incidentals						
Contingency	LUMP	30.0%				
Inflation Factor	LUMP	15.3%				
Total			**$19,202.95**			

COLLINS AVE BRIDGE MODIFICATIONS

Item	Unit	Unit Price	ALTERNATIVE 1		ALTERNATIVE 2		ALTERNATIVE 3		ALTERNATIVE 4	
			QTY	COST	QTY	COST	QTY	COST	QTY	COST
Structures										
Composite Prestressed Concrete Box Beams	LUMP		1	$280,000.00	450		-		-	
Reinforced Concrete Slab	LUMP		-		1	$270,000.00	-		-	
Prefabricated Steel Pedestrian Truss	LUMP		-		-		1	$330,000.00	-	
Reinforced Concrete Deck on Existing Superstructure	LUMP		-		-		-		1	$100,000.00
SUP	LUMP			$17,024.83		$17,024.83		$17,024.83		$17,024.83
Incidentals										
Contingency	LUMP	30%		$5,107.45		$5,107.45		$5,107.45		$5,107.45
Inflation Factor	LUMP	15.3%		$45,444.80		$43,914.80		$53,094.80		$17,904.80
Total			**$325,444.80**		**$313,914.80**			$383,094.80		$117,904.80

GLADSTONE AVE.

Item	Unit	Unit Price	PAVEMENT EXTENSION	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$2,500.00
Pavement Removed	SY	$17	1497	$25,454.67
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	528	$18,469.71
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	15161	$45,481.50
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	1123	$33,690.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Concrete Walk	SF	$10	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	603	$60,309.26
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	1	$1,115.00
Manhole Adjusted To Grade	EA	$1,050	4	$4,200.00
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	101	$35,180.40
Asphalt Concrete Intermediate Course, Type 2	CY	$350	126	$43,975.50
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	302	$23,822.16
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.21	$5,317.23
Structures				
Segmental/ Retaining Wall	SF	$75.00	750	$56,250.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP			
Delta Ave Bridge Track Shift	LUMP			
Incidentals				
Contingency	LUMP	30.0%		$106,729.63
Inflation Factor	LUMP	15.3%		$70,761.74
Total			**$533,256.81**	

GLADSTONE AVE. TO TORRENCE STATION				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$50,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	634	$22,174.77
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	2172	$6,516.67
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	1150	$34,500.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Concrete Walk	SF	$10	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	724	$72,407.41
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	1	$1,050.00
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	121	$42,237.65
Asphalt Concrete Intermediate Course, Type 2	CY	$350	151	$52,797.07
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	362	$28,600.93
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.22	$5,445.08
Structures				
Segmental/ Retaining Wall	SF	$75.00	630	$47,250.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$108,893.87
Inflation Factor	LUMP	15.3%		$72,196.64
Total			**$544,070.07**	

