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Co2. Utilities

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Co2. Utilities

Co2.1 Introduction

Utilities on Tyndall Air Force Base (AFB) include vital services that support the operation of the base, including water, sewer, power, and communications. In terms of the **Landscape Master Plan**, the primary concerns for utilities are to avoid disrupting these services during construction activities, bolster system resilience in the event of emergencies and future storms, and ease maintenance activities and anticipated growth needs.

C02.1.1 Authority

All utility-related improvements are governed by utility Owners and must align with the requirements of the *Tyndall AFB Installation Facilities Standards* (IFS) as well as the recommendations of this **Landscape Master Plan**.

Co2.2 Design Objectives

To achieve Tyndall AFB’s vision of becoming a sustainable, resilient Installation of the Future, the utilities design and installation will:

- Maintain the desired aesthetic character of the base
- Facilitate ease of maintenance and service, particularly after a storm event
- Accommodate anticipated technological advancements, including self-monitoring analysis and reporting technology (SMART) systems

Co2.3 Design Approach

The overall approach to utilities design and installation can be summed up in the phase “out of sight, out of mind.” *Out of sight* refers to the use of underground utility lines as well as screening for any utility equipment required to be above ground. *Out of mind* refers to lessening the level concern about how resilient the base’s utilities will be during future storm events with accompanying high wind and flooding.

Consideration is also given to the increasing demand for digital communications, which has grown exponentially in recent years. Supporting the current requirements, as well as anticipating future advancements, requires laying additional digital cables. The infrastructure that is needed to support SMART systems and hard-wired lighting requires laying additional conduit.

Co2.4 Utility Typologies & Criteria

C02.4.1 Overview

Each landscape-related utility typology addresses unique circumstances found on the base. The various typologies are as follows:

- Underground utility easements
- Screening for utility infrastructure
- Low-impact development (LID)
- Flightline utility corridor

C02.4.2 Utilities Criteria (UC)

The criteria in this section relate to specific design requirements, including IFS requirements, and guidelines for designers/contractors to follow and Tyndall AFB personnel to review. Additional criteria are provided in the other sections of this **Landscape Master Plan** and are not repeated in this section; however, the requirements for utilities must be coordinated with other site elements. The sections that follow serve as worksheets, with supporting guidance and illustrations, for designers/contractors to use among their teams and in coordination with Tyndall AFB. These worksheets should be used to complete the **Compliance Checklist** submittal for each project. Each requirement includes a selection of check boxes to indicate the applicability of that requirement to a specific context, and to demonstrate compliance with the requirements.

Yes No N/A
☒ ☐ ☐ The designer/contractor either selects “Yes” if compliance has been met, “No” if it has not, or “N/A” if the requirement is not applicable to the project.

C02.4.3 Typical Underground Utility Clear Zones & Easements

Interdisciplinary coordination is necessary to design and implement utility clear zones and easement that provide ready access for maintenance and repairs and protect the utility infrastructure from damage. Easements or clear zones must be designated to prevent locating structures, trees, and other large unmovable site improvements near underground utilities. These restricted areas will reduce the possibility of underground infrastructure being damaged by tree roots or falling/uprooted trees during storm events. In addition, clear zones and easements provide easier access for performing utility maintenance and emergency repairs and limit the need to remove trees or other landscaping elements to complete these functions.

Easements and clear zones for all base-owned utilities must conform to the direction of Tyndall AFB Civil Engineer Squadron. Privatized utilities and easements must be constructed in accordance with the standards of the individual utility provider.

- Yes No N/A
- ☐

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UC 1. Provide a minimum 10-foot clear zone or easement for all underground utilities.
- ☐

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UC 2. Do not place structures or trees within clear zones or easements.
- ☐

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UC 3. Comply with the Utility owner’s clear zone/easement requirements for all privatized utilities.
- ☐

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☐

UC 4. Provide a minimum clear zone or easement of 10 feet from the centerline or edge of underground structure or equipment pad for all Air Force-owned.

C02.4.4 Screening for Utility Infrastructure

Screening all aboveground utility infrastructure aligns with the visual and aesthetic intent of the **Landscape Master Plan**.

- Yes No N/A
- ☐

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☐

UC 5. Use evergreen shrubs to screen all aboveground utility boxes and infrastructure from adjacent road or sidewalk.
- ☐

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☐

UC 6. Provide a minimum 4-foot offset from the shrubs’ planted edge to the edge of the utility box to allow enough clearance for utility maintenance to be performed.

