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BUS RAPID TRANSIT
for the
CITY OF NEW YORK

- Kit of parts updated with new elements, consistent graphics, and refined construction details.
- Bus bulb construction typologies updated based on built capital project experience.
- Single slope typology providing positive drainage is the preferred design for the construction of bus bulbs.
- Reverse slope typology updated with better guidance in laying out the elements to provide maximum accessibility and minimize tripping hazards.
- Accessible island typology to be considered only in extreme cases.
- New median station typology now included.



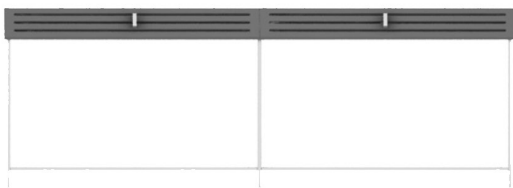
Bus Bulb Issues



Updated Kit of Parts



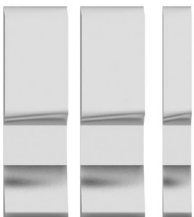
JCDecaux Bus Shelter



BJD Lean Bar



CityBench



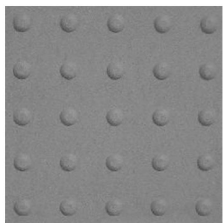
TVMs



Wayfinding Sign



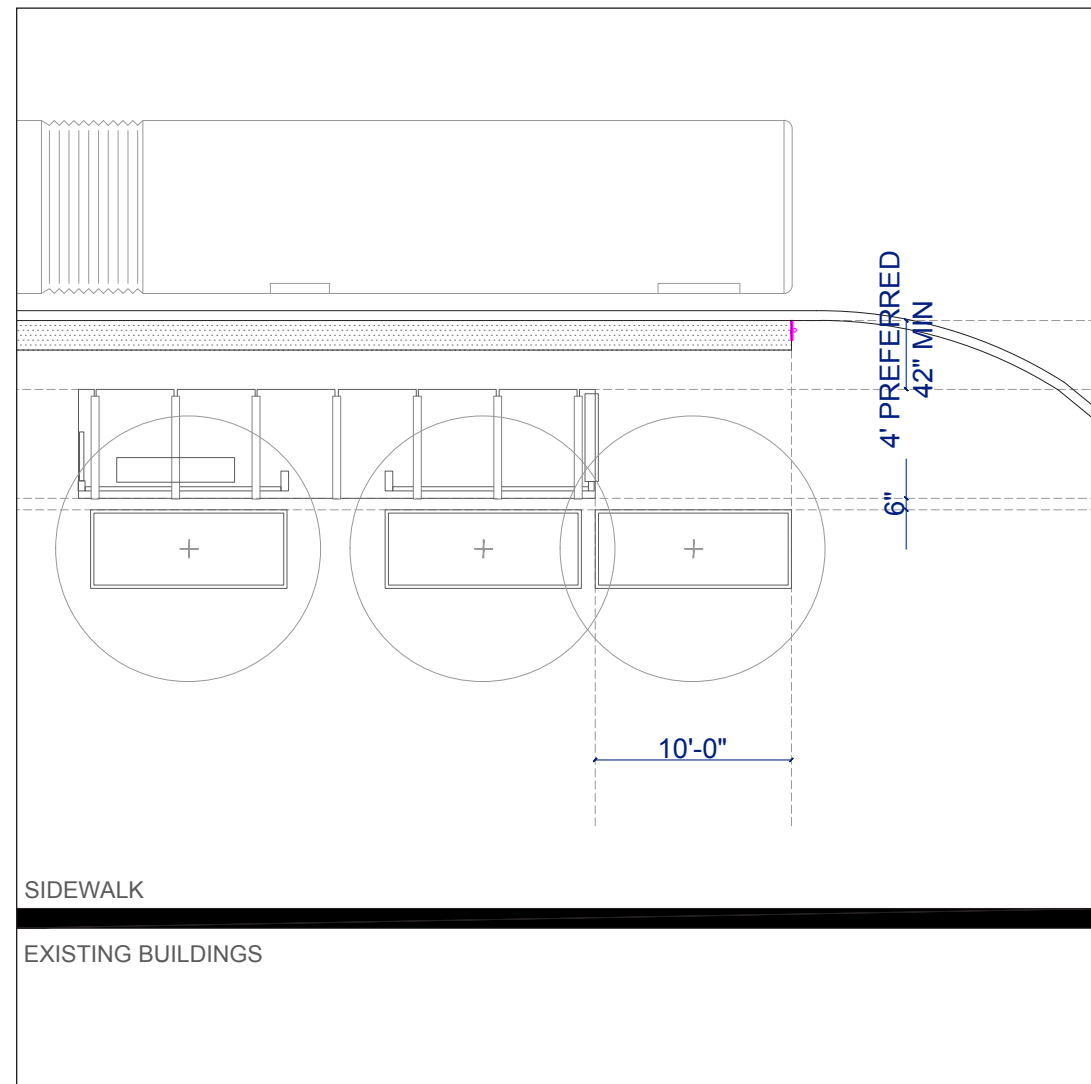
Green Infrastructure



Detectable Warning Strip



Ped Fence

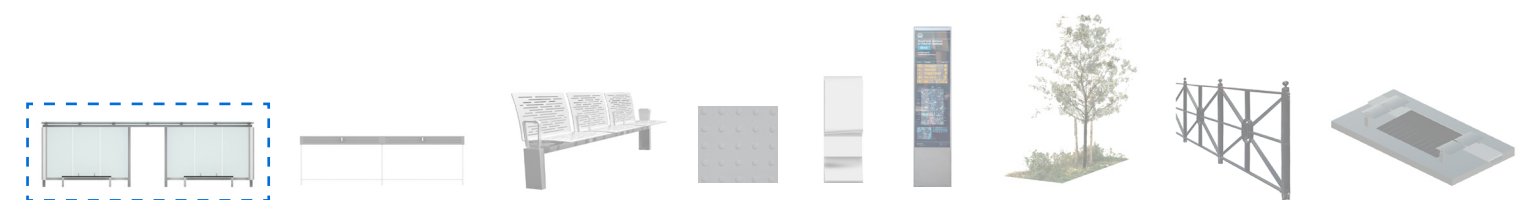


Maintain a clear path of 4', or 42" minimum from the Bus shelter to the back of the curb.

All other elements should be aligned to the back of the bus shelter.

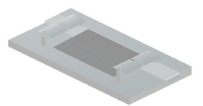
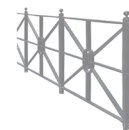
Street Furniture must be placed so as to not interfere with the Ad panel on the Bus Shelter.

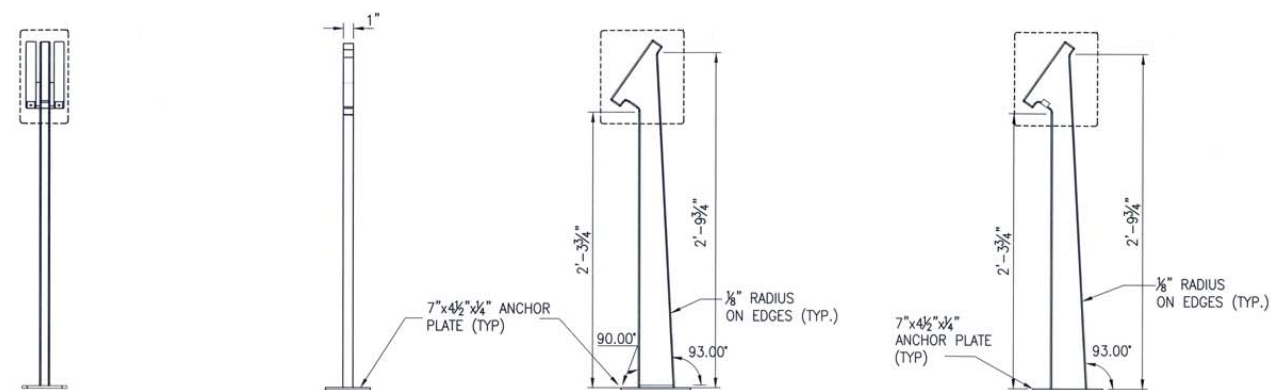
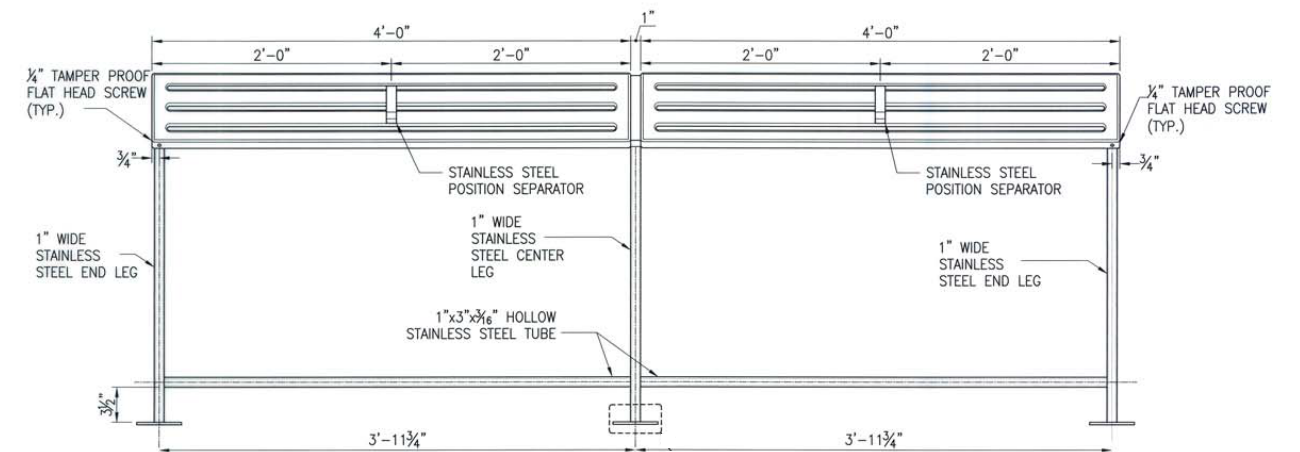
Bus shelter to be placed at a distance of 10' from the edge of the bus sign post.



Updated Graphics

The updated SBS maps were designed to be consistent with the WalkNYC Wayfinding graphics





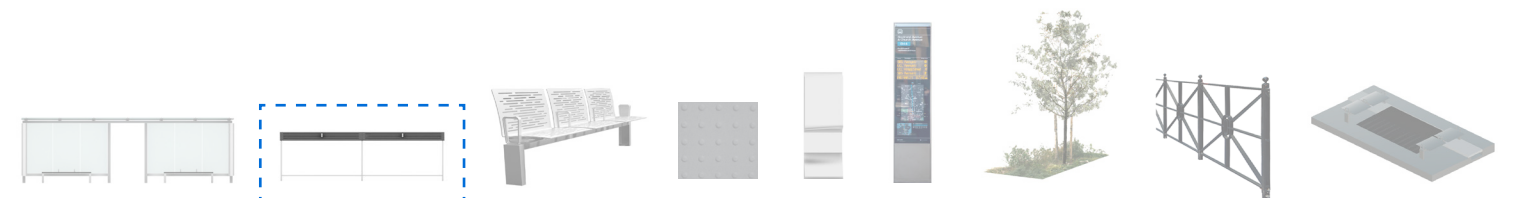
Detail Drawings of the Leaning Bar



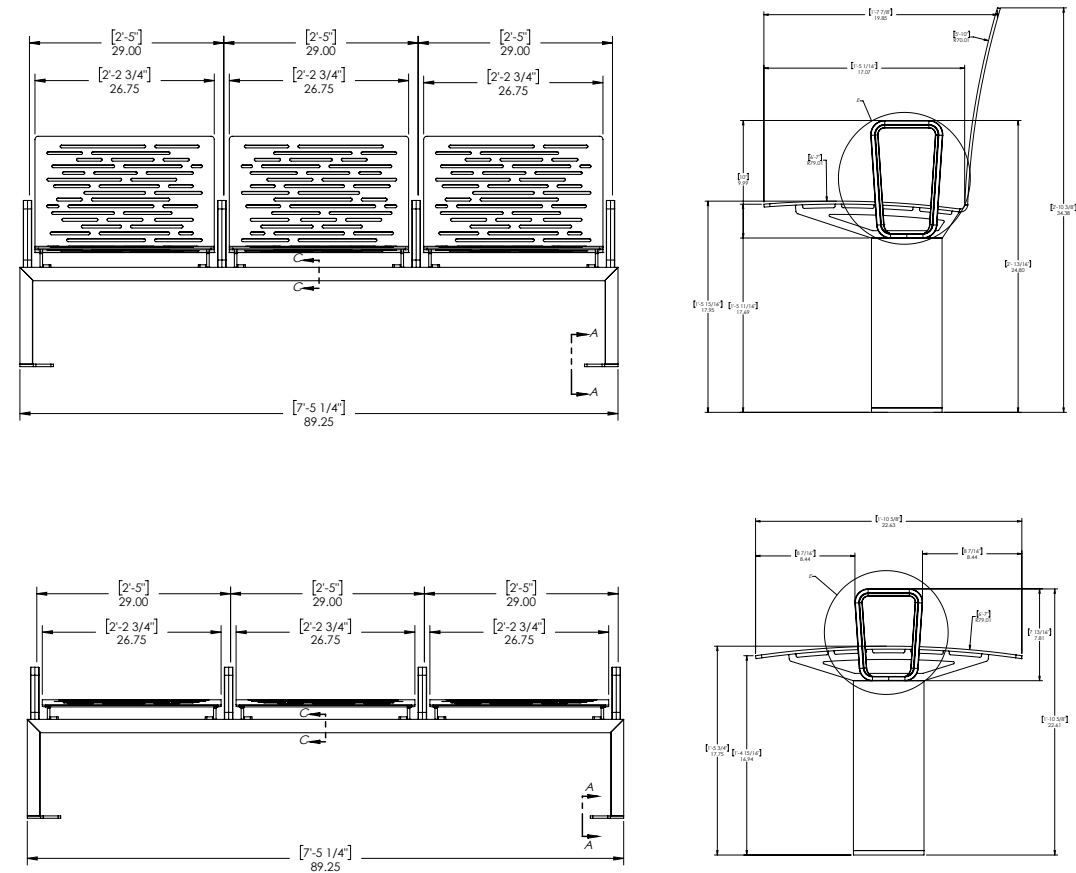
All elements should be aligned to the back of the Bus Shelter.

Positioned in designated platform zones proximate to shelters, allowing different opportunities for waiting/resting.

Located in designated platform zones away from shelters at stations with high ridership and proximity to community facilities.



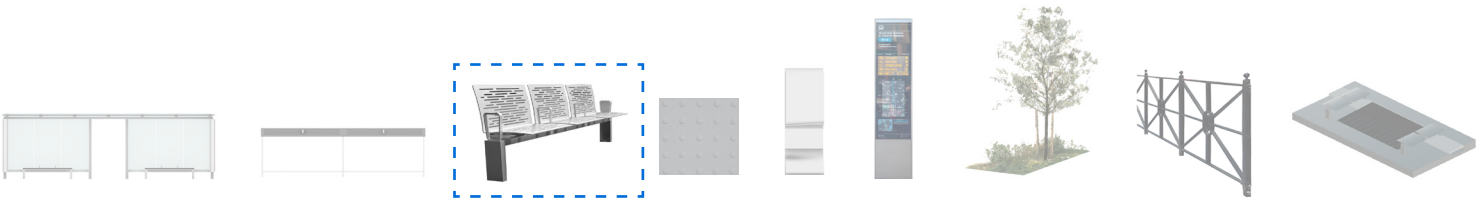
Updated Bench



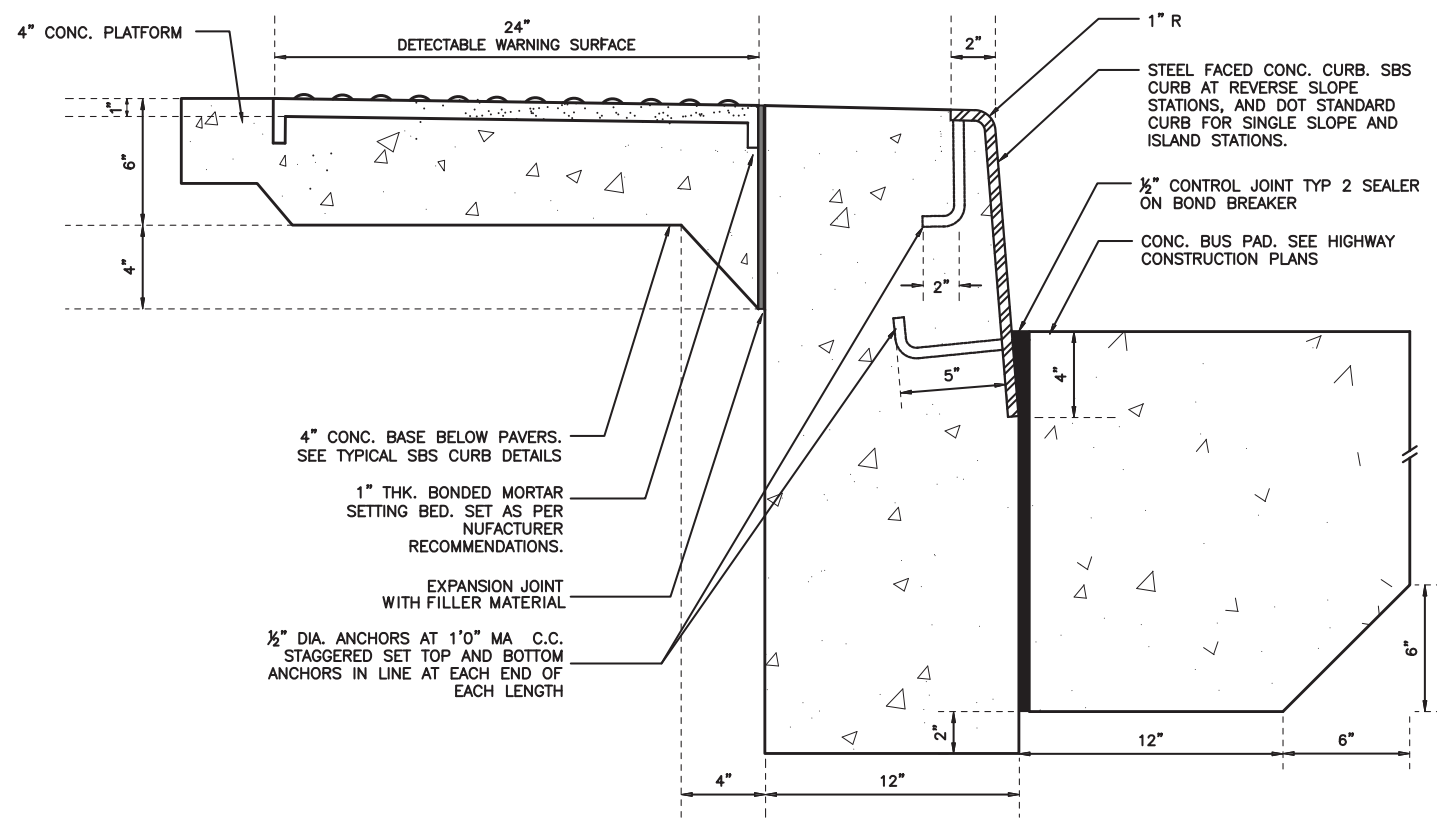
Detail drawings of the CityBench (v2.0)



DOT established the CityBench program in 2012 and installed benches citywide, over 2,000 to date. CityBenches are now regularly installed at bus stops throughout the City and can be maintained by DOT.