TORRENCE RD STATION												
Item	Unit	Unit Price	ALTERNATIVE G1 (RIVERSIDE DR. SWITCHBACK)		ALTERNATIVE G2 (RIVERSIDE DR. STRAIGHT PATH)		ALTERNATIVE G3 (COLUMBIA PKWY. SWITCHBACK)		ALTERNATIVE G4 (COLUMBIA PKWY. ELEVATED BWLK)		ALTERNATIVE G5 (COLUMBIA PKWY. ELEVATED SWITCHBACK)	
			QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Roadway												
Clearing and Grubbing	LUMP		-	$10,000.00	-	$2,000.00	-	$20,000.00	-	$20,000.00	-	$20,000.00
Pavement Removed	SY	$17	-		-		-		-		-	
Walk Removed	SF	$4	-		-		-		-		-	
Steps Removed	FT	$68	-		-		-		-		-	
Curb Removed	FT	$11	-		-		-		-		-	
Handrail Removed	FT	$8	-		-		-		-		-	
Retaining Wall Removed	SF	$25	330	$8,250	-		-		-		93	$2,325
Removal Misc.: Fence and Bollards	FT	$5	-		-		-		-		-	
Guardrail Removed	FT	$3	-		-		-		-		-	
Excavation	CY	$35	318	$11,142	124	$4,332.87	503	$17,611.64	195	$6,819.17	-	
Embankment	CY	$30	-		-		-		-		-	
Subgrade Compaction	SY	$3	1091	$3,274	424	$1,273.33	1725	$5,175.67	668	$2,004.00	-	
Seeding and Mulching	SY	$5	-		-		-		-		-	
Topsoil, T=4"	CY	$6	-		-		-		-		-	
Fence, Misc.: 8' Chain Link	FT	$30	-		-		532	$15,960.00	-		-	
Fence, Misc.: Wood Bike Railing	FT	$85	-		-		-		-		-	
Curb Ramp	SF	$23	-		-		-		-		-	
Curb, Type 6	FT	$42	-		-		-		-		-	
Concrete Walk	SF	$10	-		-		-		-		-	
Guardrail, Type MGS	FT	$22	-		-		-		-		-	
Subgrade Remediation	CY	$100	364	$36,381	141	$14,148.15	575	$57,507.41	223	$22,266.67	-	
Concrete Steps	FT	$496	-		-		-		-		-	
Railing	FT	$150	-		-		-		-		-	
Drainage & Erosion Control												
Catch Basin Adjusted To Grade	EA	$1,115	-		1	$1,115.00	-		-		-	
Manhole Adjusted To Grade	EA	$1,050	-		-		1	$1,050.00	1	$1,050.00	-	
Catch Basin/ Manhole Removed	EA	$800	-		-		-		-		-	
Manhole	EA	$6,000	-		-		-		-		-	
Catch Basin	EA	$5,000	-		-		-		-		-	
Conduit <24"	LUMP		-		-		-		-		-	
BMP Vegetated Filter Strip	SY	$5	-		-		-		-		-	
Pavement												
Asphalt Concrete Surface Course, Type 1	CY	$350	61	$21,223	24	$8,253.09	96	$33,545.99	37	$12,988.89	-	
Asphalt Concrete Intermediate Course, Type 2	CY	$350	76	$26,528	29	$10,316.36	120	$41,932.48	46	$16,236.11	-	
Unreinforced Concrete Base	CY	$215	-		-		-		-		-	
Aggregate Base	CY	$79	182	$14,371	71	$5,588.52	288	$22,715.43	111	$8,795.33	-	
Traffic Control												
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-		-		-		-		-	
Structures												
Segmental/ Retaining Wall	SF	$75.00	2672	$200,400	-		1214	$91,050.00	-		-	
Rookwood Bridge Modifications	LUMP		-		-		-		-		-	
Delta Ave Bridge Modifications	LUMP		-		-		-		-		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-		-		-		-		-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		-		-		-		-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-		-		-		-		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-		-		-		-	
Torrence Station Alternate 4 Boardwalk	SF	$200.00	-		-		-		8852	$1,770,400.00	-	
Torrence Station Alternate 5 Boardwalk	SF	$200.00	-		-		-		-		11800	$2,360,000
Walworth Tunnel	LUMP		-		-		-		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-		-		-		-	
Congress Tunnel	LUMP		-		-		-		-		-	
Railroad												
Rookwood Bridge Track Shift	LUMP		-		-		-		-		-	
Delta Ave Bridge Track Shift	LUMP		-		-		-		-		-	
Incidentals												
Contingency	LUMP	30.0%		$99,470.71		$14,108.19		$91,964.58		$558,168.05		$714,697.50
Inflation Factor	LUMP	15.3%		$65,949.08		$9,353.73		$60,972.52		$370,065.42		$473,844.44
Total			**$496,988.81**		**$70,489.24**		**$459,485.72**		**$2,788,793.63**		**$3,570,866.94**	

SEGMENT 3

TORRENCE TO HOFF AVE. CONNECTION

Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$20,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	771	$26,995.37
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	2644	$7,933.33
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	1400	$42,000.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	881	$88,148.15
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	147	$51,419.75
Asphalt Concrete Intermediate Course, Type 2	CY	$350	184	$64,274.69
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	441	$34,818.52
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.27	$6,628.79
Structures				
Segmental/ Retaining Wall	SF	$75.00	660	$49,500.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$117,515.58
Inflation Factor	LUMP	15.3%		$77,912.83
Total			**$587,147.01**	

HOFF AVE. CONNECTION				
Item	Unit	Unit Price	ACCESS POINT	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP	$100,000	-	
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	30	$2,040.00
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	30	$240.00
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	43	$1,497.87
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	130	$389.33
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	-	
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	43	$4,325.93
Concrete Steps	FT	$496	50	$24,800.00
Railing	FT	$150	100	$15,000.00
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800		
Manhole	EA	$6,000		
Catch Basin	EA	$5,000		
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	6	$1,946.60
Asphalt Concrete Intermediate Course, Type 2	CY	$350	6	$2,000.62
Unreinforced Concrete Base	CY	$215	20	$4,252.22
Aggregate Base	CY	$79	22	$1,708.74
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-	
Structures				
Segmental/ Retaining Wall	SF	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$17,460.39
Inflation Factor	LUMP	15.3%		$11,576.24
Total			**$87,237.95**	