Exhibit C02-1. Typical Underground Utility Clear Zone/Easement Section

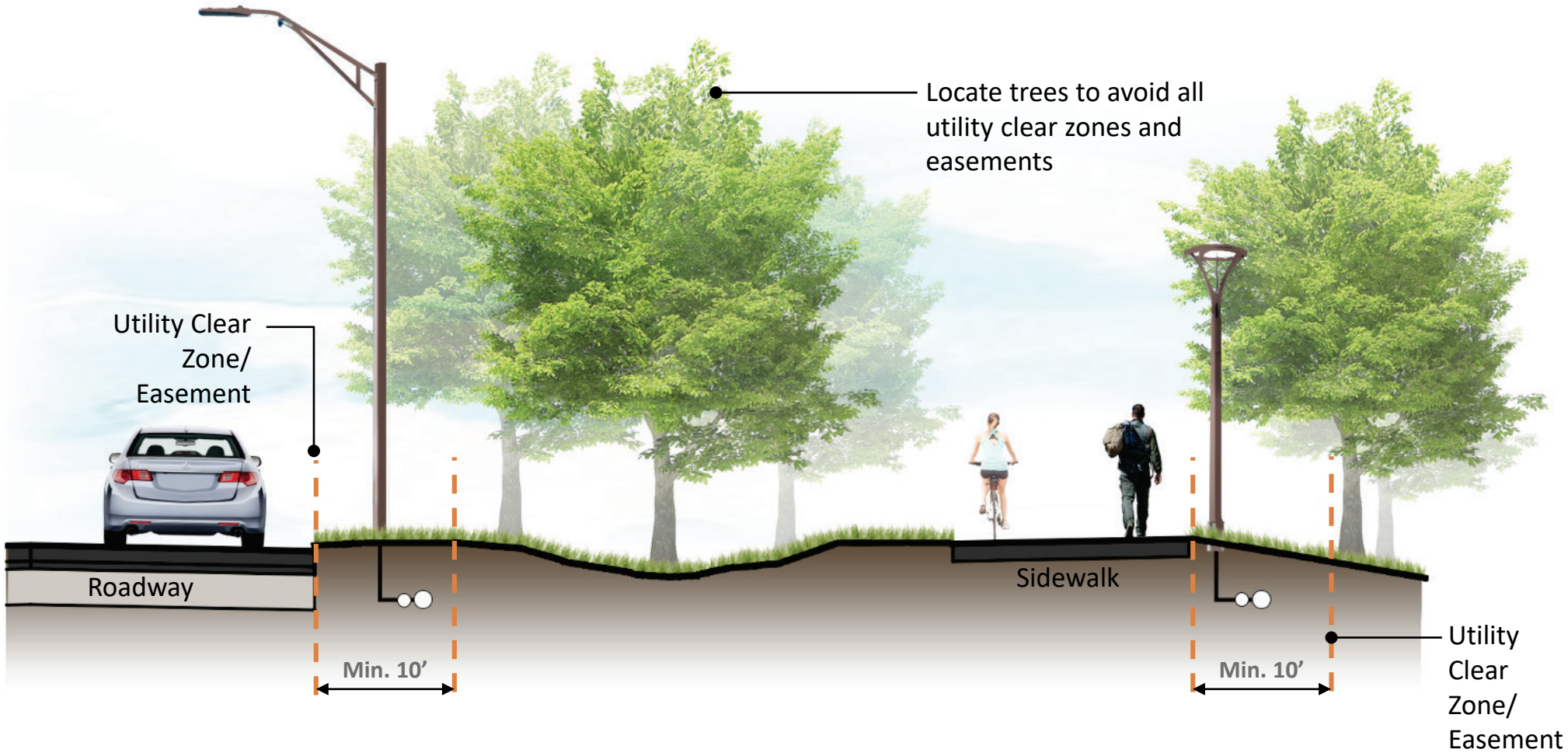
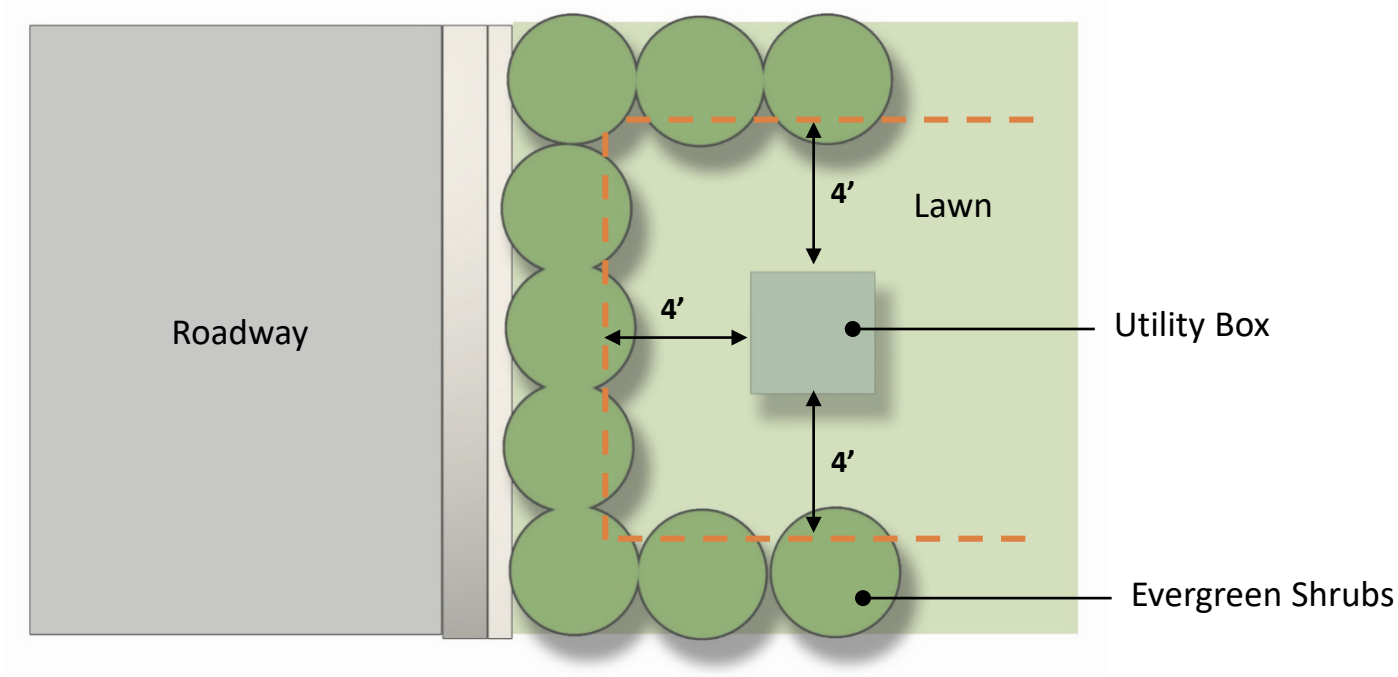