Updated Detectable Warning

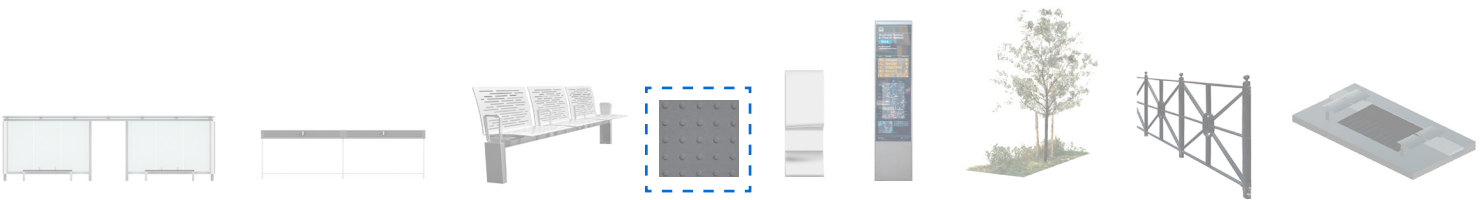
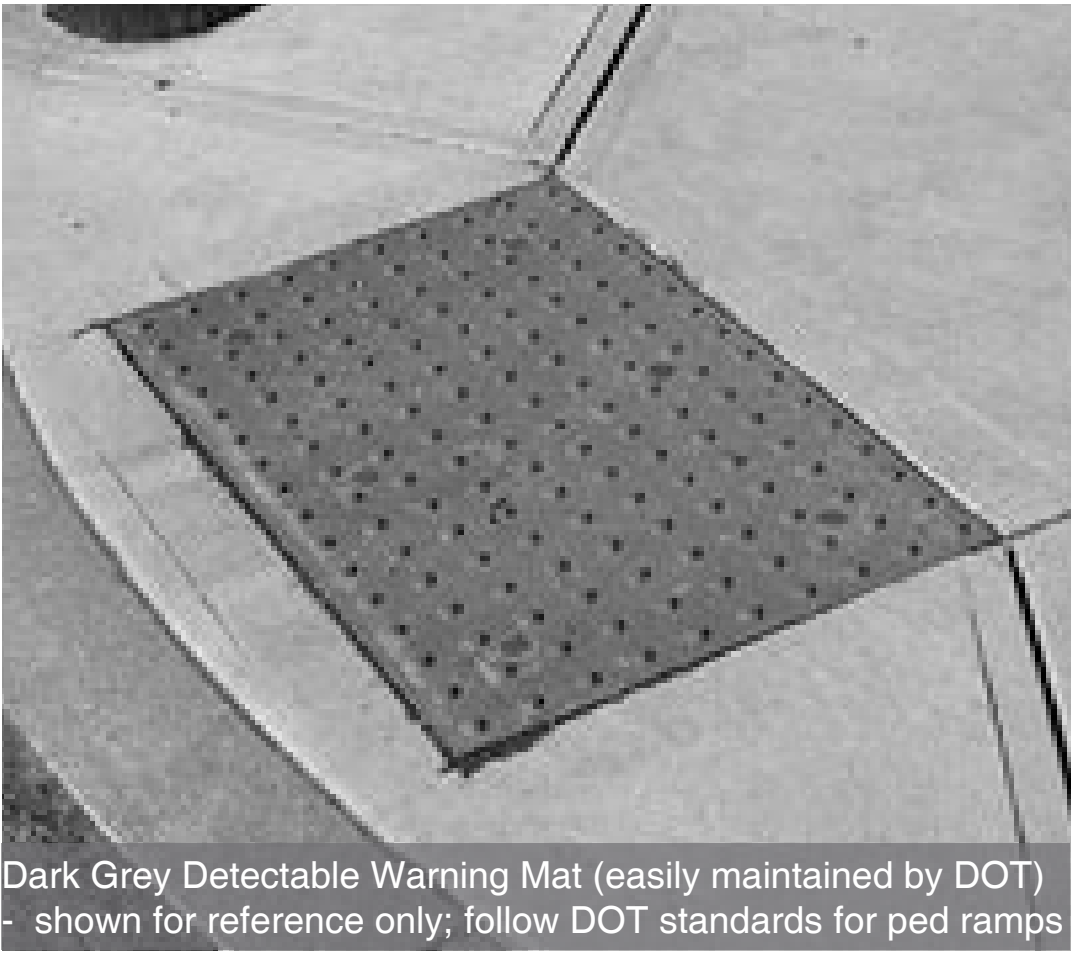


Detail Section through Detectable Warning Strip



Detectable Warning Strips shall be:

Dark Grey, Federal Standard 36118 with a reflectance factor of .09 and a CIE1931 chromaticity in daylight of (x=.320, y=.331)



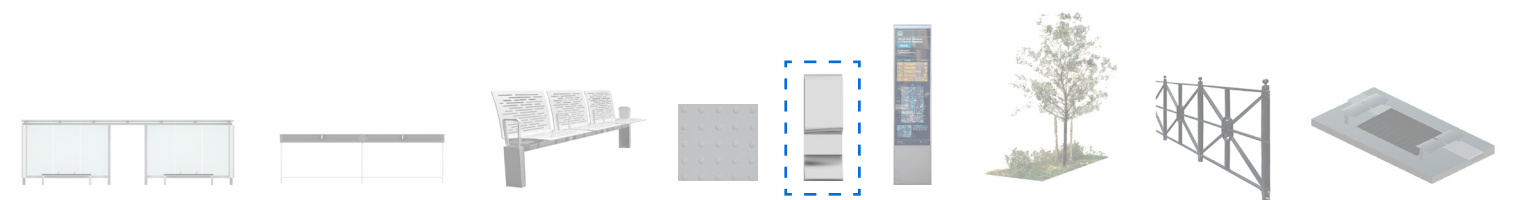


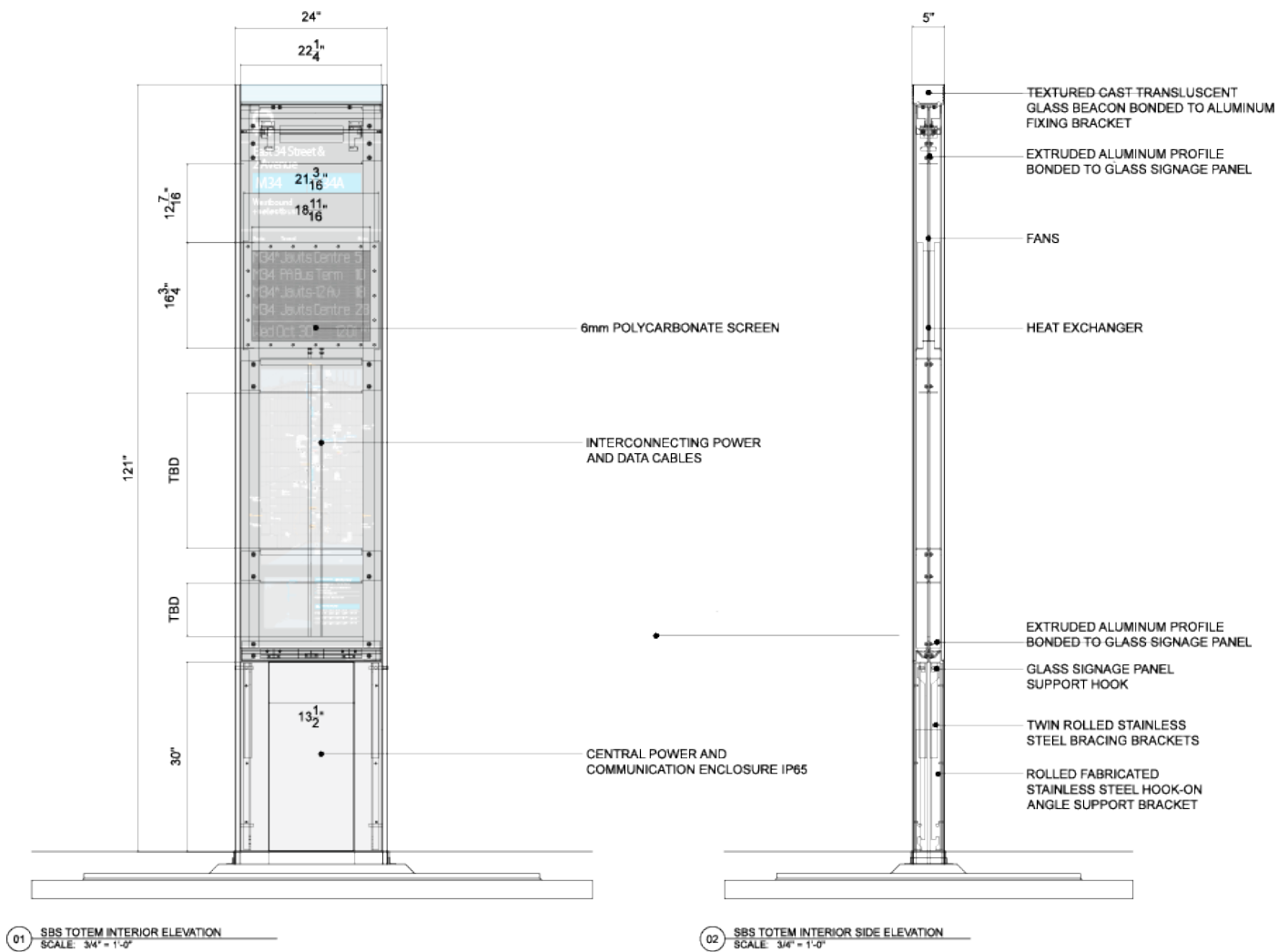
All elements should be aligned to the back of the Bus Shelter.

Street furniture to be placed at a minimum distance of 3' from the edge of the TVM's.

TVM's to face the sidewalk in case of narrow Bus Bulbs.

Back of TVM's to face each other and arranged along the length of the bulb in case of narrow sidewalks.



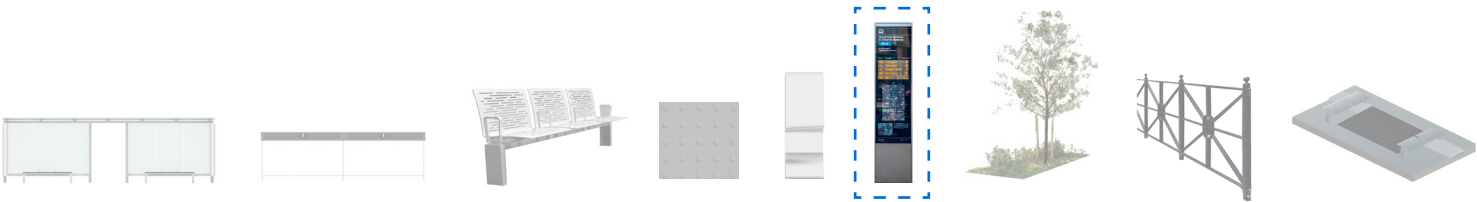


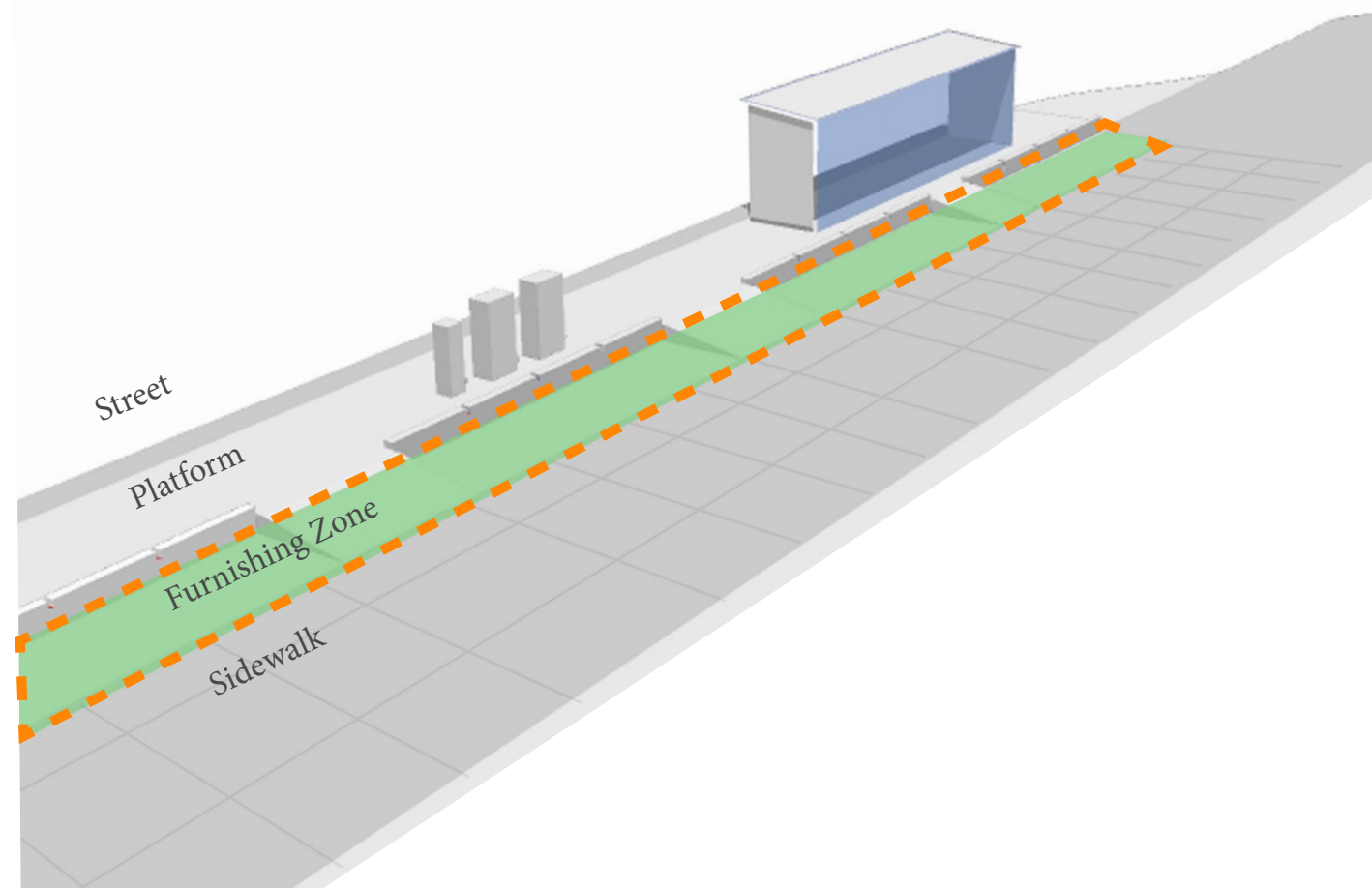
Detail drawings of the Wayfinding sign



All elements should be aligned to the back of the bus shelter where feasible; consider foundation when siting the sign.

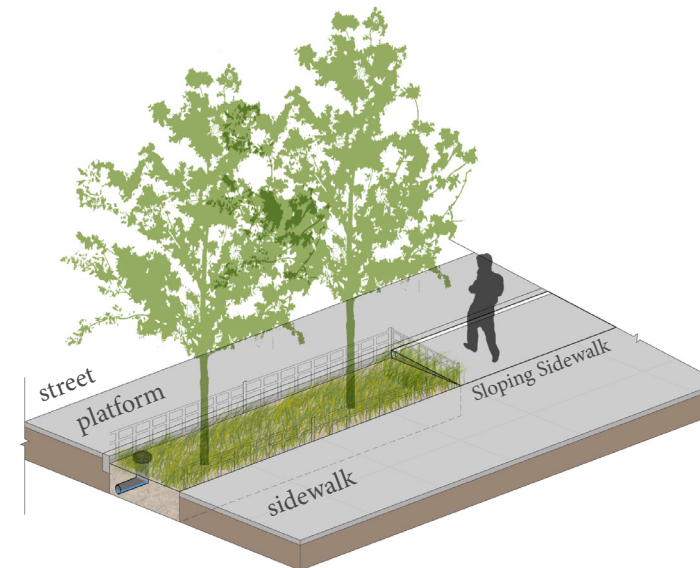
Other street furniture to be placed at a distance of 8' preferred, 5' minimum from the edge of the sign.



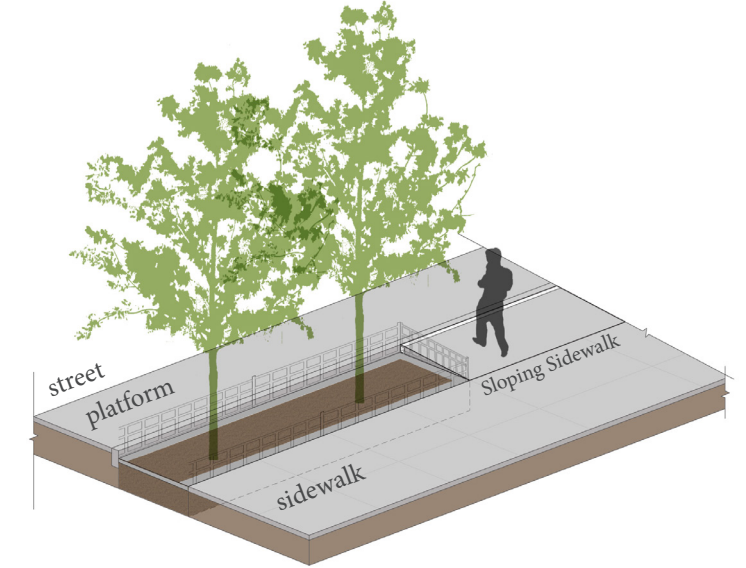


Axonometric View

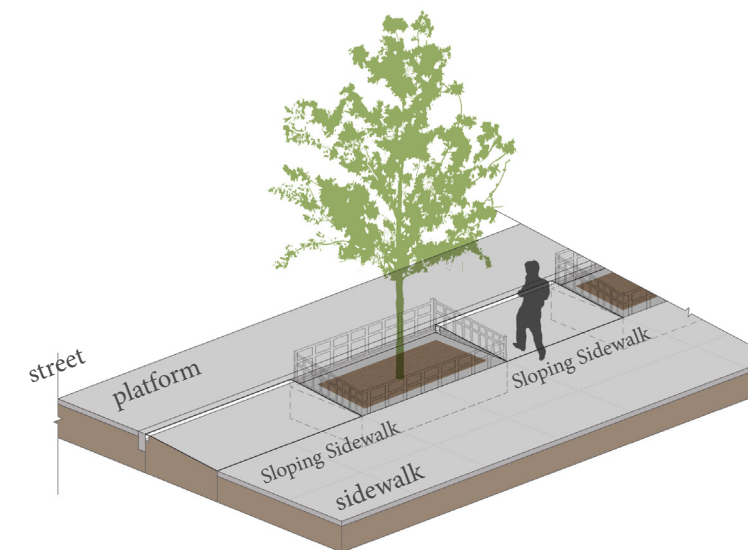
Note: The green infrastructure typologies within the furnishing zone can be applied to any of the Bus bulb typologies



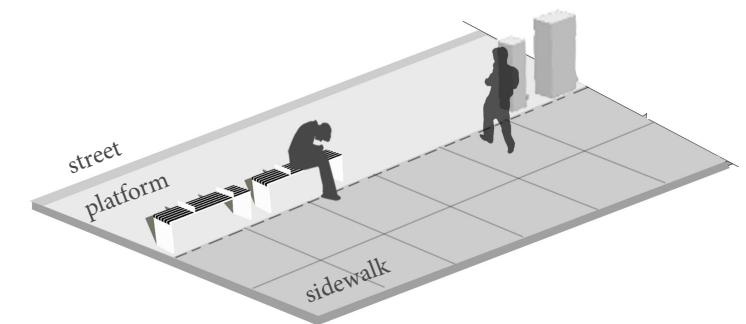
Type 1: Stormwater Infiltration Swale



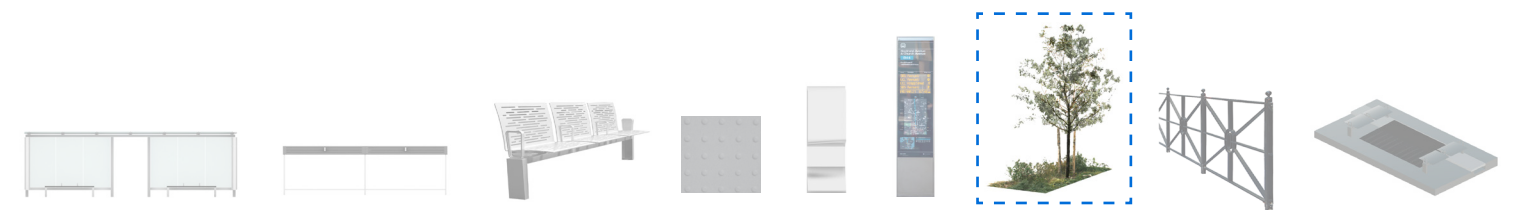
Type 2A: Connected Tree Pits

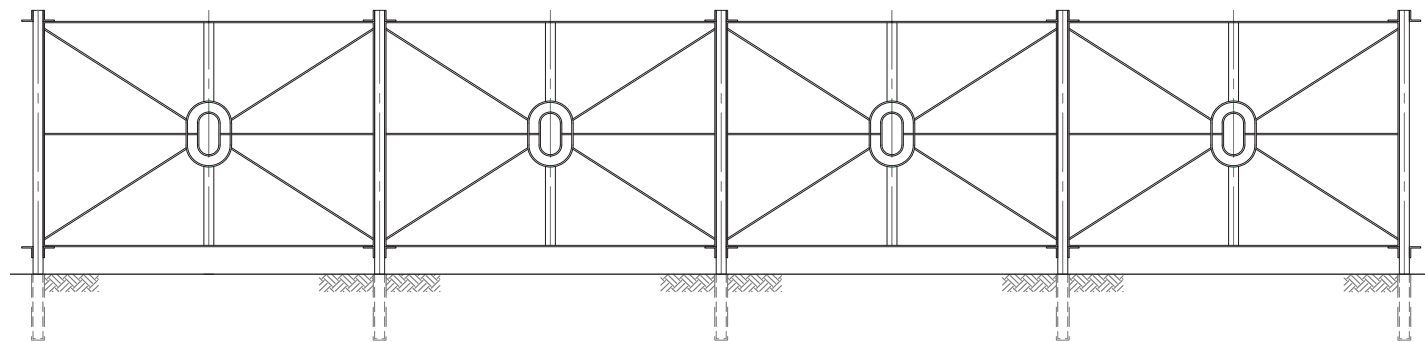
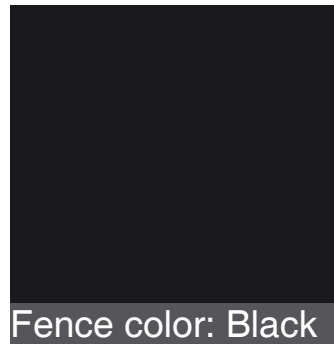


Type 2B: Individual Tree Pit



Type 3: Elements on the bulb define back of the bus shelter

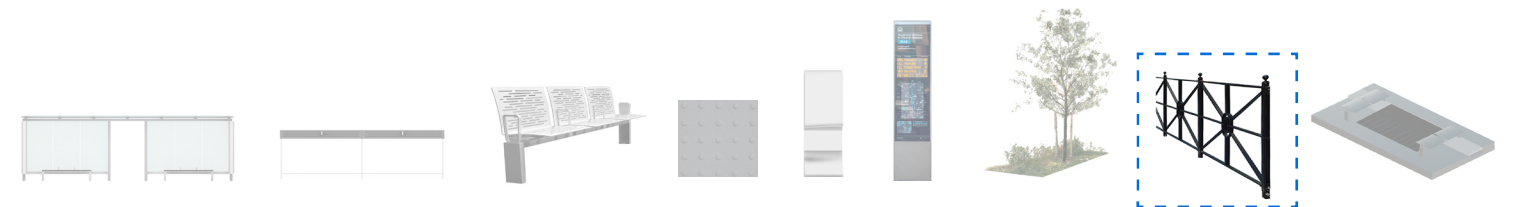




Detail Elevation of the Median Fence



Install median fence to direct pedestrians exiting the bus to safe crossing points.



Prioritization of Elements

Required Elements

- TVM
- Some type of seating

Platform Zone

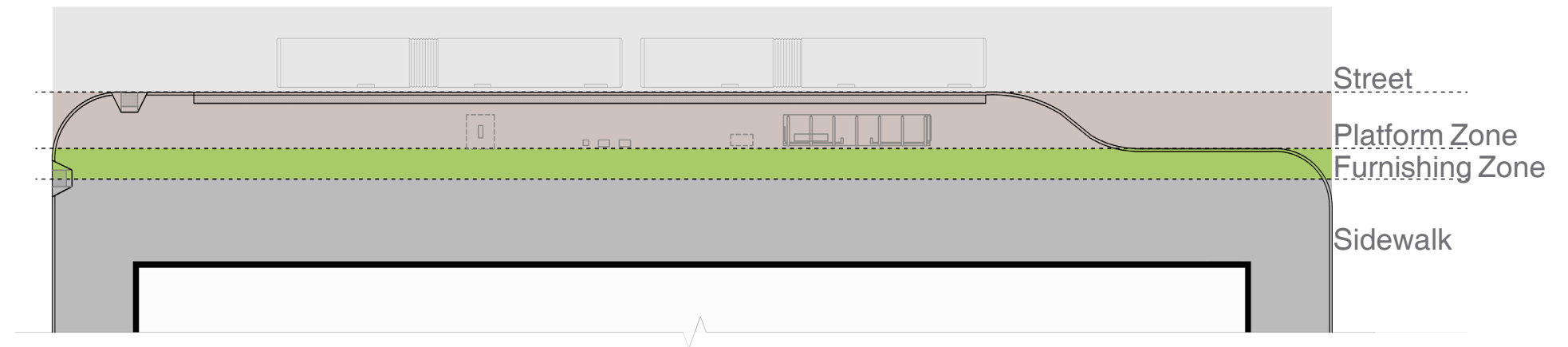
- Bus Shelter and/or CityBench
- Wayfinding Sign
- Leaning Bar
- Additional amenities based on ridership statistics

Furnishing Zone

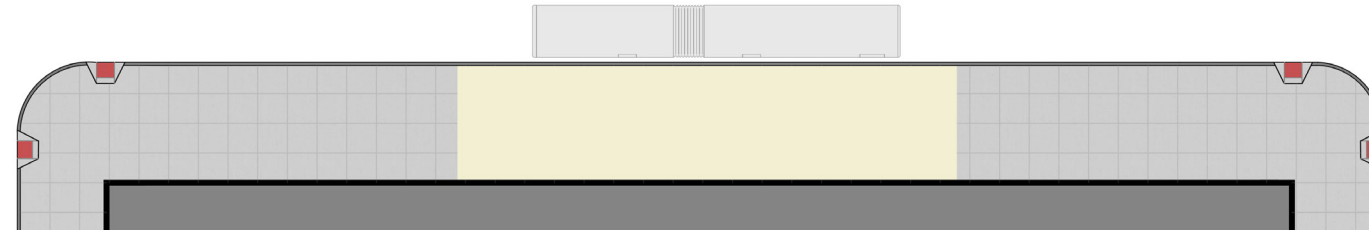
- Trees - Preserve existing or create new tree pits
- Green Infrastructure Typologies
- Street Furniture should be used in areas with below ground constraints that prevent the use of trees or green infrastructure

Sidewalk

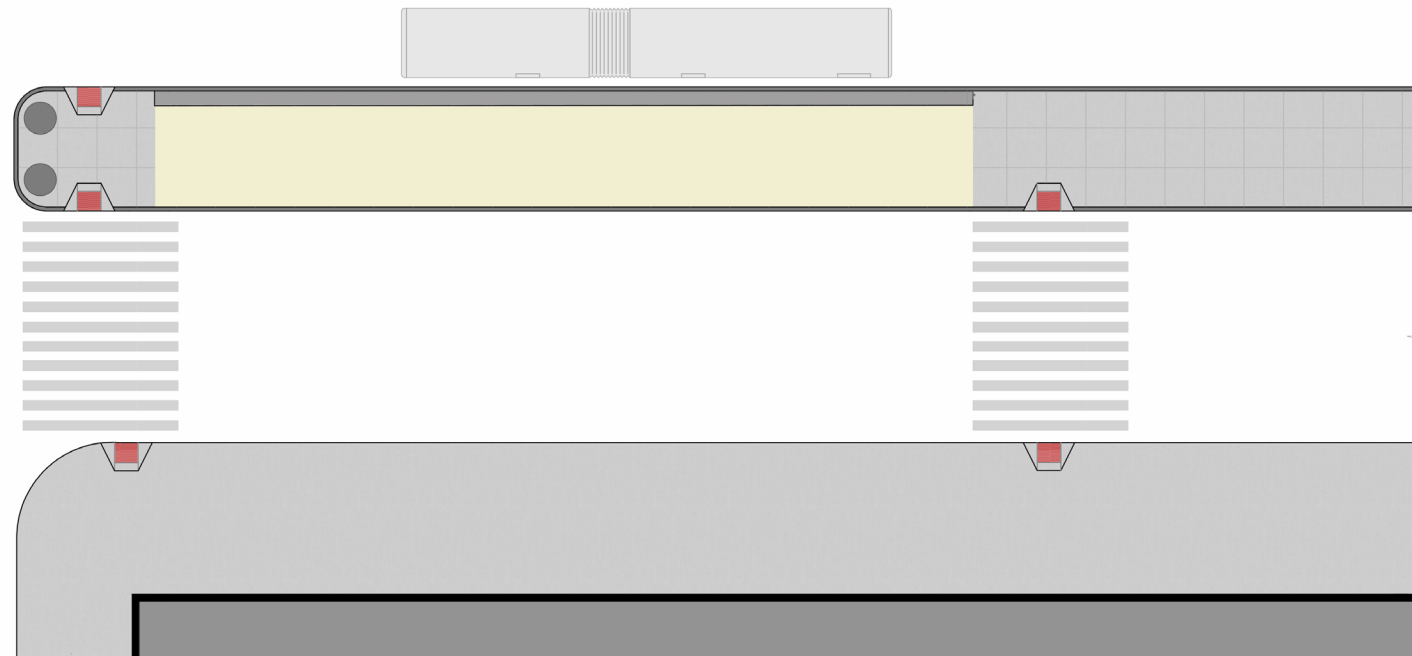
- The elements should minimize/eliminate trip hazards
- Smooth transition preferred between the platform and sidewalk zones



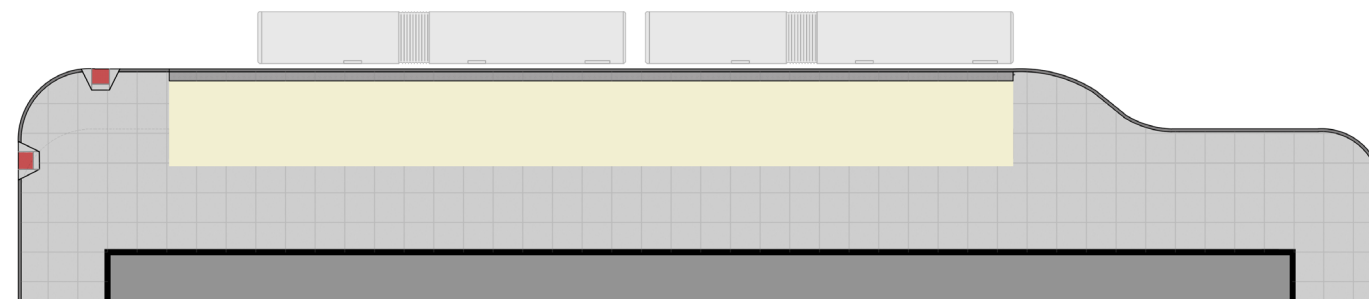
Curbside Station

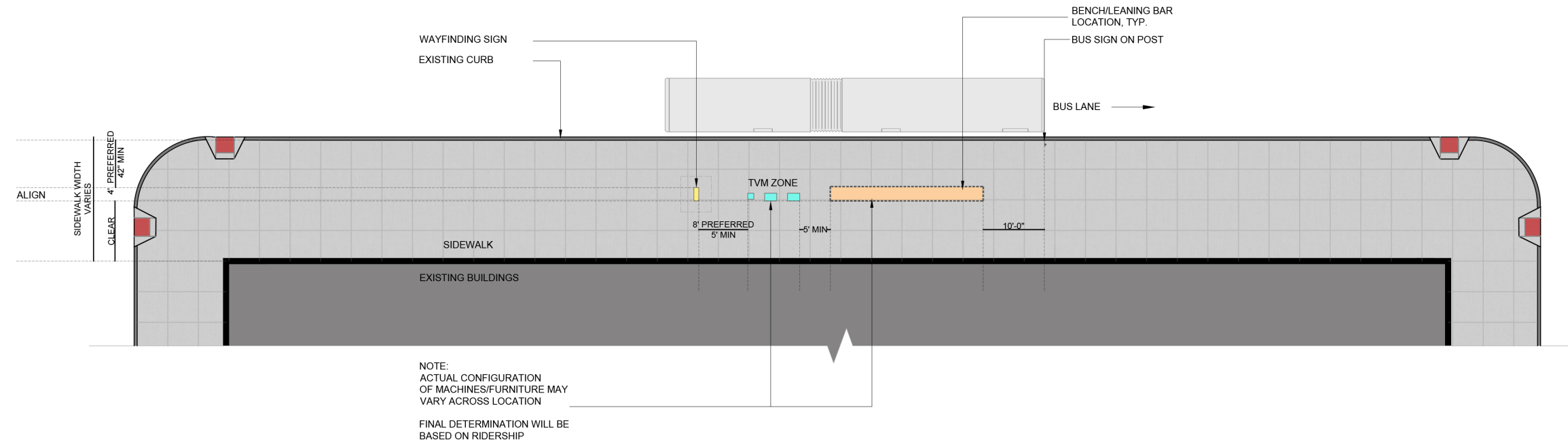


Median Station



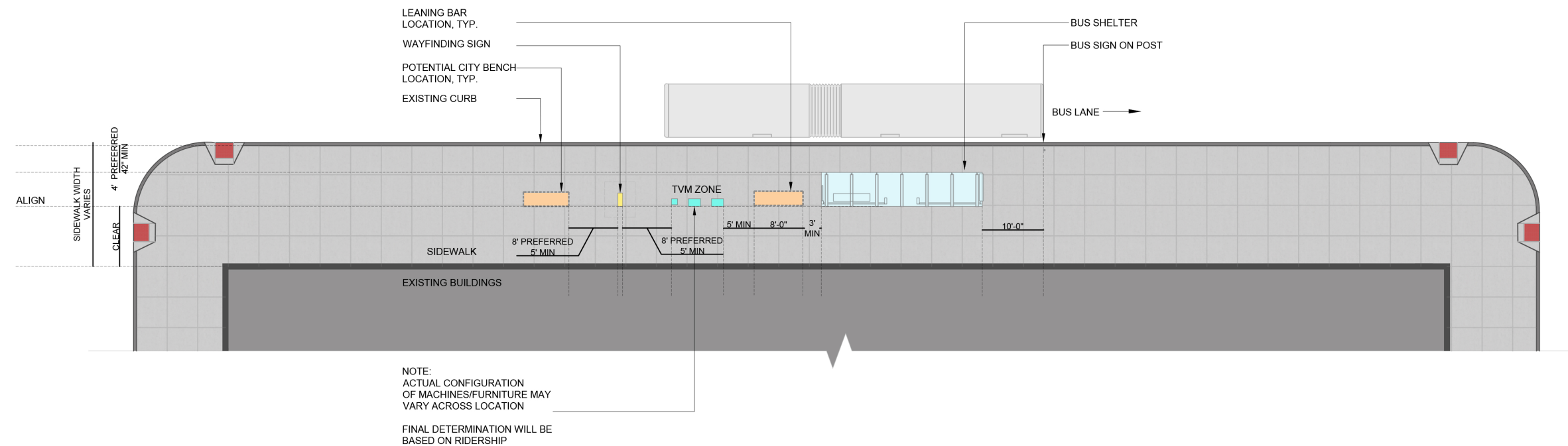
Bus Bulb Station





Plan: Curbside Station Design - No Shelter

Scale: 0 5 10 20

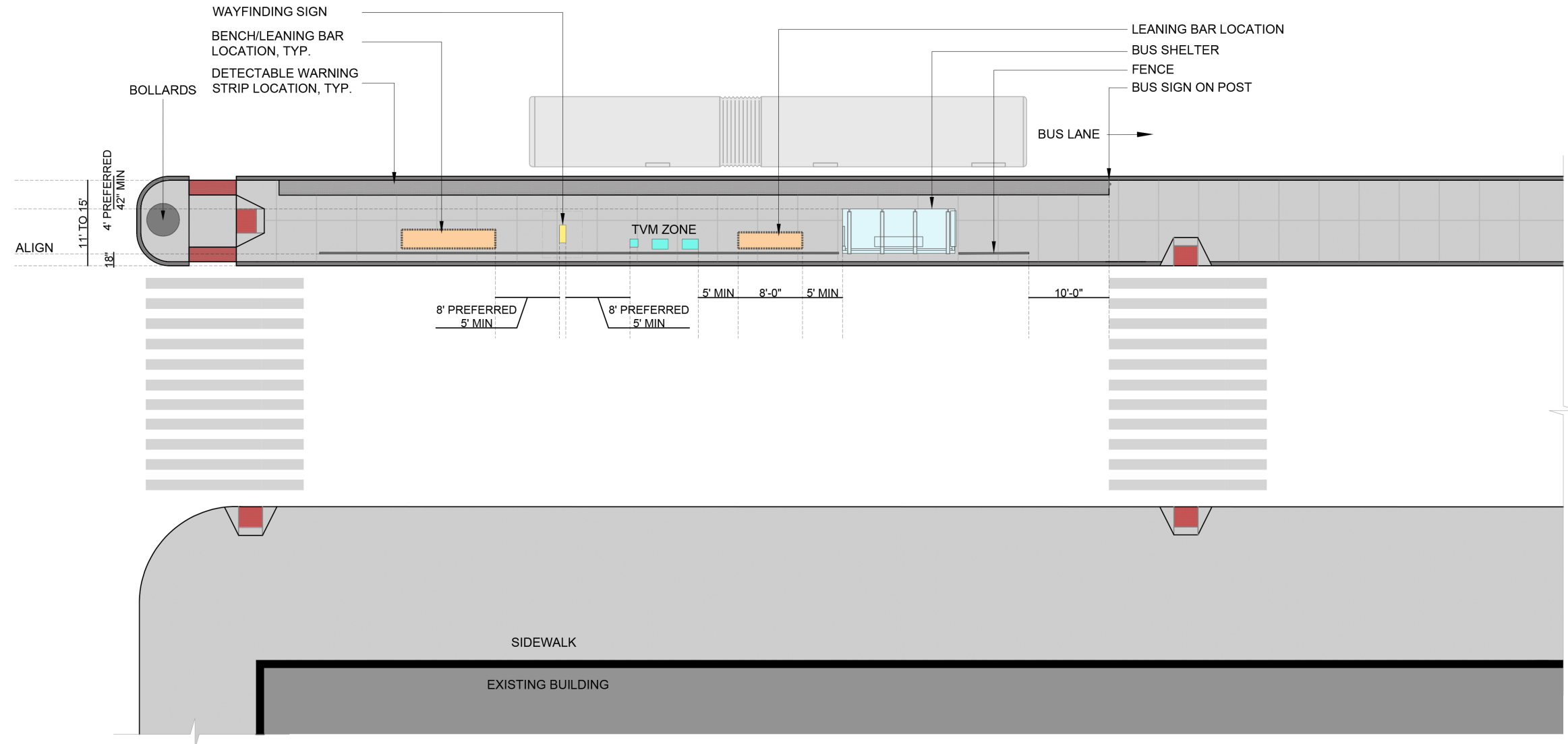


Plan: Curbside Station Design - One Shelter

Scale: 0 5 10 20



Curbside station at W 86th St and Columbus Ave

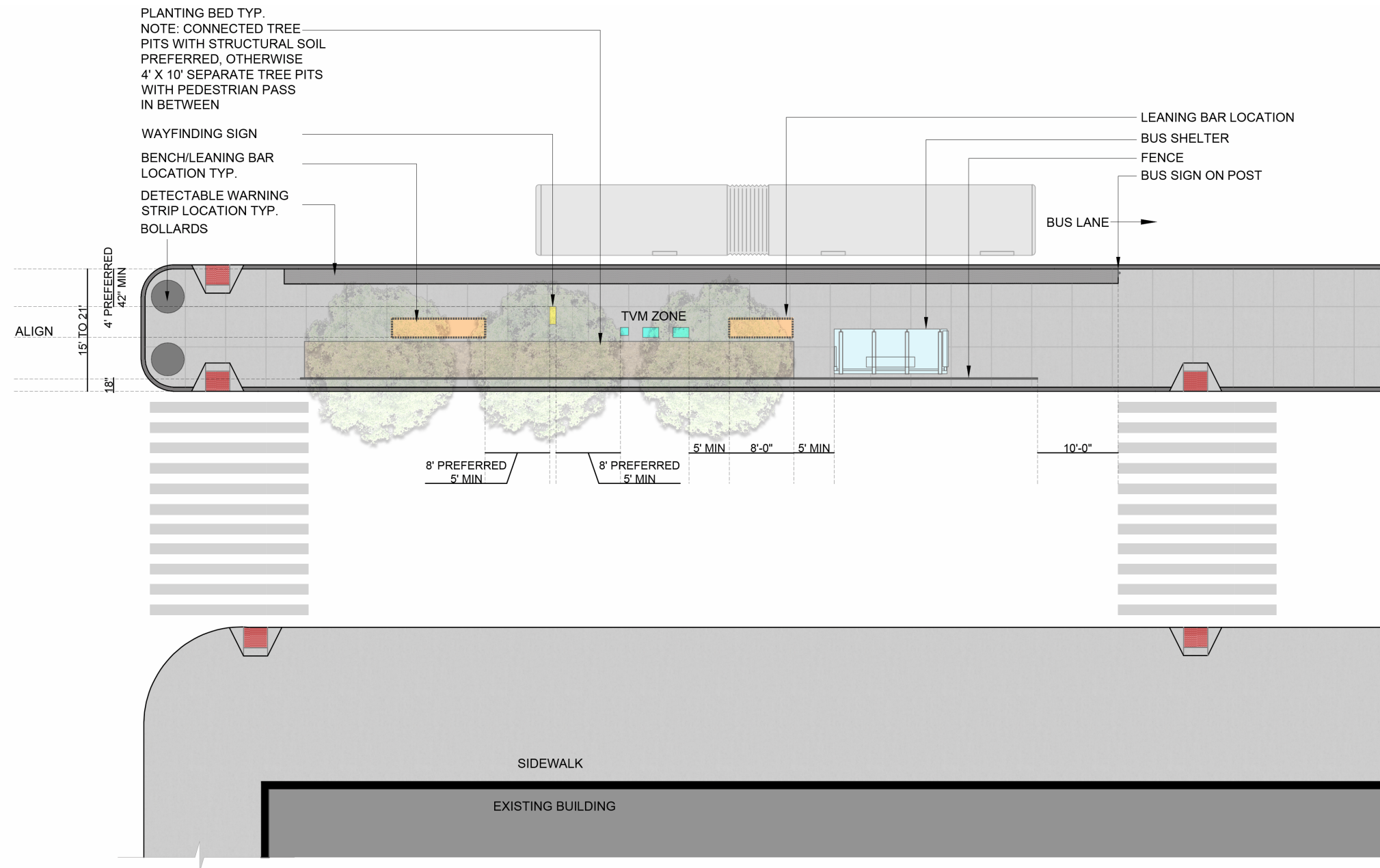


GENERAL NOTES:

- THE MEDIAN WIDTH CAN GO UPTO 10' WITH A NARROW BUS SHELTER, IN SPECIFIC CASES ONLY
- ACTUAL CONFIGURATION OF MACHINES/FURNITURE MAY VARY ACROSS LOCATION
- FINAL DETERMINATION WILL BE BASED ON RIDERSHIP
- SECOND SHELTER TO BE PROVIDED IN CASE OF HIGHER RIDERSHIP LEVELS
- SMALLER DIMENSIONS CONSIDERED ON CASE BY CASE BASIS ONLY

Plan: Median Station Design - Narrow - 11' to 15'

Scale: 0 5 10 20



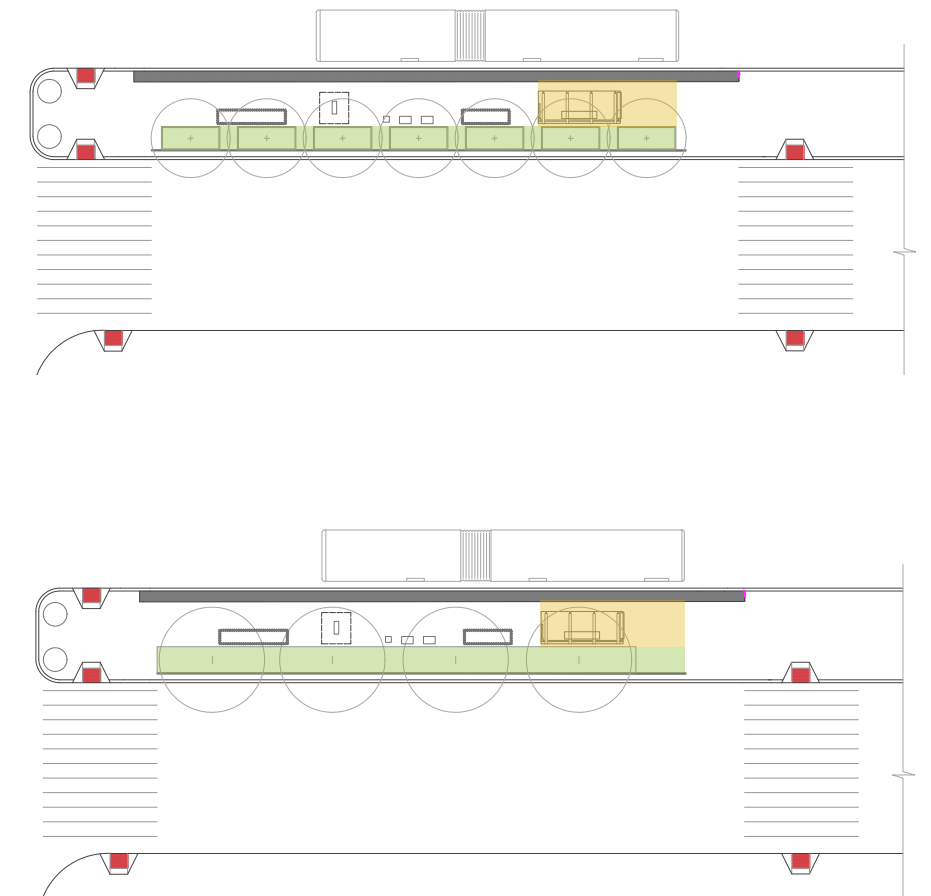
GENERAL NOTES:

ACTUAL CONFIGURATION OF MACHINES/FURNITURE MAY VARY ACROSS LOCATION

FINAL DETERMINATION WILL BE BASED ON RIDERSHIP

SECOND SHELTER TO BE PROVIDED IN CASE OF HIGHER RIDERSHIP LEVELS

SMALLER DIMENSIONS CONSIDERED ON CASE BY CASE BASIS ONLY

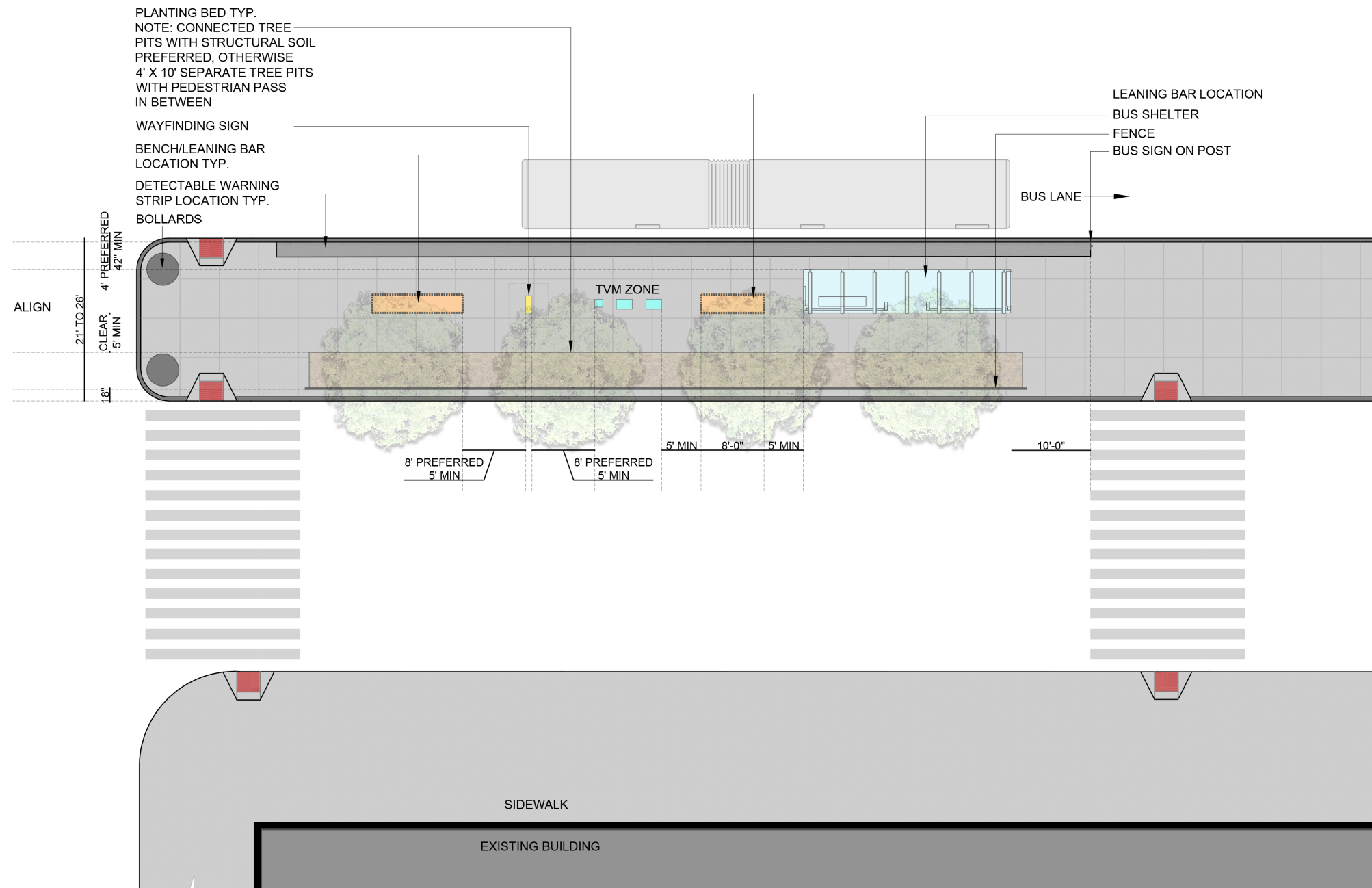


Flexible Siting Options

- Bus Shelter
- Tree Pits
Green Infrastructure

Plan: Median Station Design - Medium - 15' to 21'

Scale:



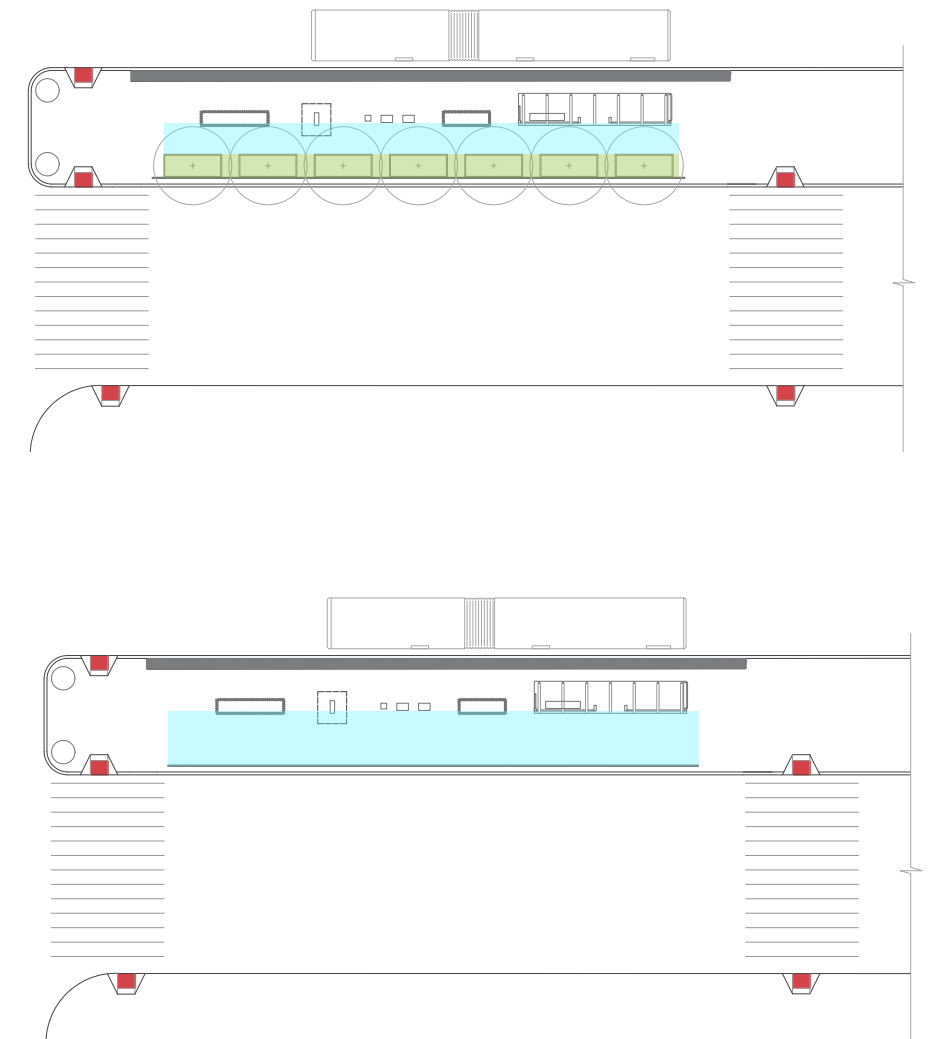
GENERAL NOTES:

ACTUAL CONFIGURATION OF MACHINES/FURNITURE MAY VARY ACROSS LOCATION

FINAL DETERMINATION WILL BE BASED ON RIDERSHIP

SECOND SHELTER TO BE PROVIDED IN CASE OF HIGHER RIDERSHIP LEVELS

SMALLER DIMENSIONS CONSIDERED ON CASE BY CASE BASIS ONLY



Flexible Siting Options

Clear Walkway

Tree Pits
Green Infrastructure

Plan: Median Station Design - Wide - 21' to 26'

Scale: 0 5 10 20



The Median station at Woodhaven Blvd



GENERAL NOTES:

ACTUAL CONFIGURATION OF MACHINES/FURNITURE MAY VARY ACROSS LOCATION

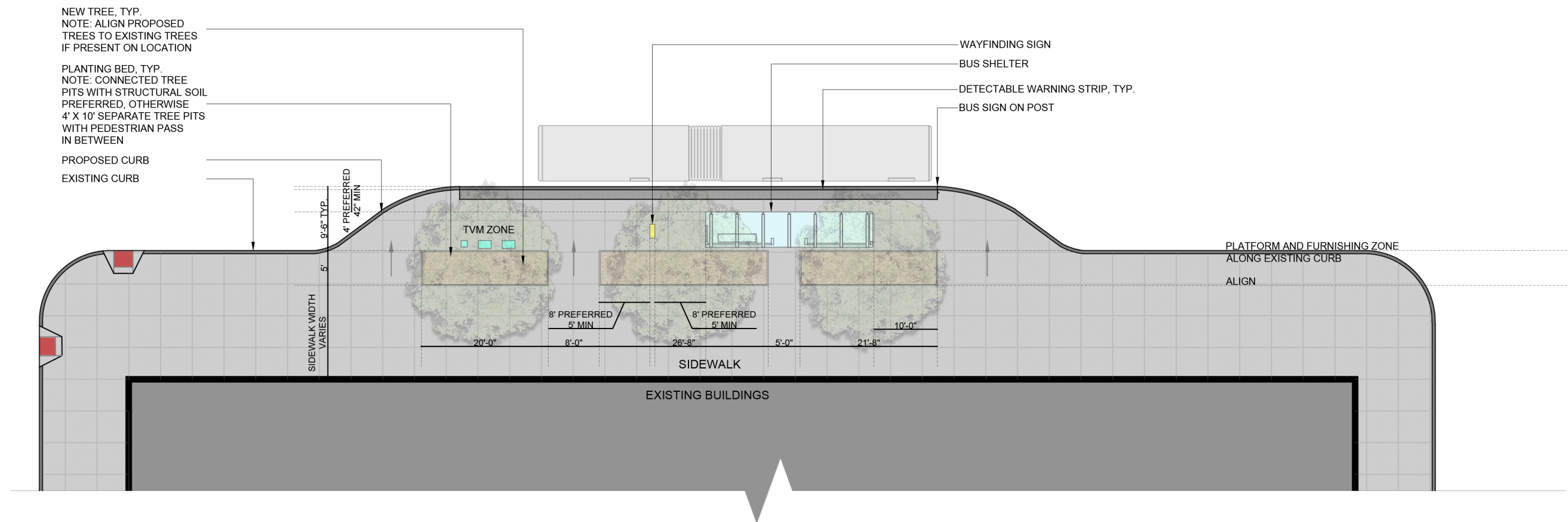
FINAL DETERMINATION WILL BE BASED ON RIDERSHIP

SECOND SHELTER TO BE PROVIDED IN CASE OF HIGHER RIDERSHIP LEVELS

AVOID TRIP HAZARD AT THE END OF BUS BULBS

Plan: Bus Bulb Station Design - Single Slope

Scale: 0 5 10 20



GENERAL NOTES:

ACTUAL CONFIGURATION OF MACHINES/FURNITURE MAY VARY ACROSS LOCATION

FINAL DETERMINATION WILL BE BASED ON RIDERSHIP

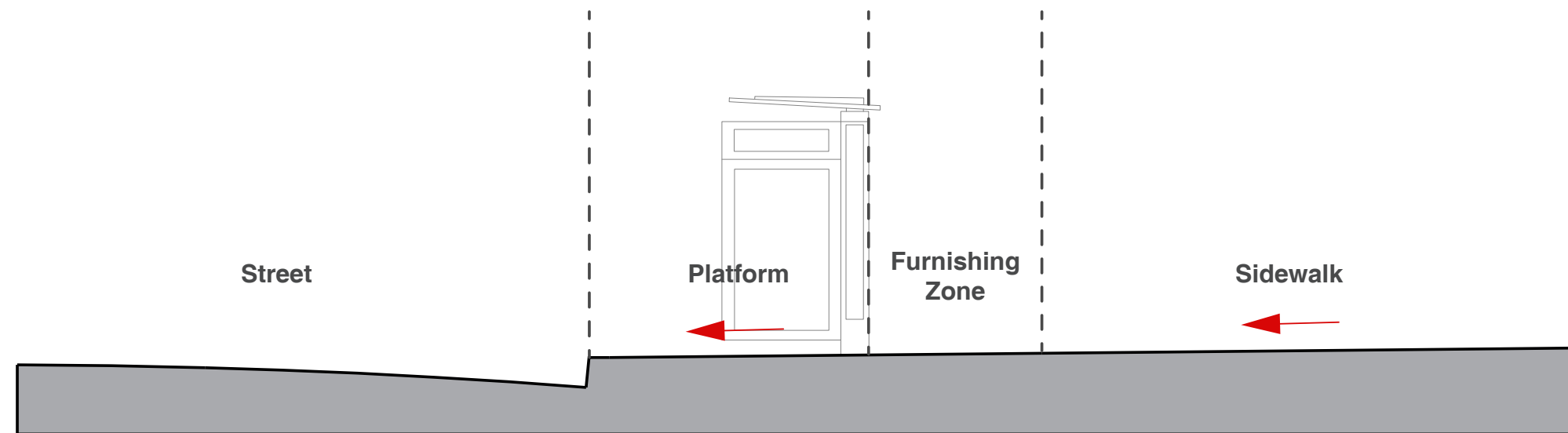
AVOID TRIP HAZARD AT THE END OF BUS BULBS

Plan: Mid-Block Station Design - Single Slope

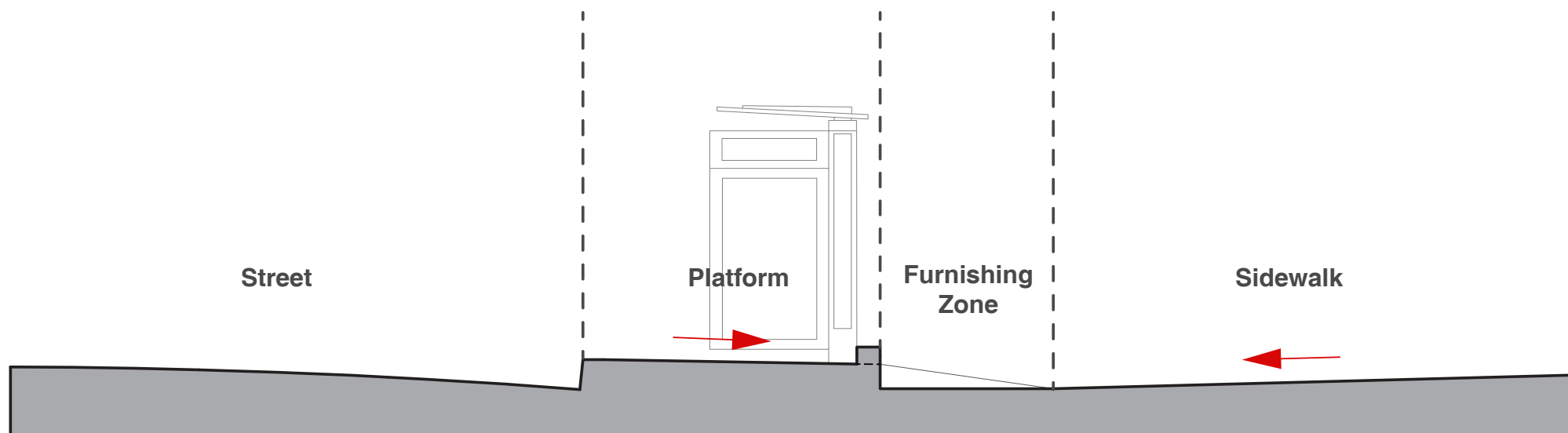
Scale: 0 5 10 20



The Bus Bulb station at Nostrand Avenue and Clark Street

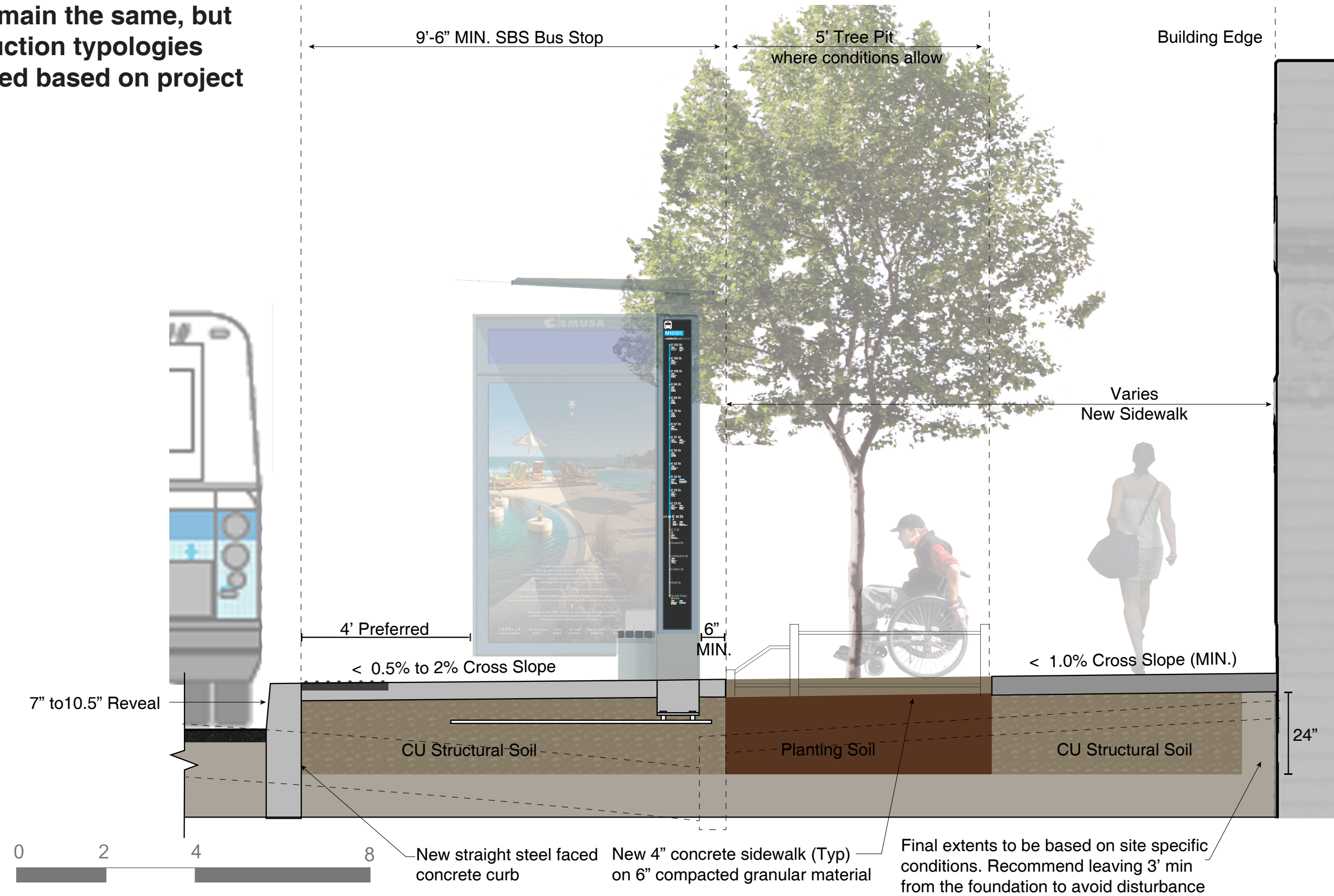


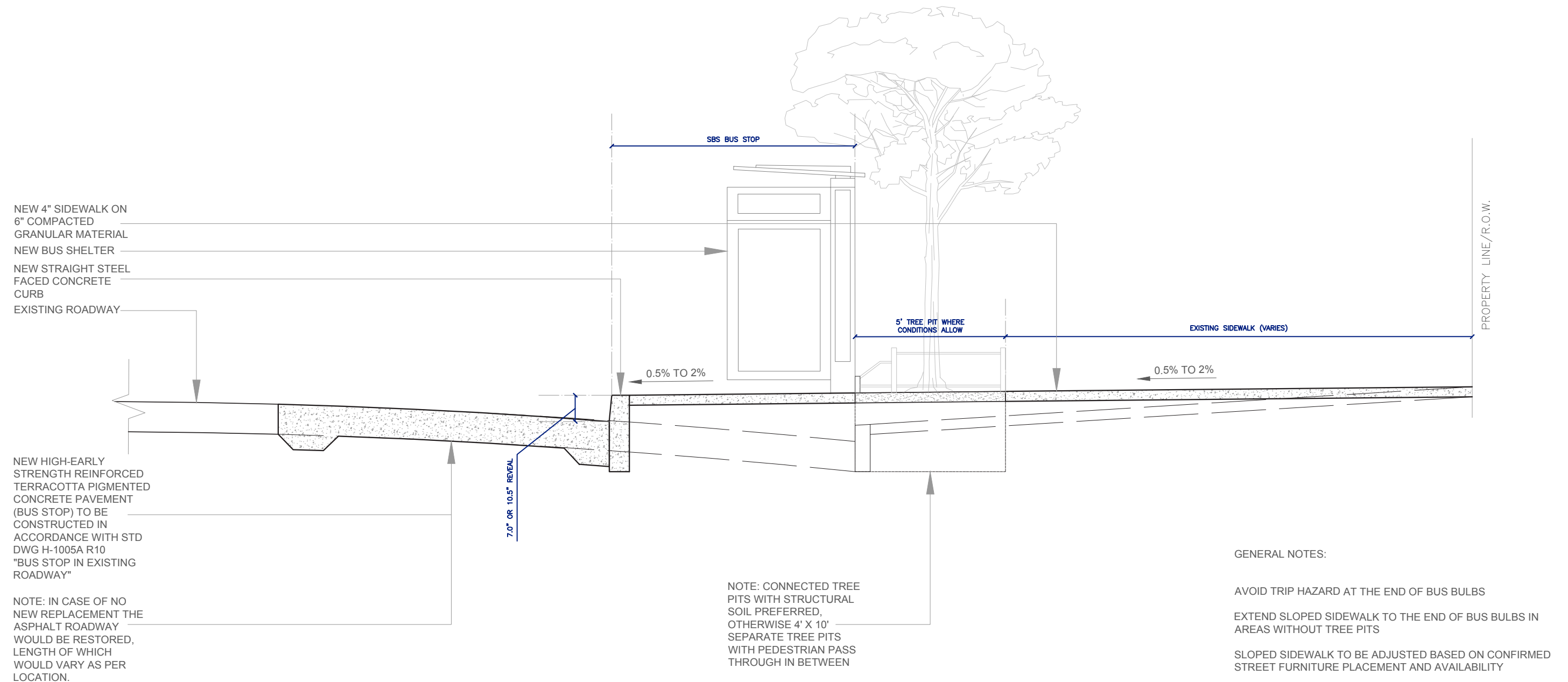
Single Slope



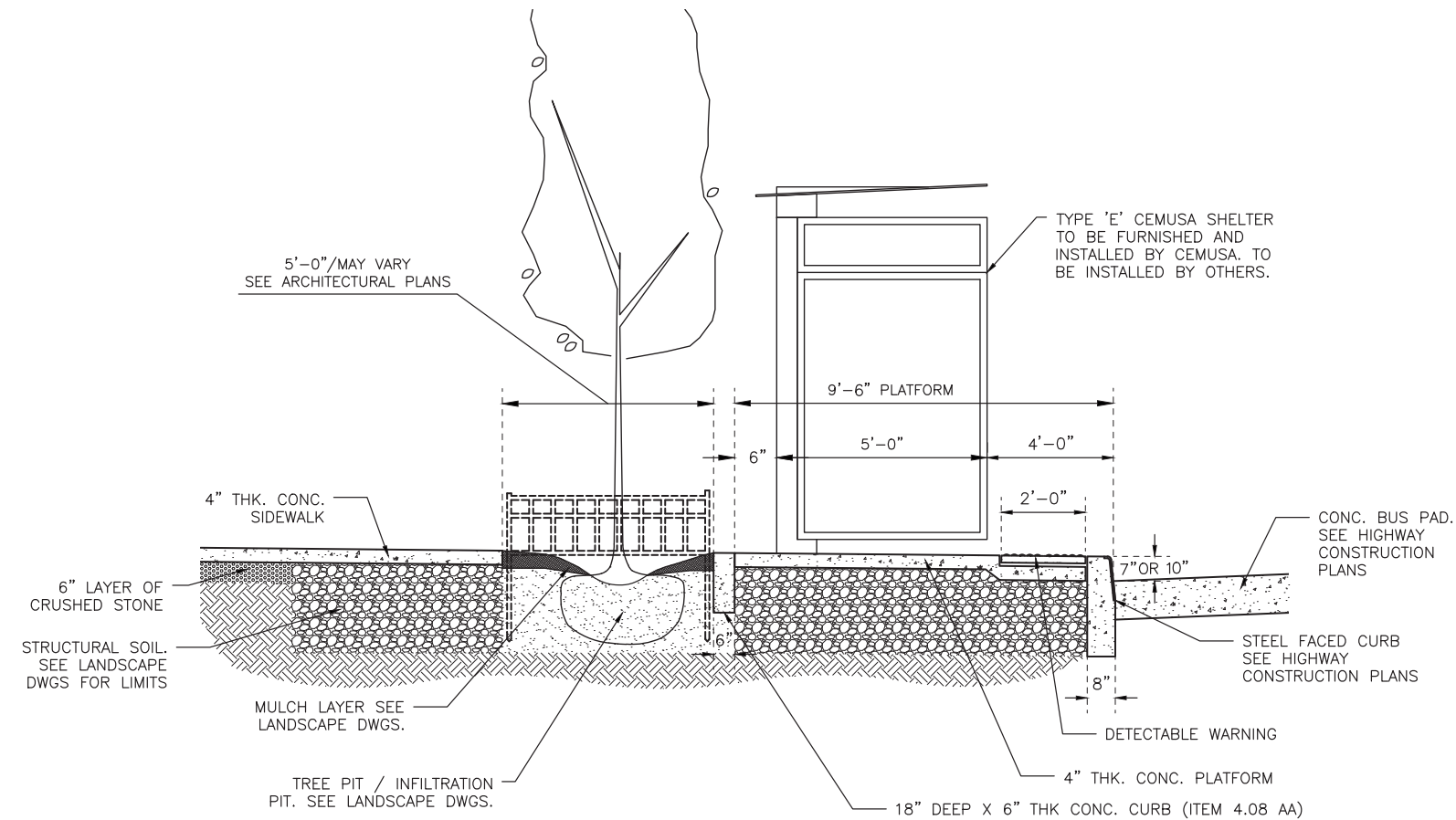
Reverse Slope

Station Zones remain the same, but bus bulb construction typologies have been updated based on project experience.

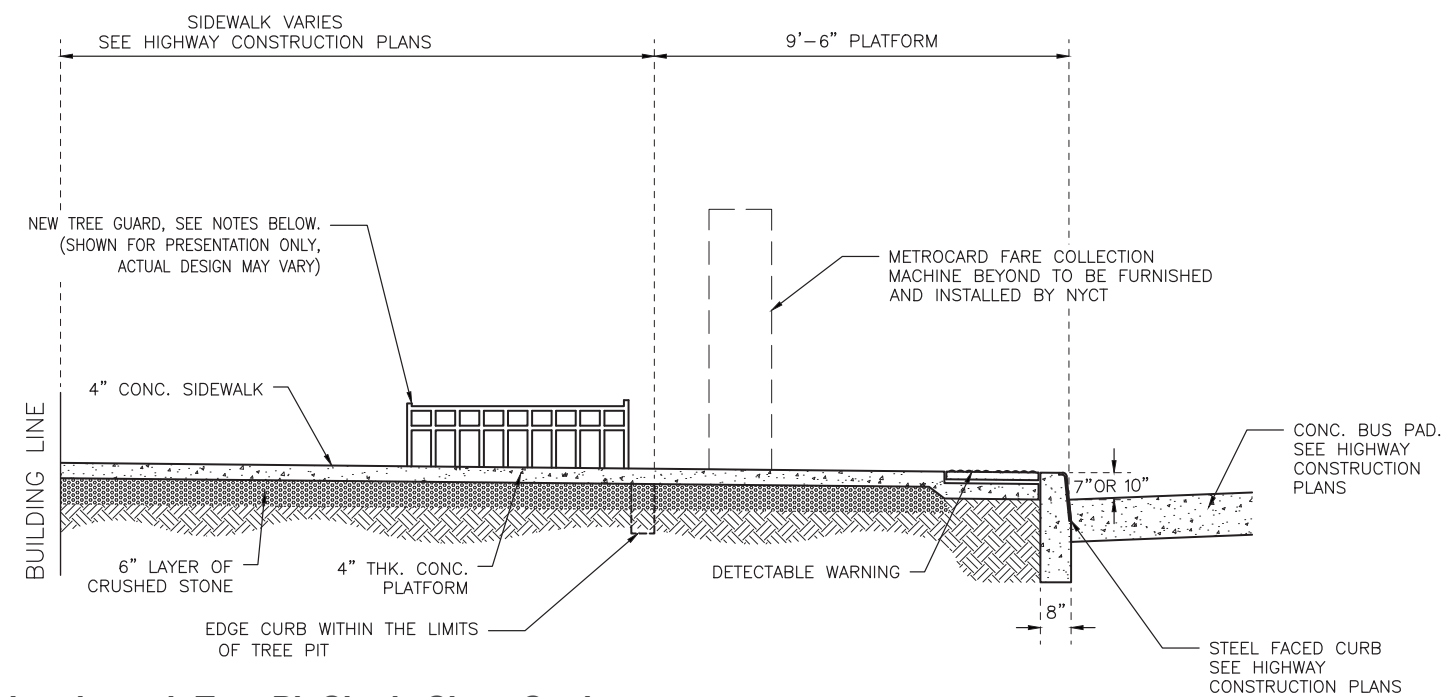




The single-slope typology is the preferred design for bus bulb locations. This typology maintains positive drainage away from the building to the curb. Green infrastructure and/or tree plantings should still be incorporated where feasible.

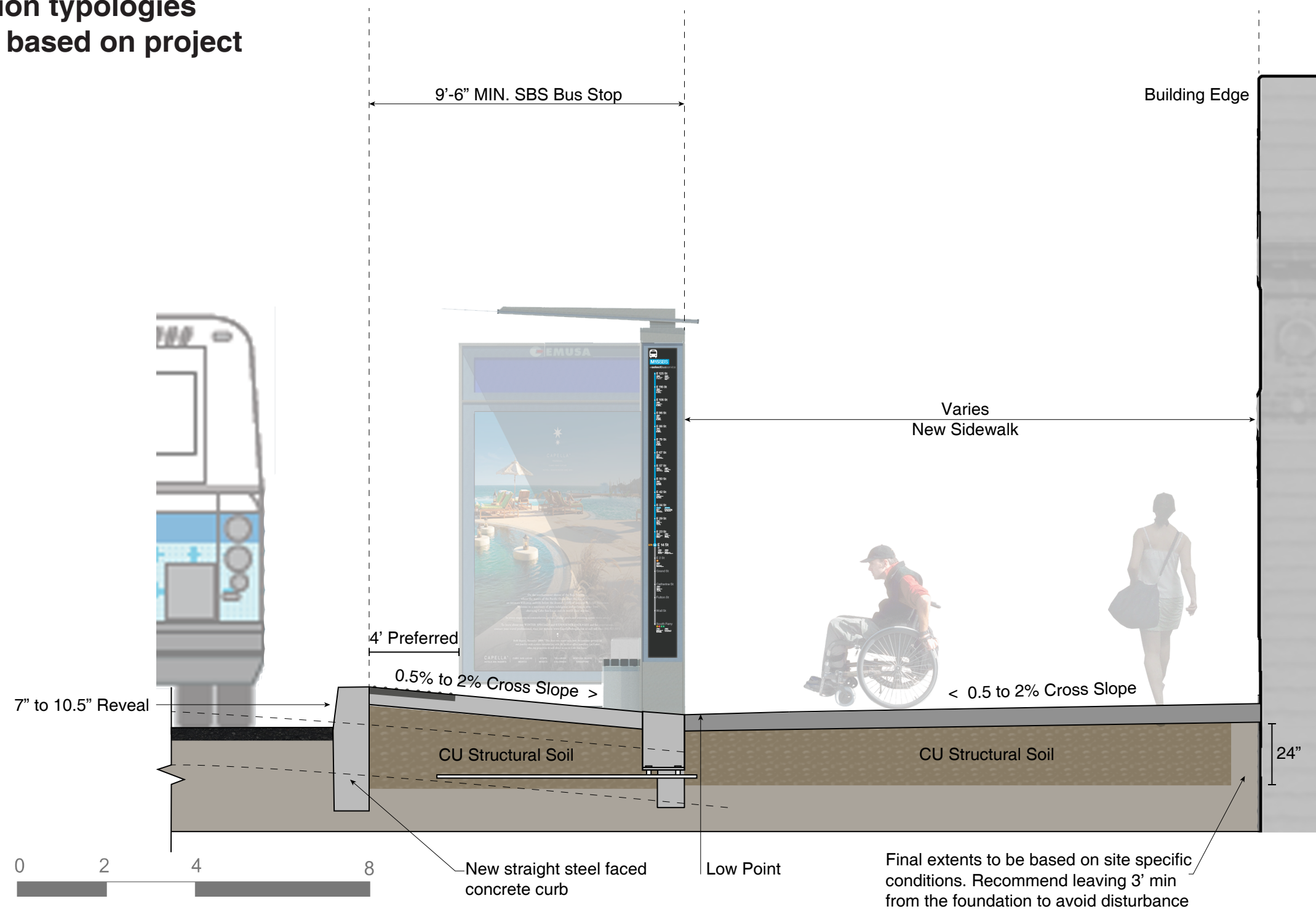


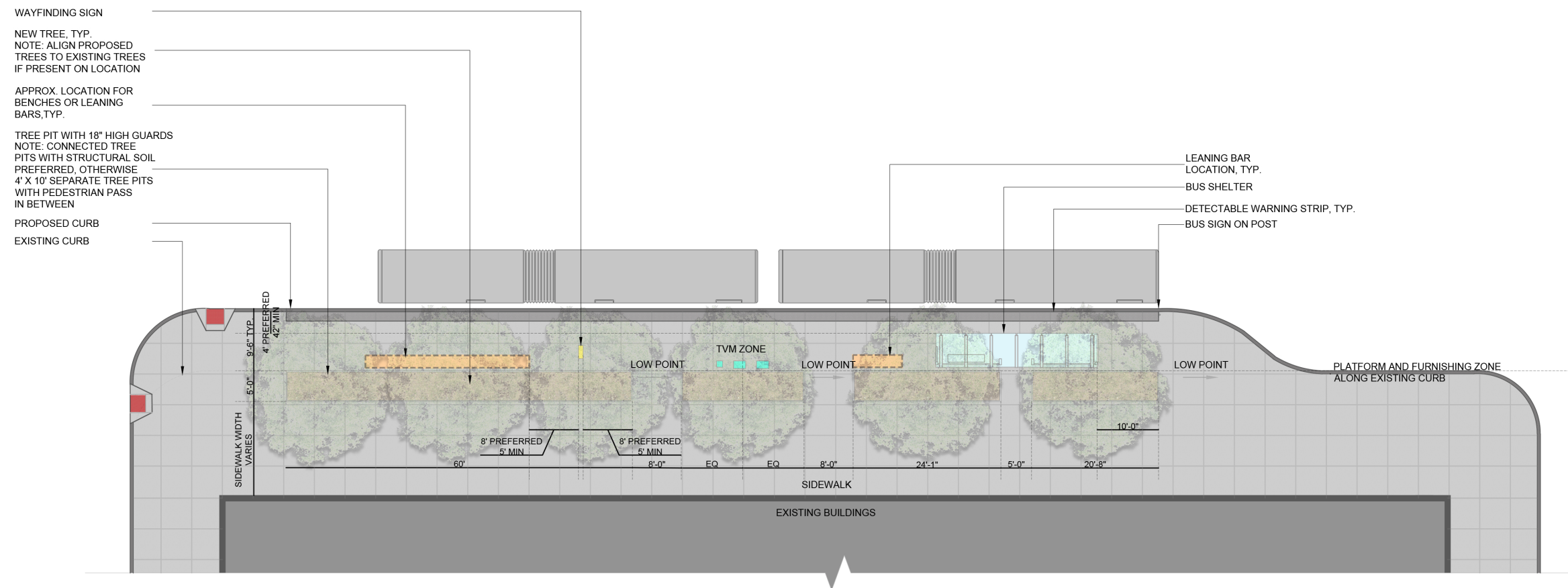
Typ. Section through Access Point Single Slope Station



Typ. Section through Tree Pit Single Slope Station

Station Zones remain the same, but bus bulb construction typologies have been updated based on project experience.





Plan: Double Bus - Single Shelter - Grading with Green Infrastructure

Scale: 0 5 10 20

GENERAL NOTES:

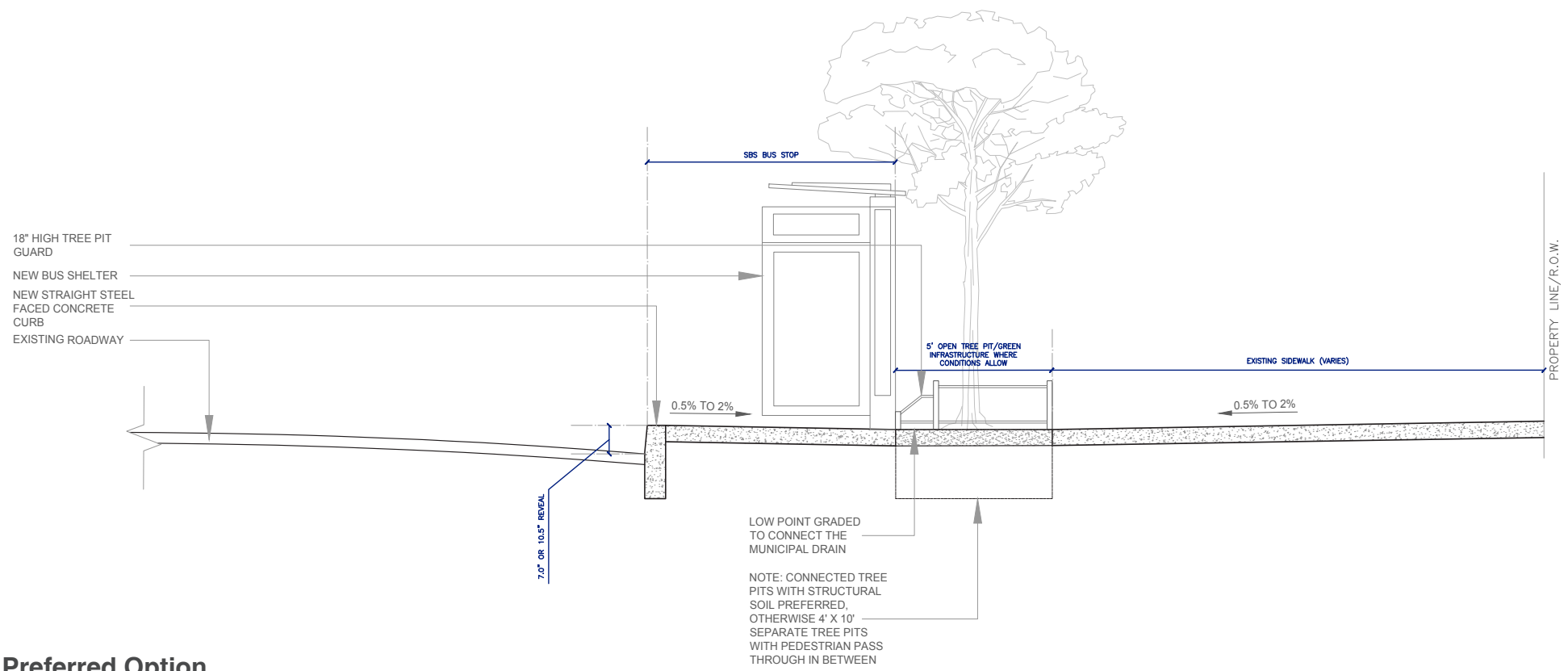
AVOID TRIP HAZARD AT THE END OF BUS BULBS

EXTEND SIDEWALK RAMPS TO THE END OF BUS BULBS IN AREAS WITHOUT TREE PITS

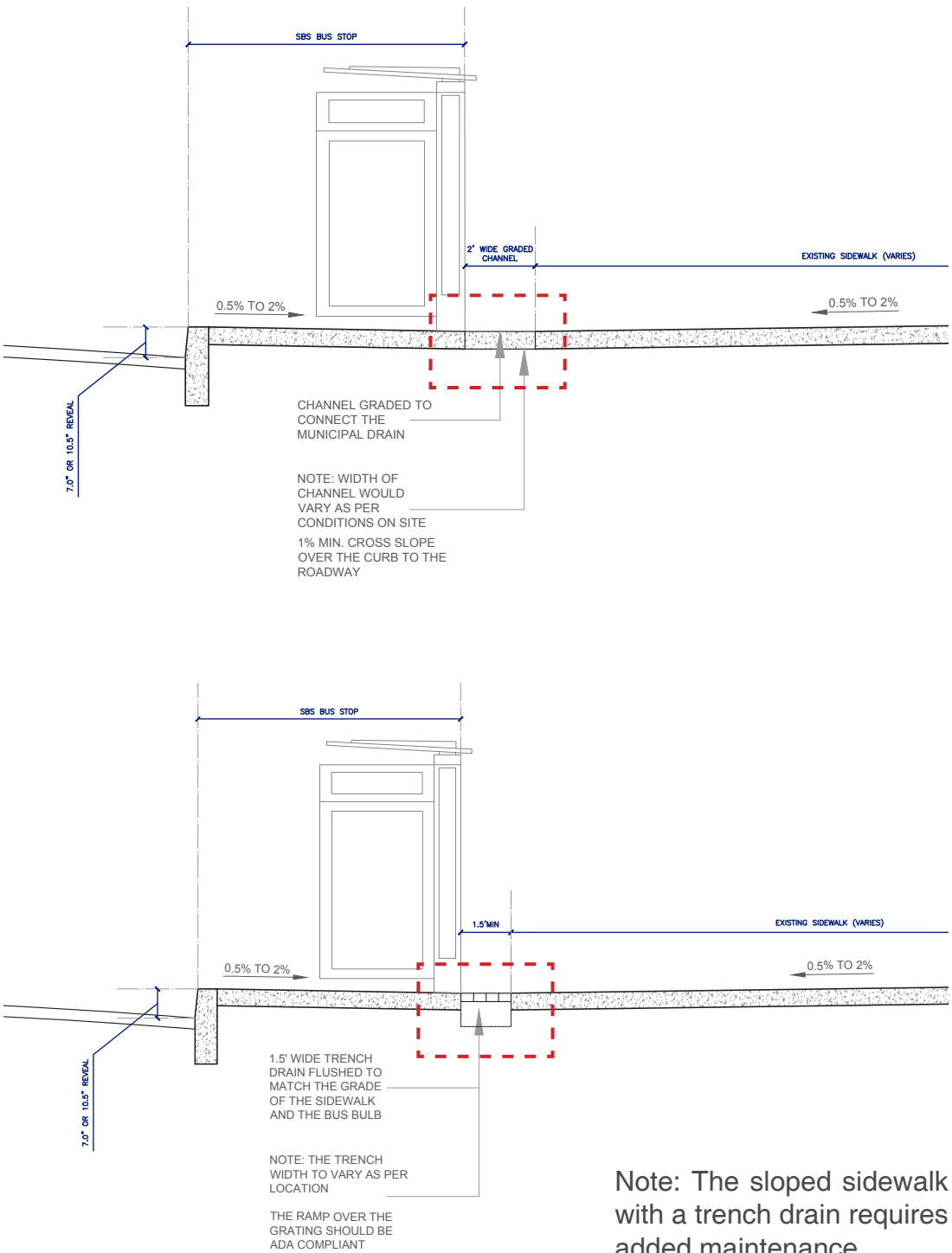
SIDEWALK RAMPS TO BE ADJUSTED BASED ON CONFIRMED STREET FURNITURE PLACEMENT AND AVAILABILITY

The reverse slope typology is utilized when the single-slope construction cannot be accommodated by site conditions. This typology requires Green Infrastructure or careful site design to ensure proper drainage and ADA-compliant access, while eliminating trip hazards.

No vertical grade change/flush transition between sidewalk and bus bulb



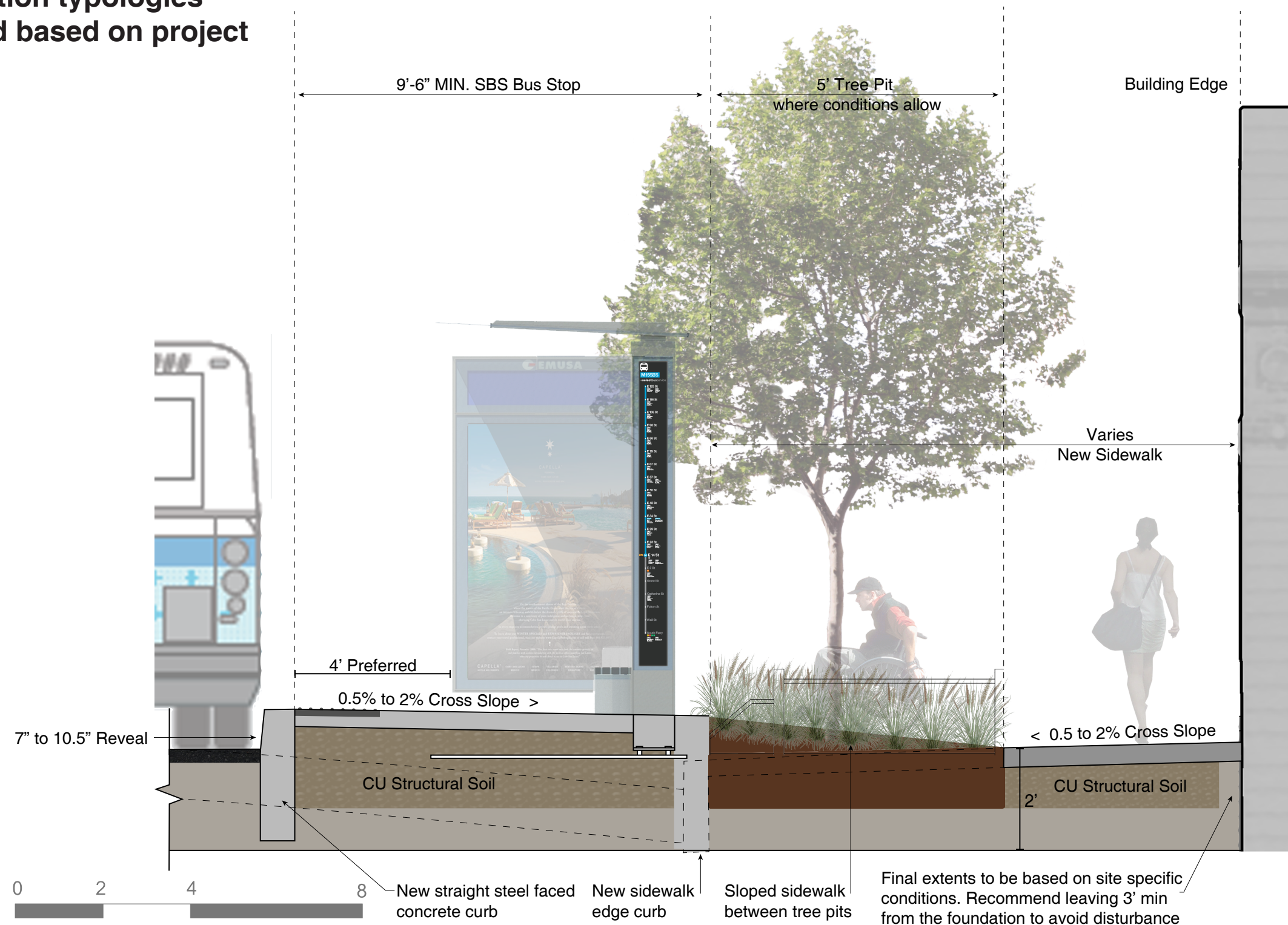
Preferred Option



Note: The sloped sidewalk with a trench drain requires added maintenance

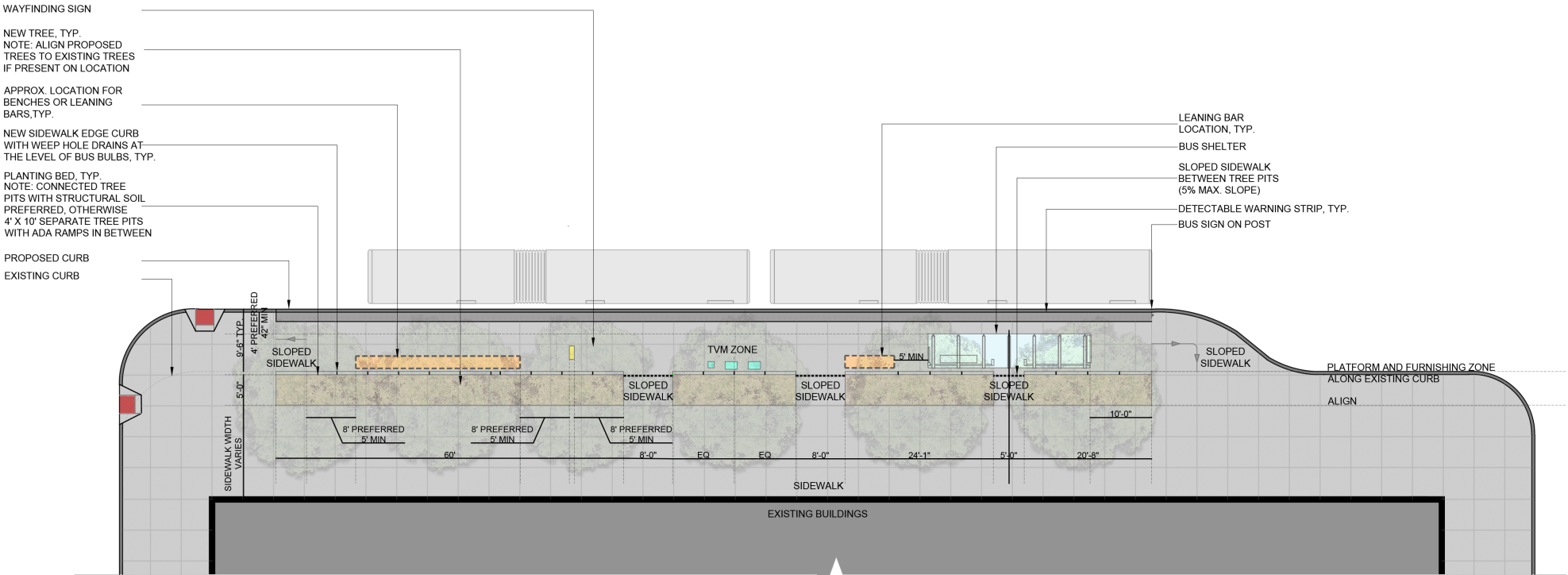
Appropriate grading and Green Infrastructure to be primarily considered when designing with reverse slope construction. Achieve flush transition from bus bulb to sidewalk with minimum trip hazards. Island typology to be used only in extreme cases and requires additional maintenance considerations.

Station Zones remain the same, but bus bulb construction typologies have been updated based on project experience.



Key Design Principles

- All layouts should eliminate tripping hazards.
- There should always be accessible entry points on both ends and in the center.
- Design of the Bus Bulbs should provide ADA-compliant access and eliminate trip hazards whether street furniture elements are available or not.



Double Bus - Single Shelter - Sloped Sidewalk Transition

Scale: 0 5 10 20

GENERAL NOTES:

ACTUAL CONFIGURATION OF MACHINES/FURNITURE MAY VARY ACROSS LOCATION

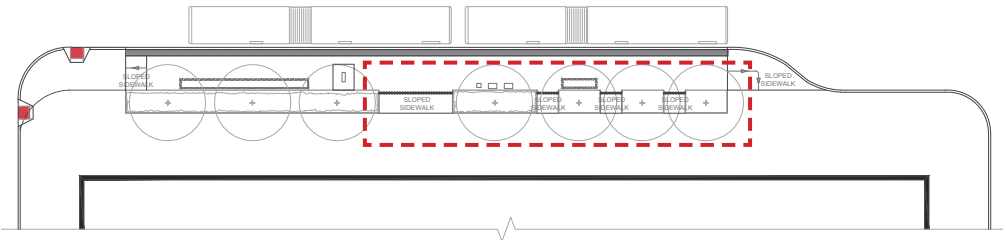
FINAL DETERMINATION WILL BE BASED ON RIDERSHIP

SECOND SHELTER TO BE PROVIDED IN CASE OF HIGHER RIDERSHIP LEVELS

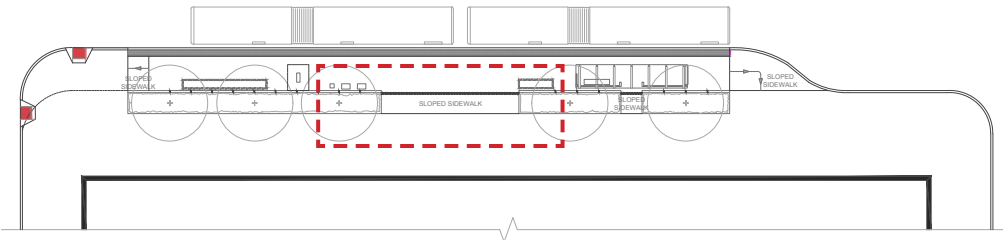
AVOID TRIP HAZARD AT THE END OF BUS BULBS

EXTEND SLOPED SIDEWALK TO THE END OF BUS BULBS IN AREAS WITHOUT TREE PITS

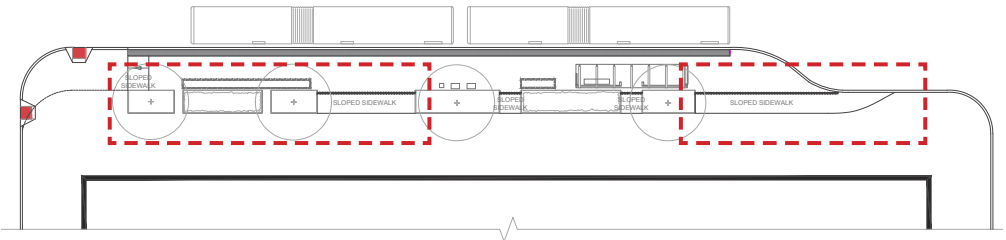
SLOPED SIDEWALK TO BE ADJUSTED BASED ON CONFIRMED STREET FURNITURE PLACEMENT AND AVAILABILITY



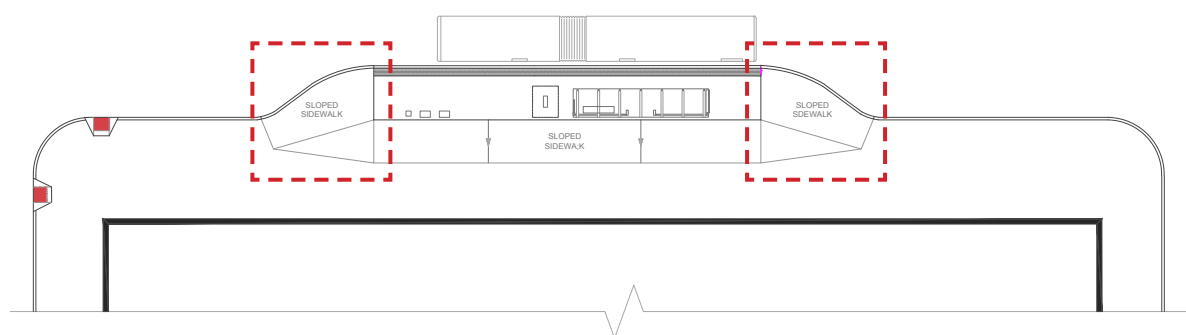
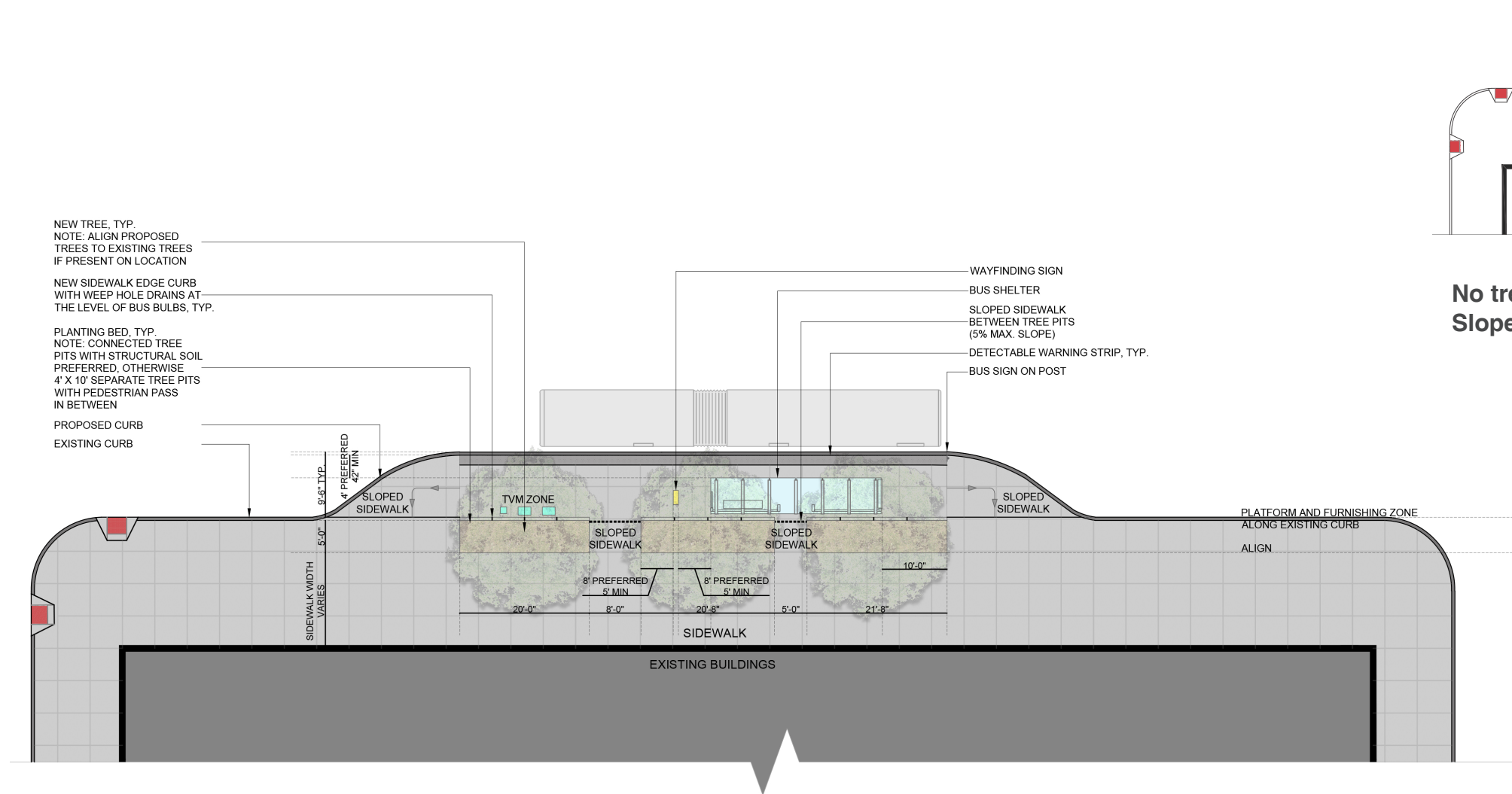
No Shelter
Individual tree pits (As per site conditions)
Sloped sidewalk extension



Sloped sidewalk extension (Absence of Tree Pits)



No Wayfinding Sign
Individual Tree Pits (As per site conditions)
Sloped sidewalk extension (End of Bus Bulbs)



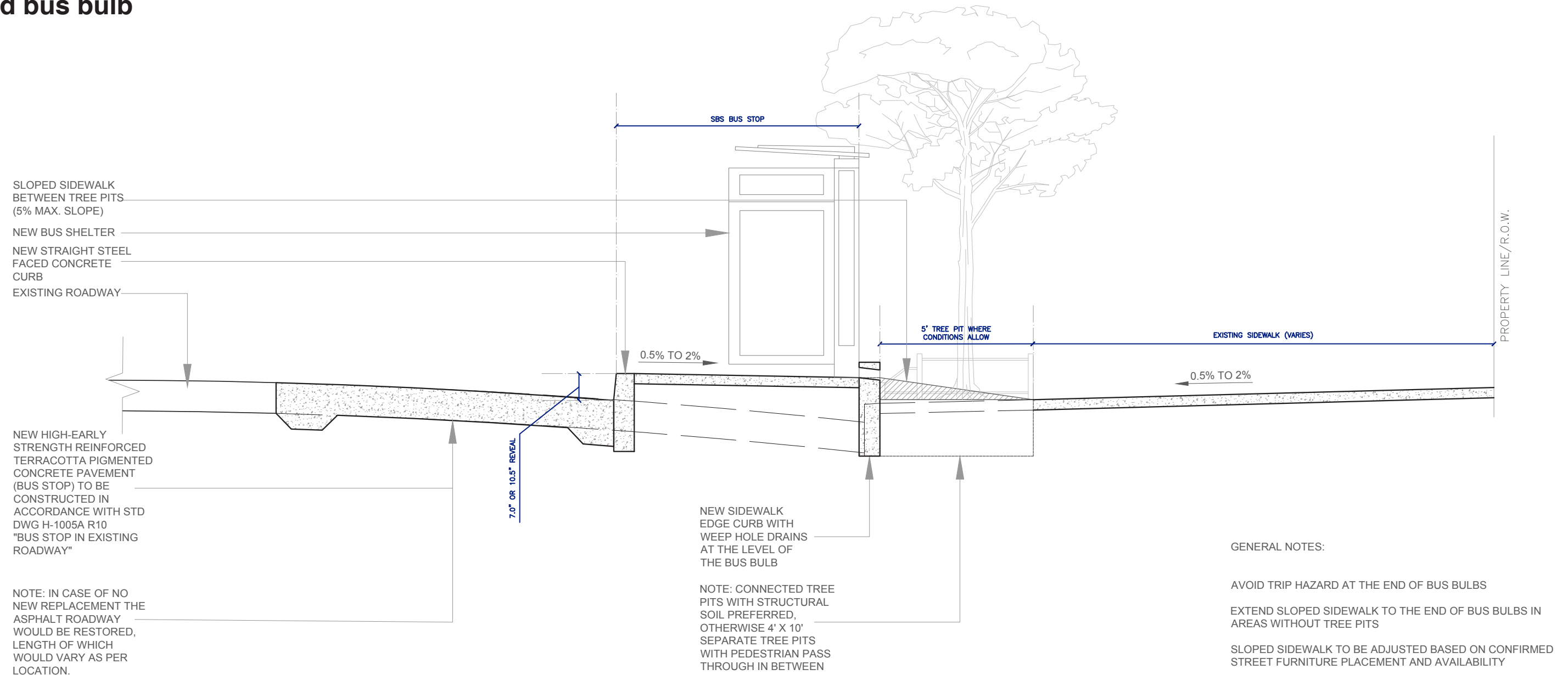
No tree Pits (As per site conditions)
Sloped sidewalk extension (On all sides)

Mid-block Single Bus - Single Shelter - Sloped Sidewalk Transition

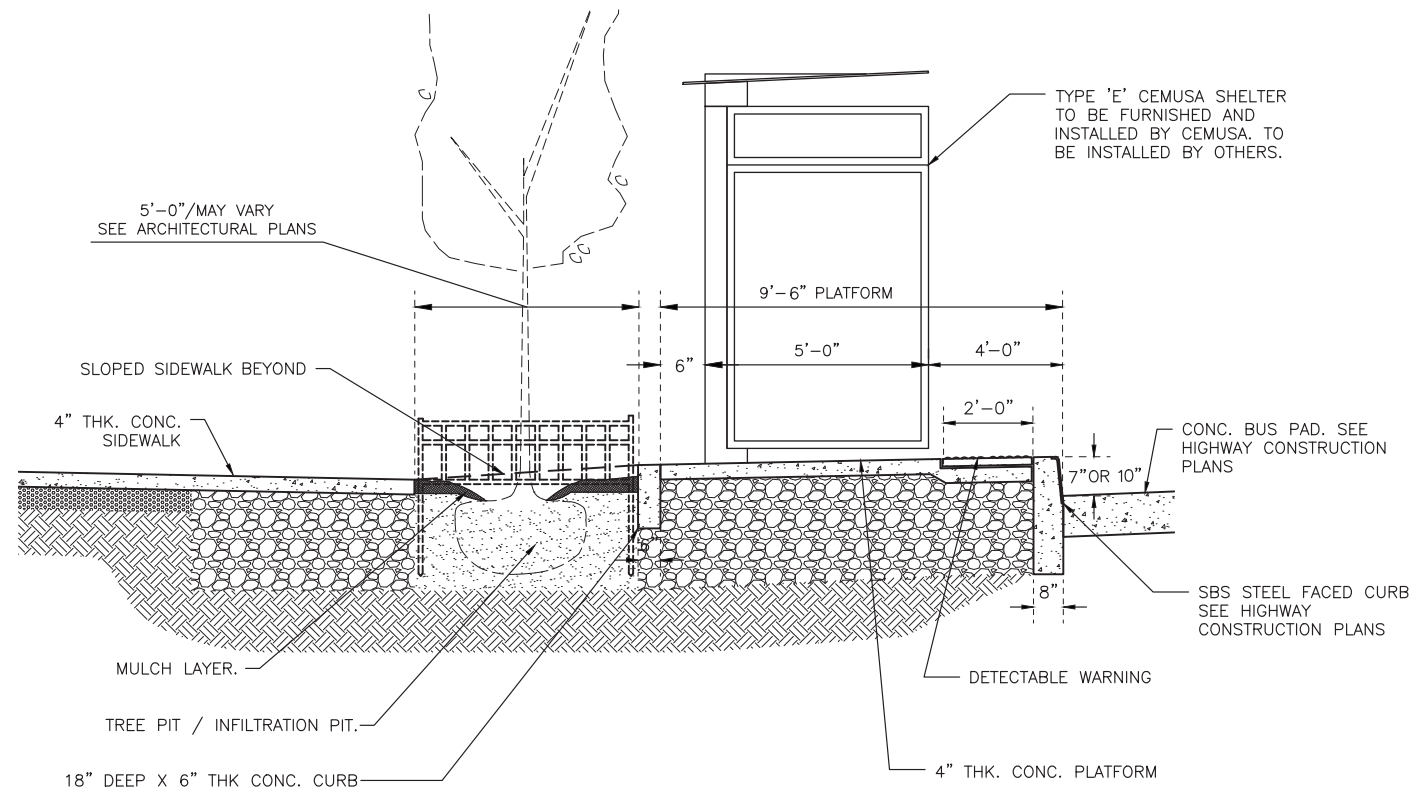
Scale: 0 5 10 20

- GENERAL NOTES:
- ACTUAL CONFIGURATION OF MACHINES/FURNITURE MAY VARY ACROSS LOCATION
 - FINAL DETERMINATION WILL BE BASED ON RIDERSHIP
 - AVOID TRIP HAZARD AT THE END OF BUS BULBS
 - EXTEND SLOPED SIDEWALK TO THE END OF BUS BULBS IN AREAS WITHOUT TREE PITS
 - SLOPED SIDEWALK TO BE ADJUSTED BASED ON CONFIRMED STREET FURNITURE PLACEMENT AND AVAILABILITY

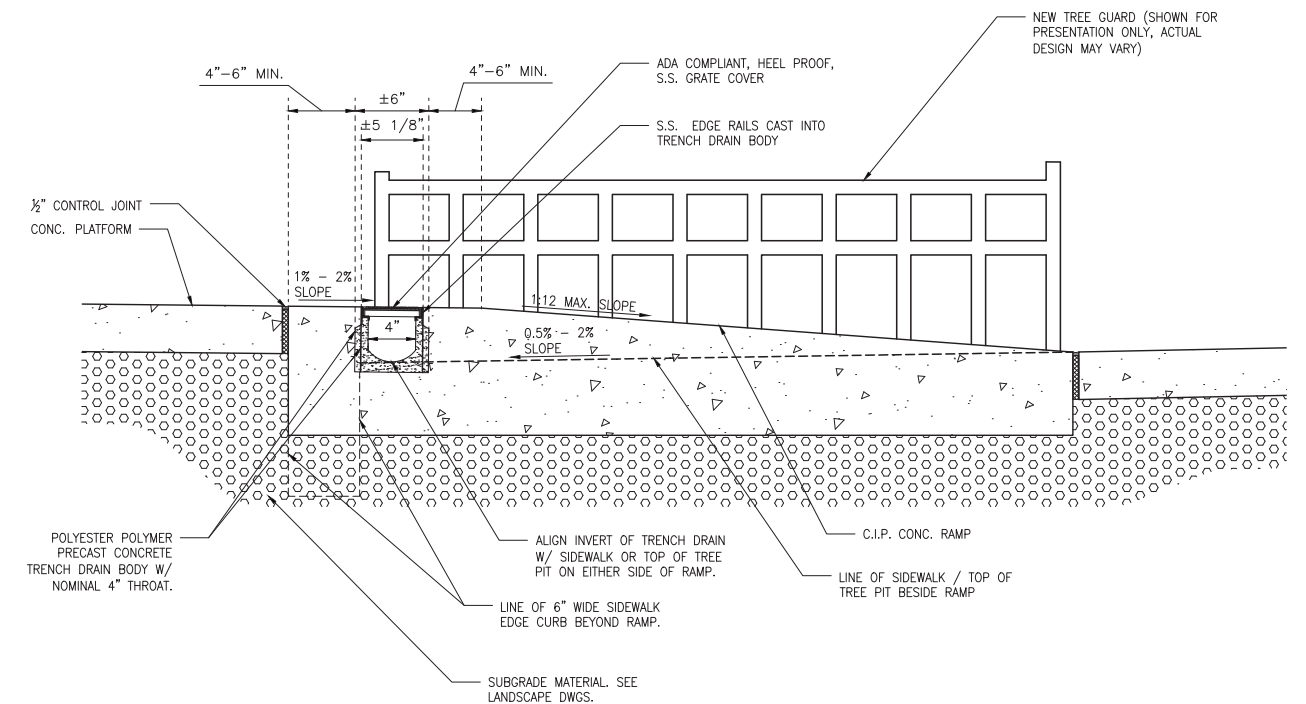
Vertical grade change between sidewalk and bus bulb



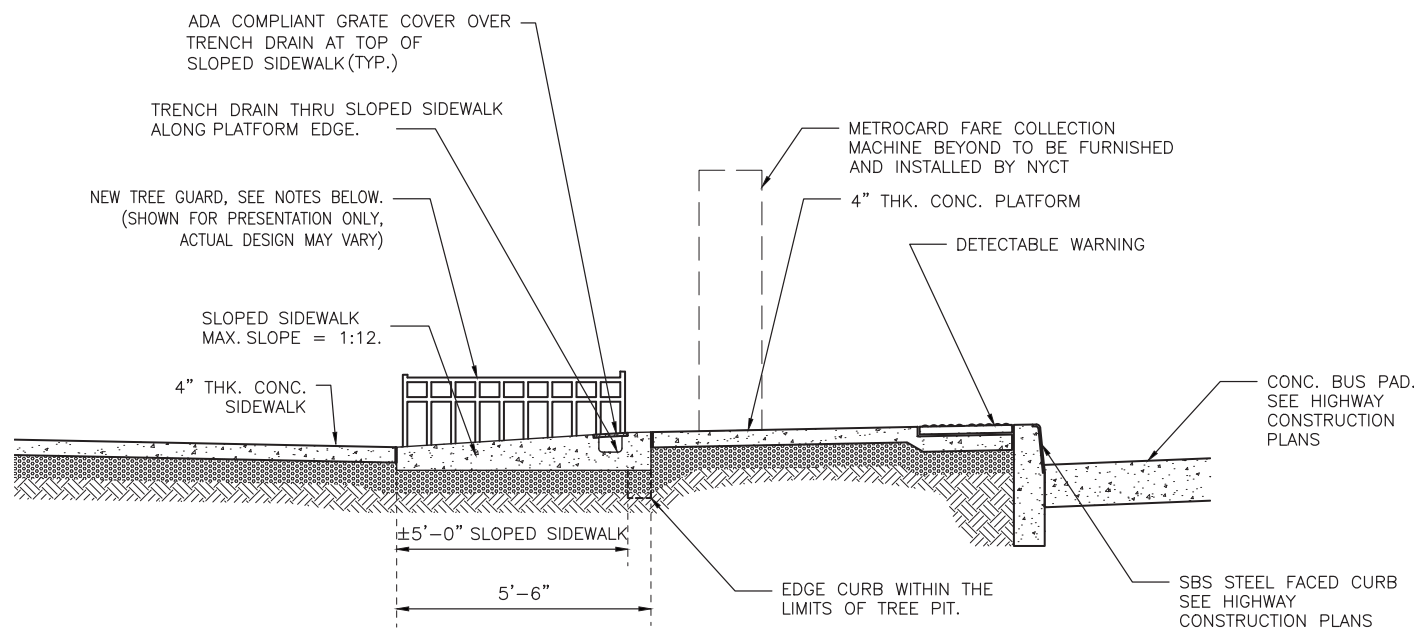
The sloped sidewalk transition is not preferred and to be used only in cases where site conditions cannot accommodate a flush transition. Extreme care must be taken when siting station amenities and locating ADA-compliant access points. There shall be no stepped grates in instances where only an island bus bulb can be employed.



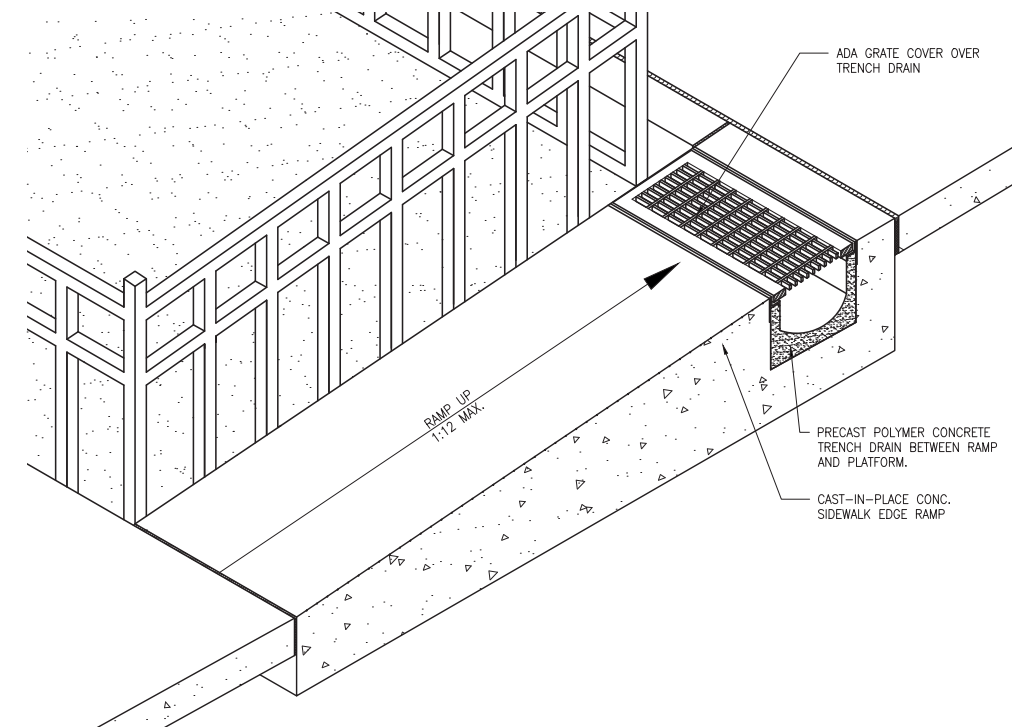
Typ. Section through sloped sidewalk - Ramp Reverse Slope Station



Typ. Section through sloped sidewalk - Reverse Slope Station



Typ. Section through Tree Pit Reverse Slope Station



Typ. Detail of sloped sidewalk with trench Drain along a Tree

Note: The sloped sidewalk with a trench drain requires added maintenance



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