HOFF AVE. CONNECTION TO ST. ANDREWS ST.				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$5,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	551	$19,282.41
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	1889	$5,666.67
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	1000	$30,000.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	630	$62,962.96
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800		
Manhole	EA	$6,000		
Catch Basin	EA	$5,000		
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	105	$36,728.40
Asphalt Concrete Intermediate Course, Type 2	CY	$350	131	$45,910.49
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	315	$24,870.37
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.19	$4,734.85
Structures				
Segmental/ Retaining Wall	SF	$75.00	2400	$180,000.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$124,546.84
Inflation Factor	LUMP	15.3%		$82,574.56
Total			**$622,277.55**	

ST. ANDREWS ST.

Item	Unit	Unit Price	ALTERNATE H1 (SWITCHBACK PATH)		ALTERNATE H2 (IMPROVED STAIRWAY)	
			QTY	COST	QTY	COST
Roadway						
Clearing and Grubbing	LUMP			$2,000.00	-	
Pavement Removed	SY	$17	-		-	
Walk Removed	SF	$4	-		-	
Steps Removed	FT	$68	-		-	
Curb Removed	FT	$11	-		-	
Handrail Removed	FT	$8	-		-	
Retaining Wall Removed	SF	$25	-		-	
Removal Misc.: Fence and Bollards	FT	$5	-		-	
Guardrail Removed	FT	$3	-		-	
Excavation	CY	$35	40	$1,384.44	42	$1,457.04
Embankment	CY	$30	-		-	
Subgrade Compaction	SY	$3	346	$1,037.33	126	$377.33
Seeding and Mulching	SY	$5	-		-	
Topsoil, T=4"	CY	$6	-		-	
Fence, Misc.: 8' Chain Link	FT	$30	-		-	
Fence, Misc.: Wood Bike Railing	FT	$85	-		-	
Curb Ramp	SF	$23	25	$575.00	-	
Curb, Type 6	FT	$42	20	$840.00	-	
Guardrail, Type MGS	FT	$22	-		-	
Subgrade Remediation	CY	$100	40	$3,955.56	42	$4,192.59
Concrete Steps	FT	$496	-		50	$24,800.00
Railing	FT	$150	480	$72,000.00	100	$15,000.00
Drainage & Erosion Control						
Catch Basin Adjusted To Grade	EA	$1,115	-		-	
Manhole Adjusted To Grade	EA	$1,050	-		-	
Catch Basin/ Manhole Removed	EA	$800	-		-	
Manhole	EA	$6,000	-		-	
Catch Basin	EA	$5,000	-		-	
Conduit <24"	LUMP		-		-	
BMP Vegetated Filter Strip	SY	$5	-		-	
Pavement						
Asphalt Concrete Surface Course, Type 1	CY	$350	18	$6,146.60	5	$1,868.83
Asphalt Concrete Intermediate Course, Type 2	CY	$350	21	$7,250.62	5	$1,903.40
Unreinforced Concrete Base	CY	$215	20	$4,252.22	20	$4,252.22
Aggregate Base	CY	$79	58	$4,552.74	21	$1,656.07
Traffic Control						
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-		-	
Structures						
Segmental/ Retaining Wall	SF	$75.00	1770	$132,750.00	330	$24,750.00
Rookwood Bridge Modifications	LUMP		-		-	
Delta Ave Bridge Modifications	LUMP		-		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-		-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-		-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-		-	
Walworth Tunnel	LUMP		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-	
Congress Tunnel	LUMP		-		-	
Railroad						
Rookwood Bridge Track Shift	LUMP		-		-	
Delta Ave Bridge Track Shift	LUMP		-		-	
Incidentals						
Contingency	LUMP	30.0%		$71,023.36		$24,077.24
Inflation Factor	LUMP	15.3%		$47,088.48		$15,963.21
Total			**$354,856.36**		**$120,297.94**	