Exhibit C02-2. Typical Shrub Planting to Screen Utility Infrastructure, Plan View



C02.4.5 Low-Impact Development

LID principles, as outlined in **Section B04, Integrated Land Management**, are used throughout major portions of Tyndall AFB. A successful LID approach requires interdisciplinary coordination to protect utility corridors.

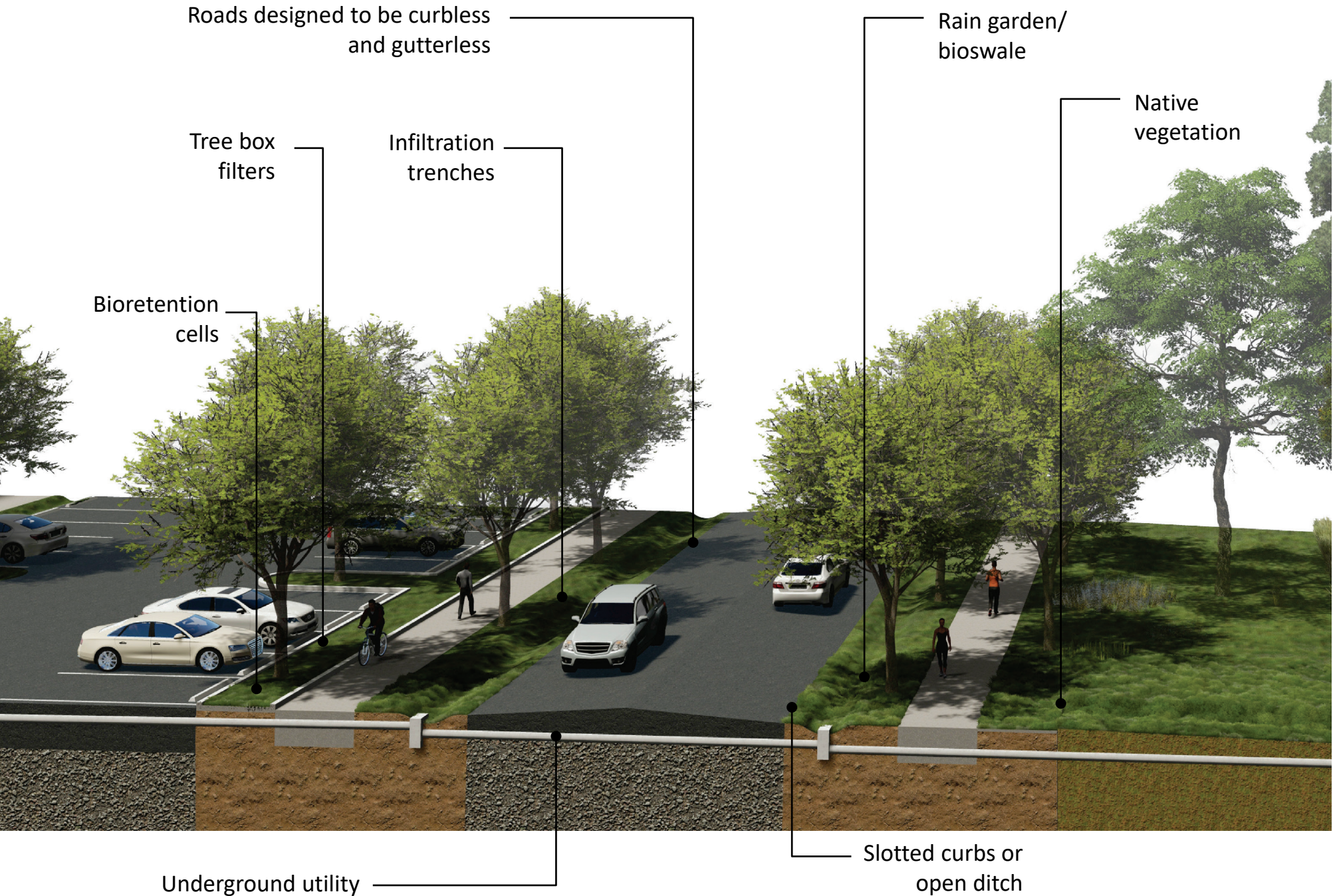
Yes No N/A

☐ ☐ ☐ UC 7. Coordinate with engineered systems that filter stormwater from parking lots and impervious surfaces, such as bioretention cells, filter strips, and tree box filters. Ensure all plantings, pipes, and utilities are designed in concert with each other.

☐ ☐ ☐ UC 8. Use native vegetated areas to filter, direct, and retain stormwater, such as rain gardens and bio-swales. Ensure adequate coverage and clearance requirements are met.

☐ ☐ ☐ UC 9. Locate plantings and utilities so they do not interfere with water collection systems, such as subsurface collection facilities, cisterns, or rain barrels.

Exhibit C02-3. Typical LID Section



C02.4.6 Multi-Modal Spine Utility Corridor

The Multi-Modal Spine in the Flightline District is located above the underground utilities that serve the facilities in that area. This dense network of utilities provides critical services to the operation of all the Flightline missions. Design of the Multi-Modal Spine's hardscape and landscape elements, as well as the drainage systems, must be coordinated with the underground utilities so they do not impact the operation or maintenance requirements of the utilities.

- | Yes | No | N/A | |
|--------------------------|--------------------------|--------------------------|--|
| ☐ | ☐ | ☐ | UC 10. Design the landscaped areas to collect drainage from the entire corridor. |
| ☐ | ☐ | ☐ | UC 11. Coordinate drainage connections to the box culvert need to be coordinated with other utilities installed in the area. |
| ☐ | ☐ | ☐ | UC 12. Do not plant trees directly over underground utilities. |
| ☐ | ☐ | ☐ | UC 13. Coordinate with adjacent utilities and other corridor elements to avoid conflicts and allow for ease of maintenance. |
| ☐ | ☐ | ☐ | UC 14. Coordinate parking area and building utilities with corridor utilities. |
| ☐ | ☐ | ☐ | UC 15. Design foundations for items such as lighting and signage to avoid conflicts with underground utilities. |

Exhibit C02-4. Multi-Modal Spine Utility Corridor Section