ST. ANDREWS ST. TO WALWORTH TUNNEL				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$20,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	1745	$61,067.38
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	5982	$17,946.33
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	3167	$95,010.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	1994	$199,403.70
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	2	$2,100.00
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	332	$116,318.83
Asphalt Concrete Intermediate Course, Type 2	CY	$350	415	$145,398.53
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	997	$78,764.46
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.60	$14,995.27
Structures				
Segmental/ Retaining Wall	SF	$75.00	1500	$112,500.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$259,051.35
Inflation Factor	LUMP	15.3%		$171,751.05
Total			**$1,294,306.91**	

WALWORTH TUNNEL				
Item	Unit	Unit Price	ACCESS POINT	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP	$100,000	-	
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	75	$375.00
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	56	$1,952.06
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	191	$573.67
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	-	
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	30	$690.00
Curb, Type 6	FT	$42	6	$252.00
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	64	$6,374.07
Concrete Steps	FT	$496	-	
Railing	FT	$150	45	$6,750.00
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	11	$3,718.21
Asphalt Concrete Intermediate Course, Type 2	CY	$350	13	$4,647.76
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	32	$2,517.76
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-	
Structures				
Segmental/ Retaining Wall	SF	$75.00	126	$9,450.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP			$20,000.00
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$17,190.16
Inflation Factor	LUMP	15.3%		$11,397.08
Total			**$85,887.77**	

WALWORTH TUNNEL TO DELTA AVE. BRIDGE								
Item	Unit	Unit Price	ALTERNATIVE J1 (CONSTRAINED)		ALTERNATIVE J2 (12FT TRAIL)		ALTERNATIVE J3 (12FT TRAIL) W/ TRACK REALIGNMENT	
			QTY	COST	QTY	COST	QTY	COST
Roadway								
Clearing and Grubbing	LUMP			$10,000.00		$10,000.00		$10,000.00
Pavement Removed	SY	$17	-		-		-	
Walk Removed	SF	$4	-		-		-	
Steps Removed	FT	$68	-		-		-	
Curb Removed	FT	$11	-		-		-	
Handrail Removed	FT	$8	-		-		-	
Retaining Wall Removed	SF	$25	-		4200	$105,000.00	-	
Removal Misc.: Fence and Bollards	FT	$5	-		-		-	
Guardrail Removed	FT	$3	-		-		-	
Excavation	CY	$35	228	$7,962.50	298	$10,412.50	298	$10,412.50
Embankment	CY	$30	-		-		-	
Subgrade Compaction	SY	$3	939	$2,816.67	1228	$3,683.33	1228	$3,683.33
Seeding and Mulching	SY	$5	-		-		-	
Topsoil, T=4"	CY	$6	-		-		-	
Fence, Misc.: 8' Chain Link	FT	$30	1300	$39,000.00	1300	$39,000.00	1300	$39,000.00
Fence, Misc.: Wood Bike Railing	FT	$85	-		-		-	
Curb Ramp	SF	$23	-		-		-	
Curb, Type 6	FT	$42	-		-		-	
Guardrail, Type MGS	FT	$22	-		-		-	
Subgrade Remediation	CY	$100	313	$31,296.30	340	$34,000.00	409	$40,925.93
Concrete Steps	FT	$496	-		-		-	
Railing	FT	$150	-		-		-	
Drainage & Erosion Control								
Catch Basin Adjusted To Grade	EA	$1,115	-		-		-	
Manhole Adjusted To Grade	EA	$1,050	-		-		-	
Catch Basin/ Manhole Removed	EA	$800	-		-		-	
Manhole	EA	$6,000	-		-		-	
Catch Basin	EA	$5,000	-		-		-	
Conduit <24"	LUMP		-		-		-	
BMP Vegetated Filter Strip	SY	$5	-		-		-	
Pavement								
Asphalt Concrete Surface Course, Type 1	CY	$350	52	$18,256.17	68	$23,873.46	68	$23,873.46
Asphalt Concrete Intermediate Course, Type 2	CY	$350	65	$22,820.22	85	$29,841.82	85	$29,841.82
Unreinforced Concrete Base	CY	$215	-		-		-	
Aggregate Base	CY	$79	156	$12,362.04	205	$16,165.74	205	$16,165.74
Traffic Control								
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.12	$3,077.65	0.12	$3,077.65	0.12	$3,077.65
Structures								
Segmental/ Retaining Wall	SF	$75.00	-		-		-	
Rookwood Bridge Modifications	LUMP		-		-		-	
Delta Ave Bridge Modifications	LUMP			$50,000.00		$450,000.00	-	$50,000.00
Rookwood Retaining Wall Relocation	SF	$120.00	-		-		-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		4200	$504,000.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-		-		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-		-		-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-		-		-	
Walworth Tunnel	LUMP		-		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-		-	
Congress Tunnel	LUMP		-		-		-	
Railroad								
Rookwood Bridge Track Shift	LUMP		-		-		-	
Delta Ave Bridge Track Shift	LUMP		-		-			$70,000.00
Incidentals								
Contingency	LUMP	30.0%		$44,277.46		$233,716.35		$74,094.13
Inflation Factor	LUMP	15.3%		$37,005.96		$223,803.94		$56,774.41
Total			**$278,874.96**		**$1,686,574.80**		**$427,848.97**	

DELTA AVE. PEDESTRAIN ACCESS POINT				
Item	Unit	Unit Price	ACCESS POINT	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP		-	$2,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	60	$1,500.00
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	73	$2,571.37
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	252	$755.67
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	-	
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	84	$8,396.30
Concrete Steps	FT	$496	-	
Railing	FT	$150	702	$105,300.00
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	14	$4,897.84
Asphalt Concrete Intermediate Course, Type 2	CY	$350	17	$6,122.30
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	42	$3,316.54
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-	
Structures				
Segmental/ Retaining Wall	SF	$75.00	501	$37,575.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$51,730.50
Inflation Factor	LUMP	15.3%		$34,297.32
Total			**$258,462.83**	

DELTA AVE. ACCESS POINT TO STANLEY AVE. ACCESS POINT				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$20,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	441	$15,425.93
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	1511	$4,533.33
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	800	$24,000.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	504	$50,370.37
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	84	$29,382.72
Asphalt Concrete Intermediate Course, Type 2	CY	$350	105	$36,728.40
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	252	$19,896.30
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.15	$3,787.88
Structures				
Segmental/ Retaining Wall	SF	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$61,237.47
Inflation Factor	LUMP	15.3%		$40,600.45
Total			**$305,962.84**	

STANLEY AVE. ACCESS POINT				
Item	Unit	Unit Price	ACCESS POINT	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP	$100,000	-	
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	36	$900.00
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	168	$5,878.87
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	576	$1,727.67
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	-	
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	192	$19,196.30
Concrete Steps	FT	$496	-	
Railing	FT	$150	349	$52,350.00
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	32	$11,197.84
Asphalt Concrete Intermediate Course, Type 2	CY	$350	40	$13,997.30
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	96	$7,582.54
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-	
Structures				
Segmental/ Retaining Wall	SF	$75.00	951	$71,325.00
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$55,246.65
Inflation Factor	LUMP	15.3%		$36,628.53
Total			**$276,030.69**	

STANLEY AVE. BRIDGE				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP	$100,000	-	
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	-	
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	178	$533.33
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	100	$3,000.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	59	$5,925.93
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	10	$3,456.79
Asphalt Concrete Intermediate Course, Type 2	CY	$350	12	$4,320.99
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	30	$2,340.74
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.02	$473.48
Structures				
Segmental/ Retaining Wall	SF	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	$50,000.00
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$6,015.38
Inflation Factor	LUMP	15.3%		$11,638.20
Total			**$87,704.84**	

STANLEY AVE. BRIDGE TO CONGRESS TUNNEL/TUSCULUM AVE. ACCESS POINT				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$5,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	331	$11,569.44
Embankment	CY	$30	337	$10,110.00
Subgrade Compaction	SY	$3	1133	$3,400.00
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	600	$18,000.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	378	$37,777.78
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	63	$22,037.04
Asphalt Concrete Intermediate Course, Type 2	CY	$350	79	$27,546.30
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	189	$14,922.22
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.11	$2,840.91
Structures				
Segmental/ Retaining Wall	SF	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	$20,000.00
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$51,961.11
Inflation Factor	LUMP	15.3%		$34,450.21
Total			**$259,615.01**	

TUSCULUM AVE. ACCESS POINT				
Item	Unit	Unit Price	ACCESS POINT	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP		-	$1,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	60	$1,500.00
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	11	$396.99
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	39	$116.67
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	-	
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	13	$1,296.30
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	2	$756.17
Asphalt Concrete Intermediate Course, Type 2	CY	$350	3	$945.22
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	6	$512.04
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-	
Structures				
Segmental/ Retaining Wall	SF	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$1,957.01
Inflation Factor	LUMP	15.3%		$1,297.50
Total			**$9,777.89**	

TUSCULUM AVE. ACCESS POINT TO DONHAM ST. ACCESS POINT				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP			$5,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	303	$10,605.32
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	1039	$3,116.67
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	550	$16,500.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	346	$34,629.63
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	58	$20,200.62
Asphalt Concrete Intermediate Course, Type 2	CY	$350	72	$25,250.77
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	173	$13,678.70
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.10	$2,604.17
Structures				
Segmental/ Retaining Wall	SF	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$39,475.76
Inflation Factor	LUMP	15.3%		$26,172.43
Total			**$197,234.07**	

DONHAM ST. ACCESS POINT				
Item	Unit	Unit Price	ACCESS POINT	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP		-	$1,000.00
Pavement Removed	SY	$17	-	
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	35	$1,212.52
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	119	$356.33
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	-	
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	-	
Curb, Type 6	FT	$42	-	
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	40	$3,959.26
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	7	$2,309.57
Asphalt Concrete Intermediate Course, Type 2	CY	$350	8	$2,886.96
Unreinforced Concrete Base	CY	$215	-	
Aggregate Base	CY	$79	20	$1,563.91
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-	
Structures				
Segmental/ Retaining Wall	SF	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$3,986.57
Inflation Factor	LUMP	15.3%		$2,643.09
Total			**$19,918.21**	

DONHAM ST. ACCESS POINT TO CARREL ST.				
Item	Unit	Unit Price	12FT TRAIL	
			QTY	COST
Roadway				
Clearing and Grubbing	LUMP		1	$10,000.00
Pavement Removed	SY	$17	360	$6,123.78
Walk Removed	SF	$4	-	
Steps Removed	FT	$68	-	
Curb Removed	FT	$11	-	
Handrail Removed	FT	$8	-	
Retaining Wall Removed	SF	$25	-	
Removal Misc.: Fence and Bollards	FT	$5	-	
Guardrail Removed	FT	$3	-	
Excavation	CY	$35	827	$28,962.18
Embankment	CY	$30	-	
Subgrade Compaction	SY	$3	2837	$8,511.33
Seeding and Mulching	SY	$5	-	
Topsoil, T=4"	CY	$6	-	
Fence, Misc.: 8' Chain Link	FT	$30	1502	$45,060.00
Fence, Misc.: Wood Bike Railing	FT	$85	-	
Curb Ramp	SF	$23	340	$7,820.00
Curb, Type 6	FT	$42	20	$840.00
Guardrail, Type MGS	FT	$22	-	
Subgrade Remediation	CY	$100	946	$94,570.37
Concrete Steps	FT	$496	-	
Railing	FT	$150	-	
Drainage & Erosion Control				
Catch Basin Adjusted To Grade	EA	$1,115	-	
Manhole Adjusted To Grade	EA	$1,050	-	
Catch Basin/ Manhole Removed	EA	$800	-	
Manhole	EA	$6,000	-	
Catch Basin	EA	$5,000	-	
Conduit <24"	LUMP		-	
BMP Vegetated Filter Strip	SY	$5	-	
Pavement				
Asphalt Concrete Surface Course, Type 1	CY	$350	173	$60,419.29
Asphalt Concrete Intermediate Course, Type 2	CY	$350	212	$74,210.80
Unreinforced Concrete Base	CY	$215	60	$12,907.96
Aggregate Base	CY	$79	533	$42,098.22
Traffic Control				
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	0.28	$7,111.74
Structures				
Segmental/ Retaining Wall	SF	$75.00	-	
Rookwood Bridge Modifications	LUMP		-	
Delta Ave Bridge Modifications	LUMP		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-	
Walworth Tunnel	LUMP		-	
Stanley Ave Bridge Modifications	LUMP		-	
Congress Tunnel	LUMP		-	
Railroad				
Rookwood Bridge Track Shift	LUMP		-	
Delta Ave Bridge Track Shift	LUMP		-	
Incidentals				
Contingency	LUMP	30.0%		$119,590.70
Inflation Factor	LUMP	15.3%		$79,288.64
Total			**$597,515.02**	

CARREL ST						
Item	Unit	Unit Price	ALTERNATE K1 (SIDE PATH)		ALTERNATE K2 (SWITCHBACK PATH)	
			QTY	COST	QTY	COST
Roadway						
Clearing and Grubbing	LUMP		-		-	$1,000.00
Pavement Removed	SY	$17	-		-	
Walk Removed	SF	$4	-		-	
Steps Removed	FT	$68	-		-	
Curb Removed	FT	$11	-		32	
Handrail Removed	FT	$8	-		-	
Retaining Wall Removed	SF	$25	-		-	
Removal Misc.: Fence and Bollards	FT	$5	-		-	
Guardrail Removed	FT	$3	-		-	
Excavation	CY	$35	46	$1,610.65	77	$2,680.25
Embankment	CY	$30	-		-	
Subgrade Compaction	SY	$3	158	$473.33	263	$787.67
Seeding and Mulching	SY	$5	-		-	
Topsoil, T=4"	CY	$6	-		-	
Fence, Misc.: 8' Chain Link	FT	$30	-		-	
Fence, Misc.: Wood Bike Railing	FT	$85	-		-	
Curb Ramp	SF	$23	352	$8,096.00	352	$8,096.00
Curb, Type 6	FT	$42	90	$3,780.00	504	$21,168.00
Guardrail, Type MGS	FT	$22	-		-	
Subgrade Remediation	CY	$100	53	$5,259.26	88	$8,751.85
Concrete Steps	FT	$496	-		-	
Railing	FT	$150	-		228	$34,200.00
Drainage & Erosion Control						
Catch Basin Adjusted To Grade	EA	$1,115	-		-	
Manhole Adjusted To Grade	EA	$1,050	-		-	
Catch Basin/ Manhole Removed	EA	$800	-		-	
Manhole	EA	$6,000	-		-	
Catch Basin	EA	$5,000	-		-	
Conduit <24"	LUMP		-		-	
BMP Vegetated Filter Strip	SY	$5	-		-	
Pavement						
Asphalt Concrete Surface Course, Type 1	CY	$350	9	$3,067.90	15	$5,105.25
Asphalt Concrete Intermediate Course, Type 2	CY	$350	11	$3,834.88	18	$6,381.56
Unreinforced Concrete Base	CY	$215	-		-	
Aggregate Base	CY	$79	26	$2,077.41	44	$3,456.98
Traffic Control						
Pavement Markings/ Signs Ground Mounted	Mile	$ 25,000	-		-	
Structures						
Segmental/ Retaining Wall	SF	$75.00	-		684	$51,300.00
Rookwood Bridge Modifications	LUMP		-		-	
Delta Ave Bridge Modifications	LUMP		-		-	
Rookwood Retaining Wall Relocation	SF	$120.00	-		-	
Delta Ave Retaining Wall Relocation	SF	$120.00	-		-	
Lancaster Tunnel and Stairwell Abandonment	LUMP		-		-	
Lancaster Tunnel and Stairwell Replacement	LUMP		-		-	
Torrence Station G4 Elevated Boardwalk	SF	$200.00	-		-	
Torrence Station G5 Elevated Boardwalk	SF	$200.00	-		-	
Walworth Tunnel	LUMP		-		-	
Stanley Ave Bridge Modifications	LUMP		-		-	
Congress Tunnel	LUMP		-		-	
Railroad					-	
Rookwood Bridge Track Shift	LUMP		-		-	
Delta Ave Bridge Track Shift	LUMP		-		-	
Incidentals						
Contingency	LUMP	30.0%		$8,459.83		$42,878.27
Inflation Factor	LUMP	15.3%		$5,608.87		$28,428.29
Total			**$42,268.12**		**$214,234.12**	

CY 2026-2030 Business Plan Inflation Calculator:

Not sure if you have the latest calculator? Click here.

Last Modified: 1/30/2026

Today's Date:
May 14, 2026

Please Enter Values in the Yellow Areas Only:

Estimation Start Date:
Less than or Equal to Today's Date
(mm/dd/yyyy)

4/14/2026
Start Date:

Enter Construction Mid-Point Date:
(cannot exceed 05/14/2051)
(mm/dd/yyyy)

5/1/2030
Construction Mid-Point Date:

Present-Day Estimated Cost:

$14,000,000.00
Estimated Dollar Amount:

Estimate Start Date to Construction Mid-Point Date: **49** **Months**

Inflation - Start to Mid-Point of Construction:

	(compounded growth rate)	Inflated Dollar Amount:
Business Plan	**15.3%**	**$16,141,447.43**

Estimator's Name:

County - Route - Section:

PID:

Estimator's Notes: