

WEST INNOVATION DISTRICT (WID)

SETBACK & SCREENING DESIGN MANUAL

ID-6

DRAFT - May 14, 2026

Intent of This Document

The West Innovation District (WID) Setback and Screening Design Manual for ID-6 is an extension of Chapter 153.040 - Site Development Requirements of the City of Dublin, Ohio Code of Ordinances. The Design Manual supplements the baseline zoning requirements of the Code, providing guidance for setbacks, landscape design, implementation and strategies to address unique conditions needed to achieve the desired aesthetic and development pattern for ID-6 as viewed from public rights-of-way. Future updates to the Design Manual may address setbacks and screening for other WID zoning districts. Specific standards in this document may differ from Chapter 153.040, but this document establishes the preferred standards for achieving the desired aesthetic and development pattern for ID-6.

All references to setbacks within this manual include building and pavement, and are measured from future ROW conditions.

Executive Summary Maintaining Rural Character

The current ID-6 landscape character is primarily agricultural and rural, the approach to planting and design within development (building and pavement) setbacks should aim to maintain this character, as recommended in the Envision Dublin Community Plan.

Aiming to preserve this historic character in an evolving district, landscape requirements in these standards include overlapping and undulating earthen mounds, meadow expanses, tree row preservation, and native layered plantings and tree massings.

The Key objectives for the WID and ID-6 through this screening approach are:

- Screen the view of future ID-6 buildings, service areas, and parking from future public ROW (streets, sidewalks, trails) and existing residences,
- Apply sustainability practices to the district,
- Protect economic viability/development potential of properties, and
- Establish clarity and predictability in expectations for screening/buffering,
- Establish a greenway edge network through the WID.

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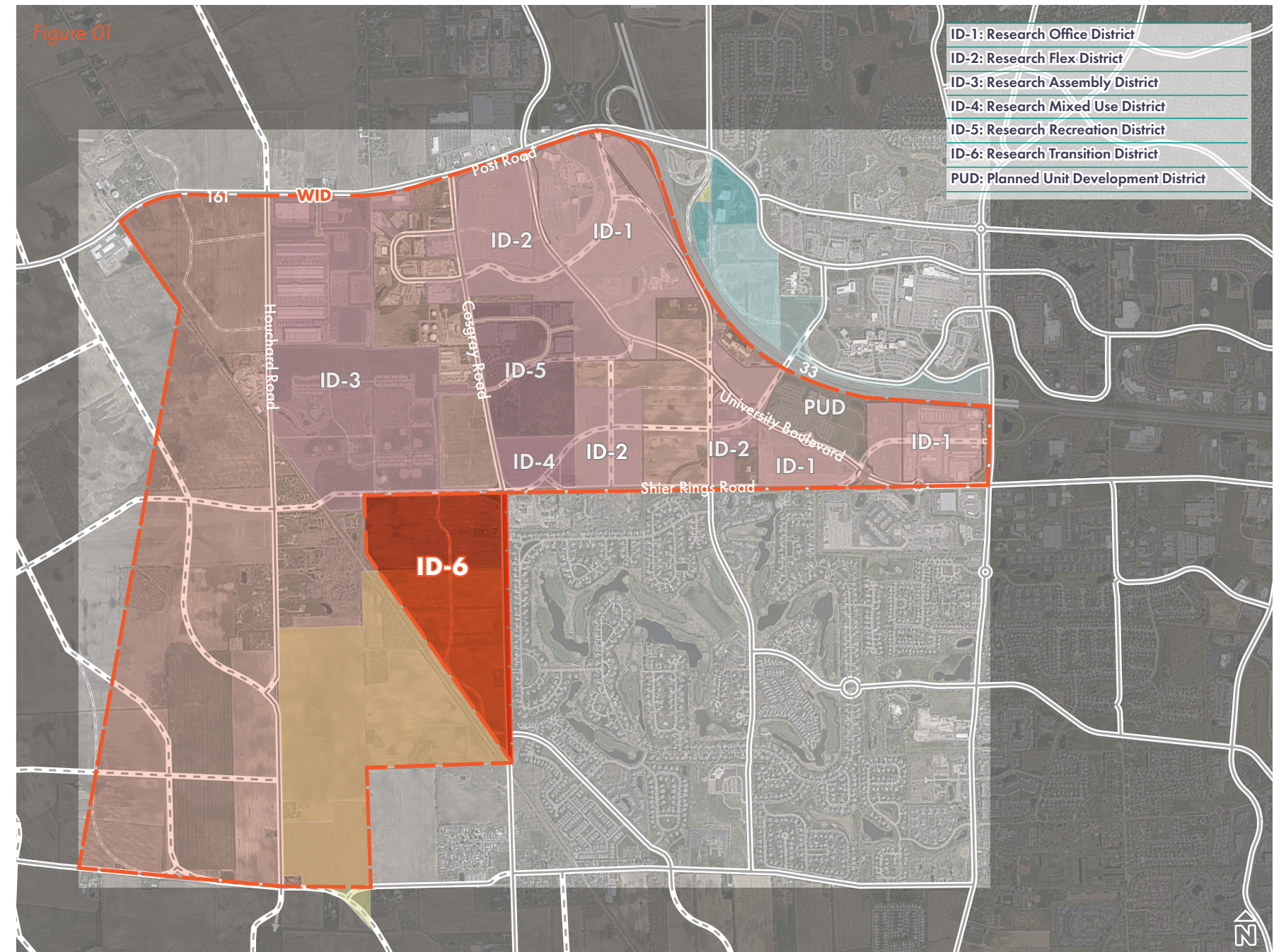
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Existing Site Features

ID-6

Section 01

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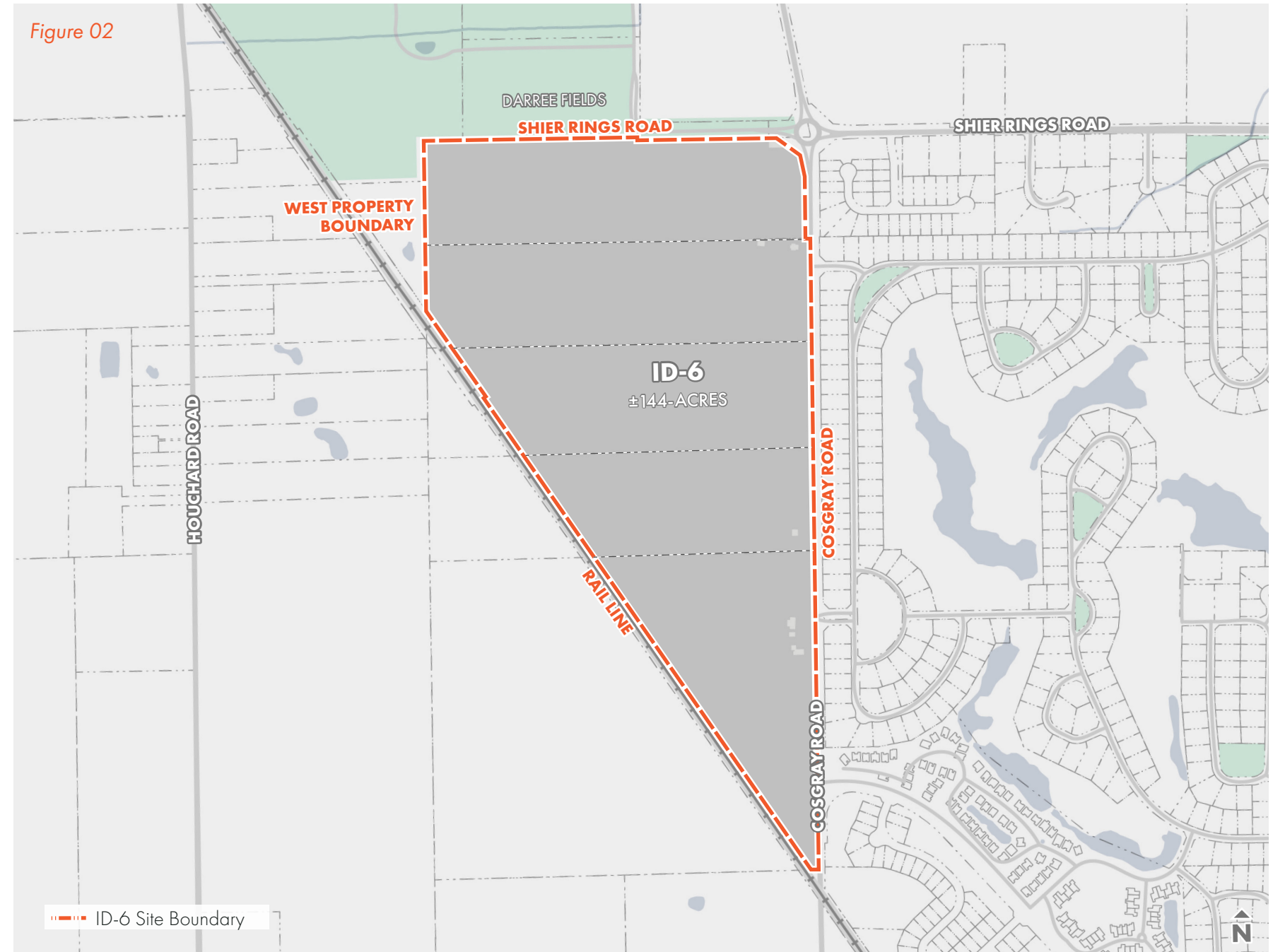


Existing Site Overview

ID-6 is bordered to the north by Darree Fields and a future Shier Rings Road extension; to the east by Cosgray Road; and to the south and west by an existing rail line. ID-6 is made up of five properties totaling approximately 144-acres.

The presence of existing residential uses directly east of Cosgray Road represents the most sensitive edge condition within ID-6. The screening and buffering standards established in this document are specifically designed to ensure a compatible transition between those existing neighborhoods and future development west of Cosgray Road.

Figure 02 depicts the existing site boundaries of ID-6.





Existing tree line on Cosgray Road



Existing Jewett Farmstead on Cosgray Road



Existing Farmstead at Cosgray Road & Barronsmore Way

Existing Site Features

The approaches to planting and design of setbacks within ID-6 are intended to maintain the historic rural and agricultural character of the area, as recommended in the Envision Dublin Community Plan. In addition to the natural and cultural features to be preserved, there are existing site infrastructure conditions that future development will need to acknowledge and accommodate. Key approaches for implementation include:

- Preservation of existing mature tree rows and stands of trees. Windbreaks or shelter belts have historically been implemented in rural or agricultural contexts for property delineation or soil conservation.
- Planting native grasslands/prairie and open canopy plantings along roadway corridors.
- Preservation of periodic small structures/uses close to the road (houses, barns, gas stations, churches, graveyards, etc).
- Preservation of periodic vistas with long views into space (farm field, pasture, horse farm, prairie).

Features to Preserve

There are two primary site features to be preserved within the ID-6 boundary (*Figure 03*): existing farmsteads and existing mature tree rows throughout the property.

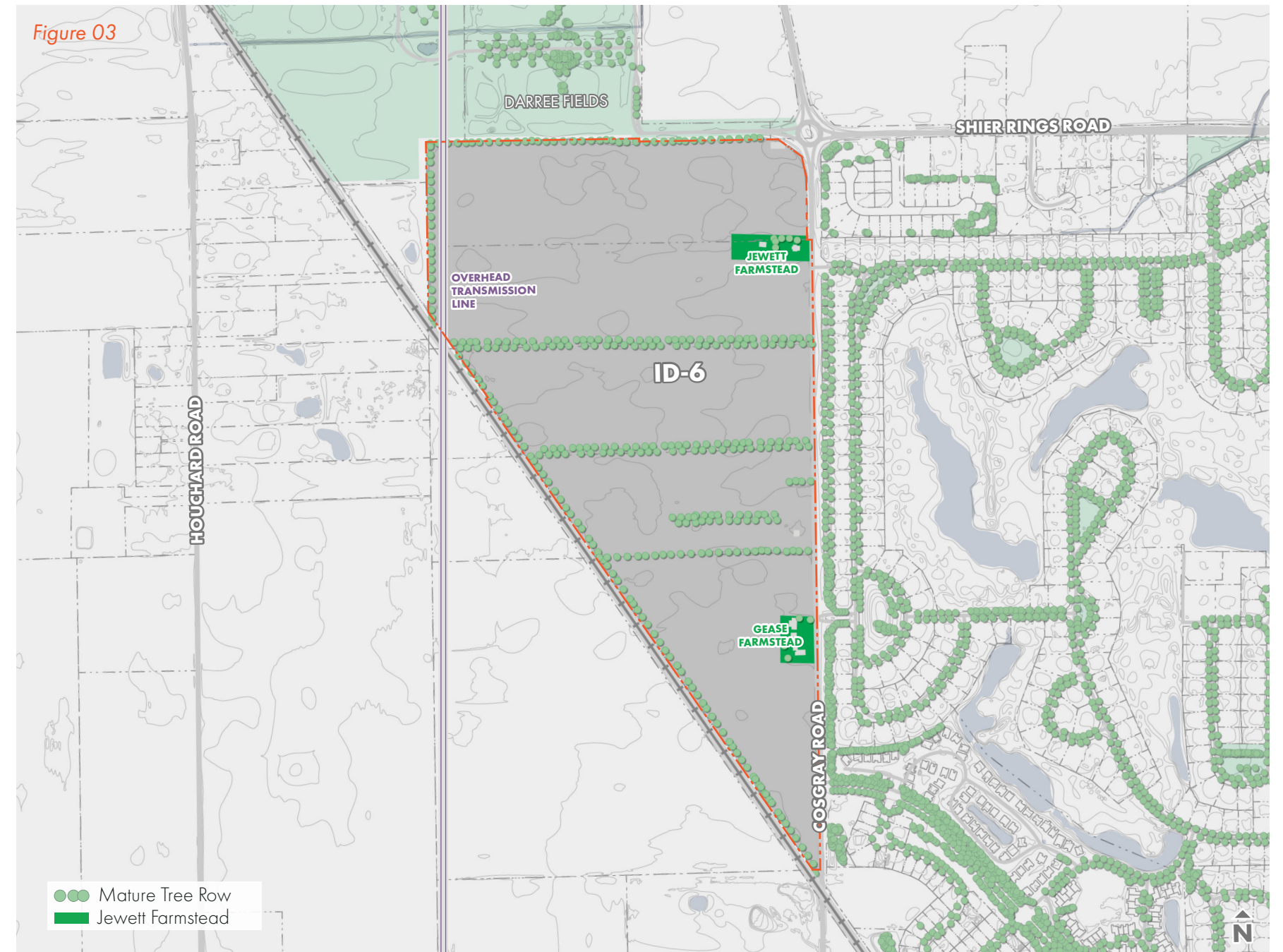
The Jewett Farmstead is located just south of the Shier Rings Road and Cosgray Road intersection. This property has been acquired by the City of

Dublin to ensure proper preservation of the site. There is an additional farmstead located at the intersection of Cosgray Road and Barronsmore Way that consists of an existing farmhouse and barn (Gease Farmstead). Screening requirements around the north, south, and west edges of these farmsteads are detailed in *Section 04 Special Conditions*.

Additionally, there are existing, mature tree rows along the existing east/west property lines within ID-6. Preservation and screening requirements for existing tree rows is detailed further in *Section 03 General Design Guidelines*.

Overhead Transmission Line

An overhead electrical transmission line runs along the western edge of ID-6, crossing the future Shier Rings Road extension. Future development within ID-6 must account for this corridor when designing required mounds and landscape plantings. This condition is detailed further in *Section 04 Special Conditions*.



Implementation Approach

ID-6

Section 02

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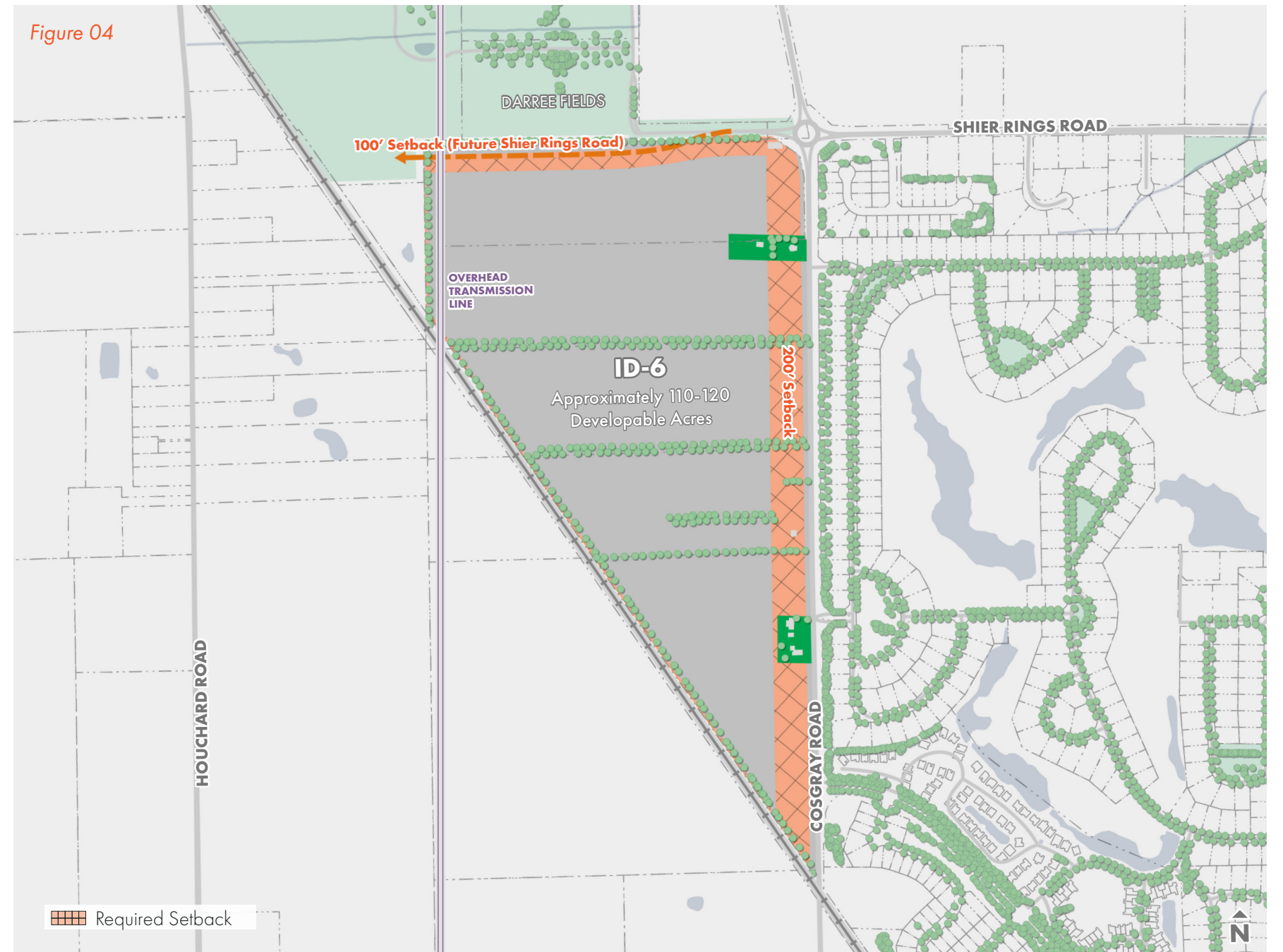
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Overall Framework Plan

The primary approach to preserving the rural character of the defined WID boundary through the setback and screening requirements in this document is the establishment of a greenway edge network. This greenway corridor will be established through the required setbacks within each development site, and align with the landscape design manual.

Figure 04 illustrates the extent of the described greenway edge network around ID-6.



Design Intent & Approach

Three primary approaches will be utilized to implement the desired landscape condition of the ID-6. These approaches vary based on the site location, roadway typology, and/or immediate site adjacencies. This design manual describes the overall desired landscape condition of ID-6 and required design approaches.

As illustrated in *Figure 05*, Requirements for ID-6 are described by edge, including:

1. **Primary Streets** (Cosgray Road & Shier Rings Road)
2. **Local Streets** (Internal)
3. **Roundabout** (Cosgray & Shier Rings Road intersection)

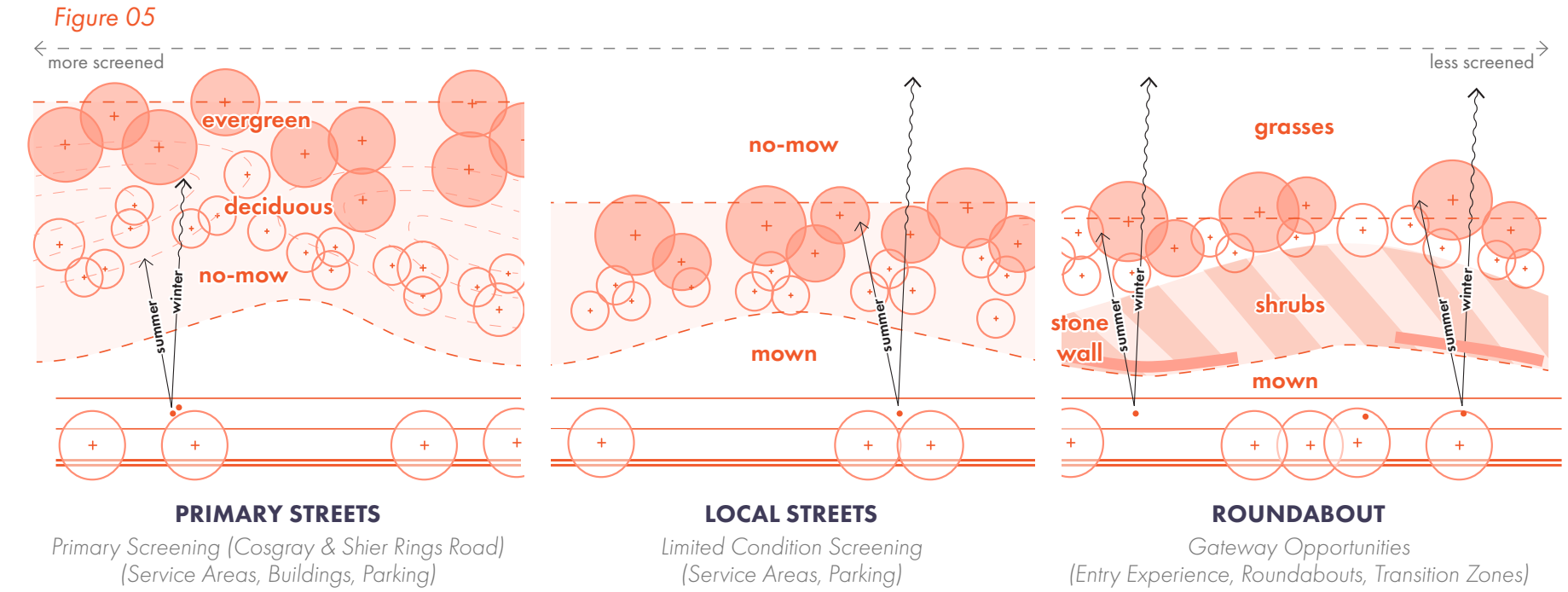
The described condition for Primary Streets is the preferred condition throughout the WID. This condition is intended for external, public roadways and should be utilized in all instances

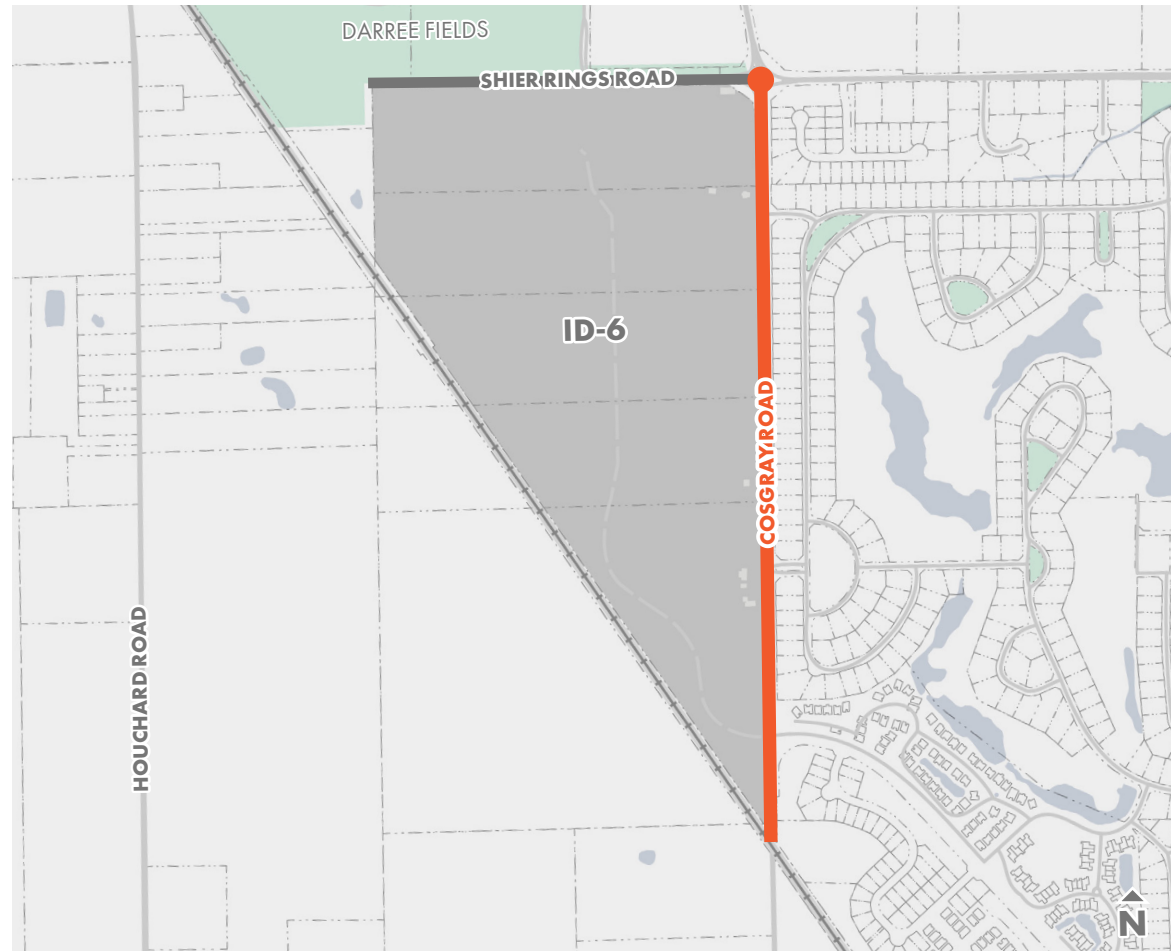


except for special conditions described in Section 04, or in instances with setback constraints. Primary Streets is the required condition of Cosgray Road and Shier Rings Road along the edges of ID-6.

The Local Streets condition is for public streets internal to ID-6 and instances approved for limited screening, such as limited setback requirements or other special conditions.

The Roundabout condition is reserved specifically for the identified gateway opportunity at the intersection of Cosgray Road and Shier Rings Road.





**ID-6 Implementation Approach
Cosgray Road**

Given the importance of Cosgray Road as a primary arterial street through the WID, and considering the adjacent residential uses, the setback along Cosgray Road on the eastern edge of ID-6 should be generous to maintain the rural character and to provide maximum screening of future development west of Cosgray Road from the public ROW. In addition to the required screening of development along the western side of Cosgray Road, it is being enhanced to add two drive lanes, street trees, and a planted center median. *Figure 06* provides a conceptual illustration of the planned enhancements to Cosgray Road, and the preferred screening condition along the eastern edge of ID-6.

Chapter 153.039-040 of the City of Dublin's codified ordinance should be reference for additional setback requirements along Cosgray Road. To achieve the desired condition outlined in the following spread (*Figures 07-08*), a 200' building and pavement setback, with a 14' tall planted mound is required along Cosgray Road on the eastern edge of ID-6.



Conceptual Illustration of Future Cosgray Road Enhancements & Intended Edge Screening Character

Cosgray Road

Figures 07-08 provide conceptual illustrations of the intended setback and screening condition for Cosgray Road along the eastern edge of ID-6.

Figure 07 depicts the layered planting, mounding, and overall transition/screening between existing residential uses east of Cosgray Road and future development west of Cosgray Road.

Figure 08 illustrates the desired condition within the required building setback, including mound height, slope, and general depth. Additionally, Figure 08 illustrates the use of layered planting strategies to provide year round screening. The intent for Cosgray Road is provide a minimum of 90% opacity screening from the public ROW. Additional details for slopes, grading, and planting can be found in Section 03 General Design Guidelines.

An additional consideration to be determined along with the City of Dublin is the existing utility lines along the western edge of Cosgray Road. An easement may be required to incorporate this utility corridor (above or below ground) without interfering with the required mound and landscape. This condition is detailed further in Section 04 Special Conditions, and may result in an expanded buffer zone between the public ROW and the start of the mound (~30').

Summary

Mound Height: 14 feet (front slope of 6:1 and back slope of 3:1)

Setback: 200 feet from future ROW

Stormwater: Site stormwater and all required swales to be located on the private side of the mound.

Planting:

- Evergreen clusters on interior (private) slope of mounds, deciduous clusters on public slope
- Meadow grasses on front slope of mound
- Mown turf in buffer between ROW & mound

Figure 07. Cosgray Road Intended Screening Condition

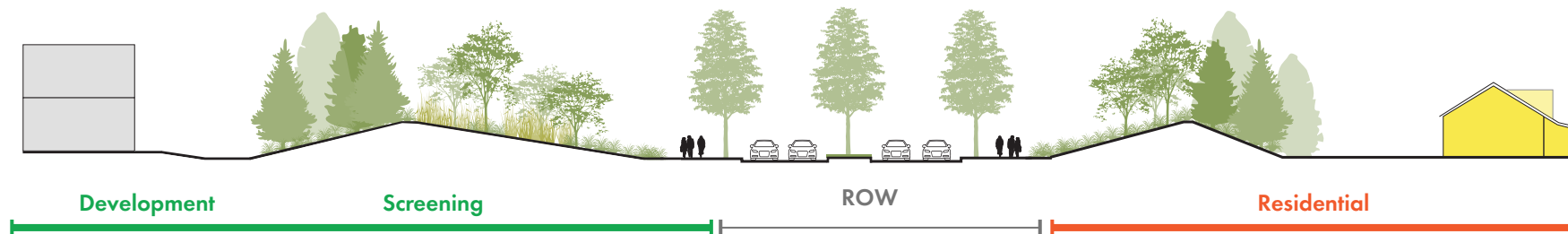
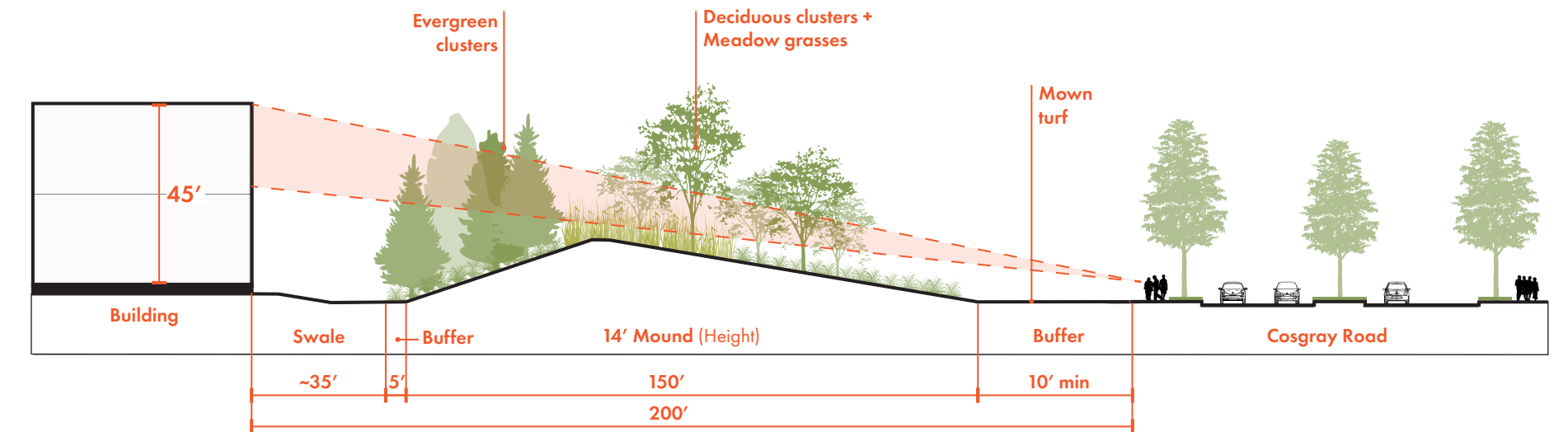
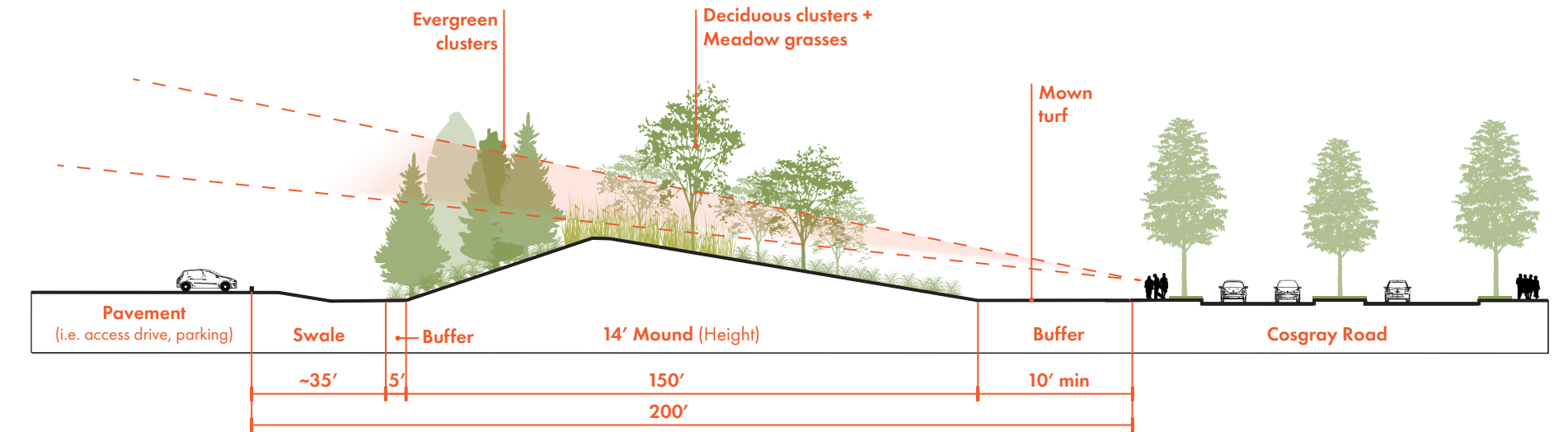
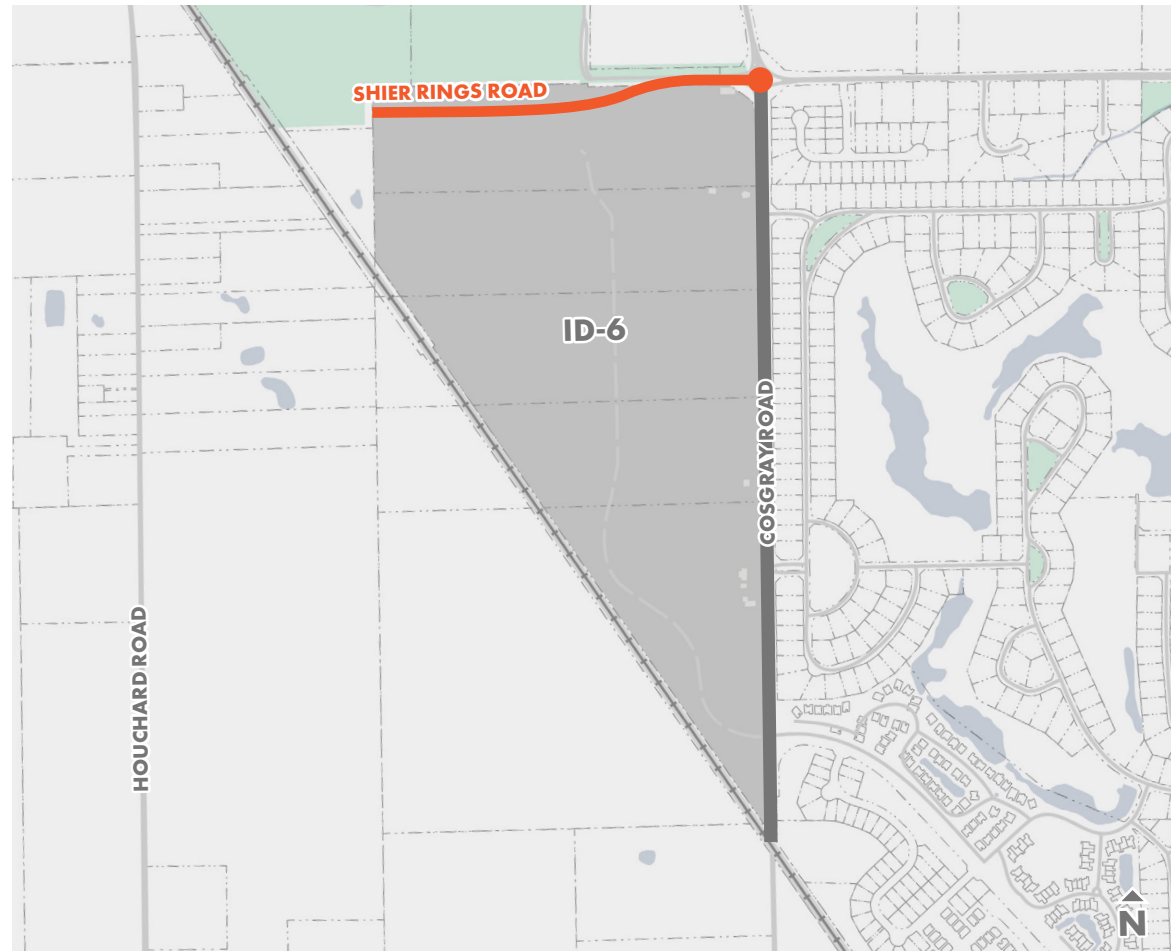


Figure 08. Cosgray Road 200' Setback, Layered Planting, and 14' Tall Mound



Setbacks measured from future ROW



ID-6 Implementation Approach Shier Rings Road

Darree Fields is located north of Shier Rings Road, adjacent to ID-6. Therefore, the setback along Shier Rings Road on the northern edge of ID-6 should also be generous to maintain the rural character and to provide maximum screening of future development south of Shier Rings Road from the public ROW. In accordance

with the Future Thoroughfare Plan, Shier Rings Road is intended to extend west of the existing roundabout at the intersection of Cosgray Road.

The roundabout at the intersection of Shier Rings Road and Cosgray Road is identified as a gateway moment. The desired character of this intersection is further detailed in *Section 04 Special Conditions*.

Chapter 039-040 of the City of Dublin’s codified ordinance should be reference for additional setback requirements along Shier Rings Road. To achieve the desired condition outlined on the following page (*Figure 09*), a 100’ building and pavement setback, with an 8’ tall planted mound is required along Shier Rings Road on the northern edge of ID-6, transitioning west from the roundabout condition at the intersection of Shier Rings Road and Cosgray Road. The typology transition should start approximately 350-400’ west of the centerpoint of the roundabout. The illustrated condition includes the required building setback, including mound height, slope, and general depth. Additionally, *Figure 09* illustrates the use of layered planting strategies to provide year round screening. The intent for Shier Rings Road is provide a minimum of 75% opacity screening from the public ROW. Additional details for slopes, grading, and planting can be found in *Section 03 General Design Guidelines*.

Summary

Mound Height: 8 feet (front slope of 6:1 and back slope of 3:1)

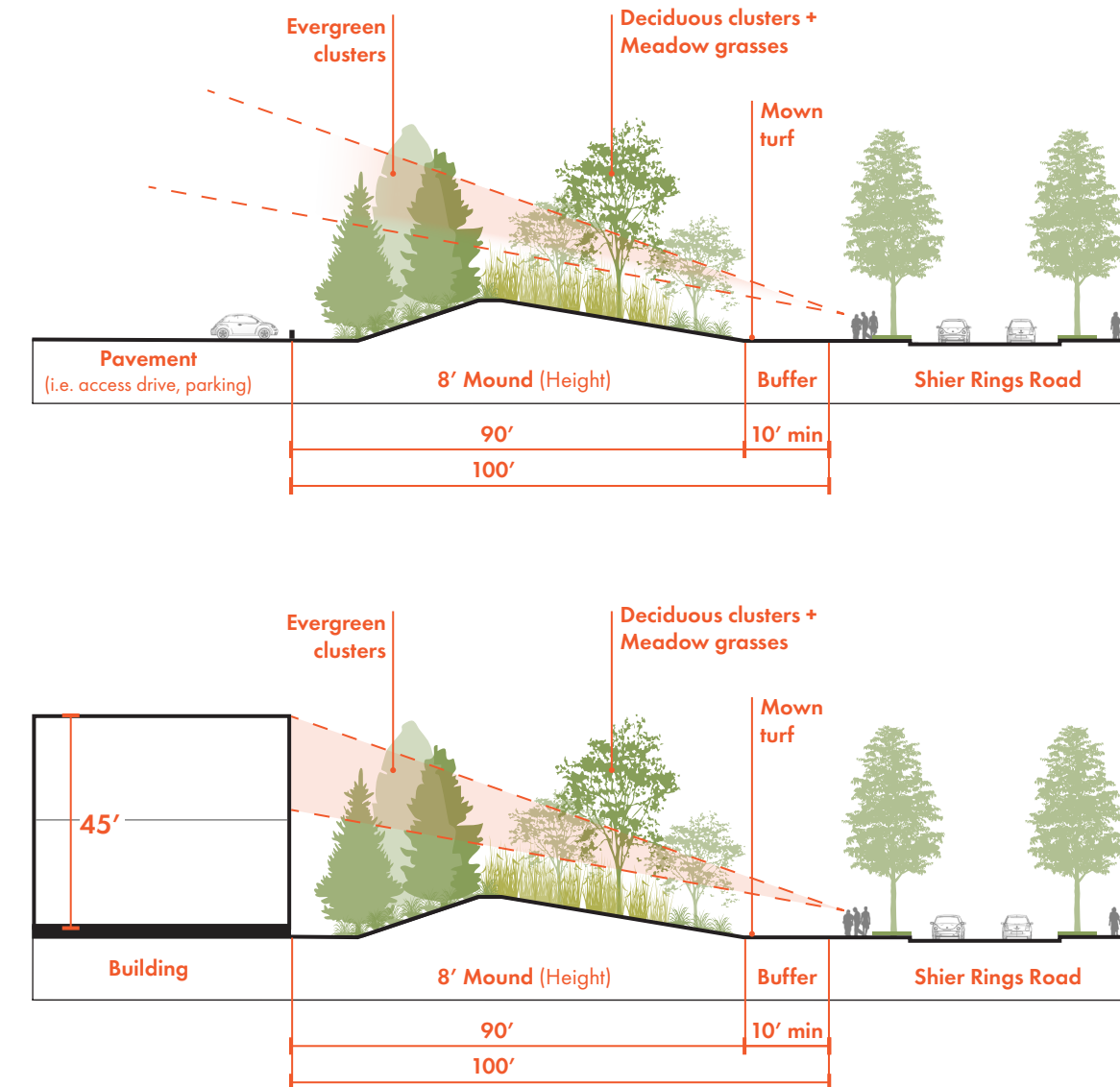
Setback: 100 feet from future ROW

Stormwater: Site stormwater and all required swales to be located on the private side of the mound.

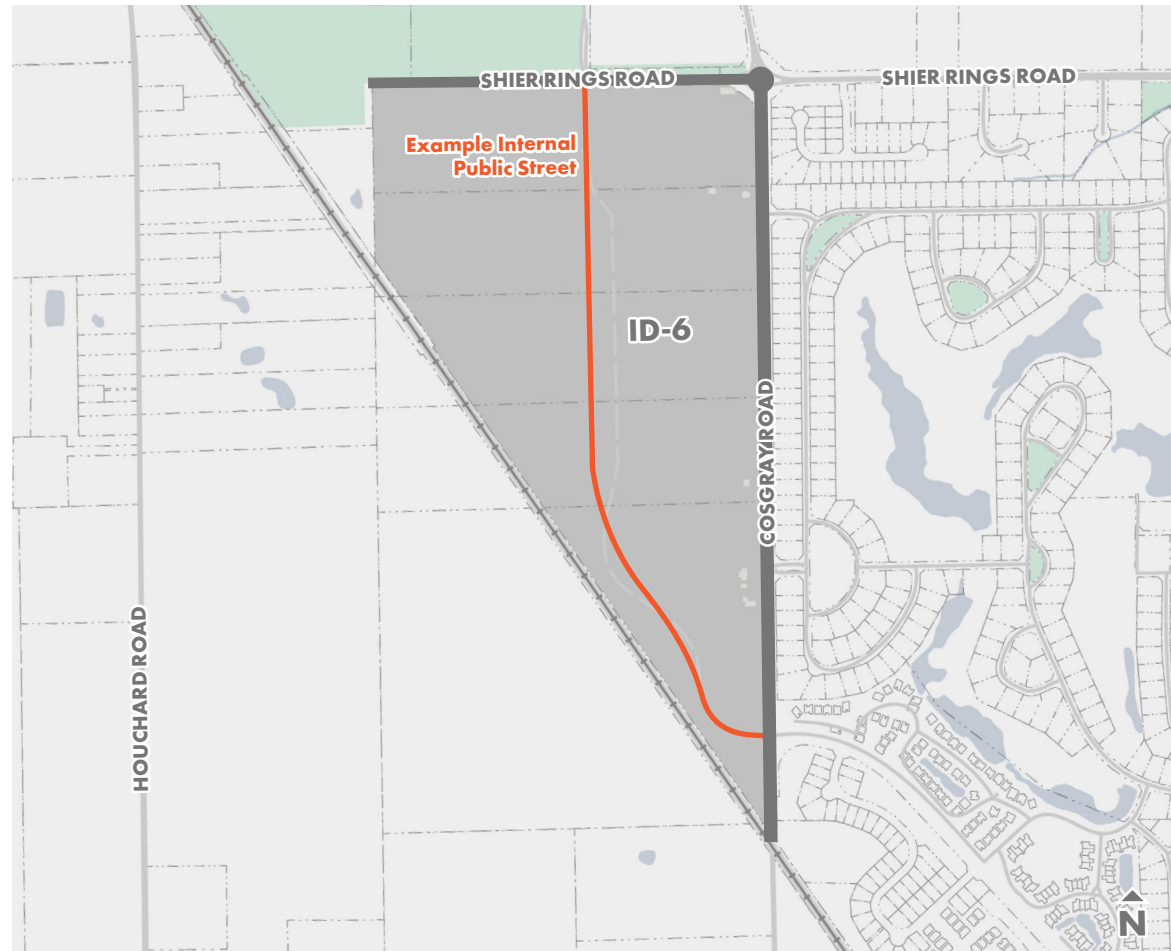
Planting:

- Evergreen clusters on interior (private) slope of mounds, deciduous clusters on public slope
- Meadow grasses on front slope of mound
- Mown turf in buffer between ROW & mound

Figure 09. Shier Rings Road 100’ Setback, Layered Planting, and 8’ Tall Mound



Setbacks measured from future ROW



**ID-6 Implementation Approach
Local Streets**

Local Streets internal to ID-6, includes “loop roads”, access drives, and through roads. The setbacks along Local Streets are intended to preserve the desired character of the WID, but not reduce development ground in the same manner as a roadway. Any illustrations of Local Streets in this document are conceptual

and intended only to serve as examples for the purposes of this design manual.

Buffer Planting

The typology along Local Streets should utilize dense planting with a mix of native evergreen and deciduous trees and grasslands for year-round screening and interest. Opportunities for low, undulating stone walls and/or stormwater

can be considered depending on the width of the setback. Stormwater may only be included on the private side of the screening components. See Landscape and Planting Guidelines in Section 05 for specific planting requirements.

The Local Streets condition can be implemented with or without mounding based on the setback condition. Additionally, if there are opportunities to showcase or expose high-quality architecture and facades along internal streets, openings or an increase in transparency can be considered for those areas.

Figure 10 provides a conceptual illustration and supporting imagery of the desired condition/character along Local Streets within ID-6. This condition is further detailed in Section 03 General Design Guidelines.

The City of Dublin’s codified ordinance should be reference for additional setback requirements along Local Streets. To achieve the desired condition outlined on the following page (Figure 10), a 35’ minimum building and pavement setback from the ROW, with layered planting is required along all Local Streets within ID-6.

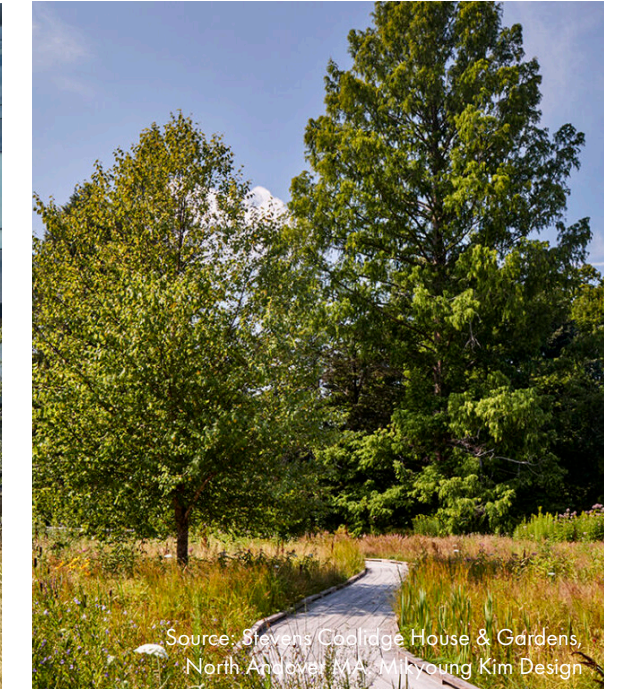
Figure 10



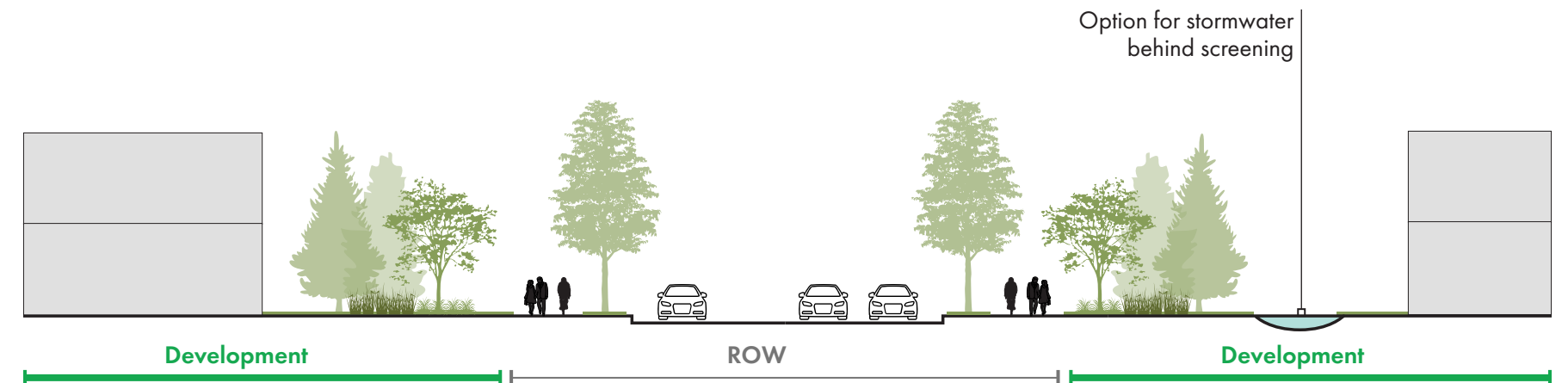
STORMWATER INCORPORATION



SHOWCASE HIGH-QUALITY ARCHITECTURE



DENSE LAYERED PLANTING



General Design Guidelines

ID-6

Section 03

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Setback Components

Setback components may vary based on location, adjacent corridors, and adjacent land uses, but the desired character and landscape approach should remain. *Figure 11* highlights a typical approach for setback component configuration. As detailed in this section, dimensions between the public ROW and base of the mound may vary based on potential utility easements and/or multi-use pathways. The distance between the base of mounds on the private side, and on-site development may vary based on internal site circulation, stormwater, and drainage needs.

Note that any approved site fencing should not be placed within the required setback, and should not be visible from the public ROW.

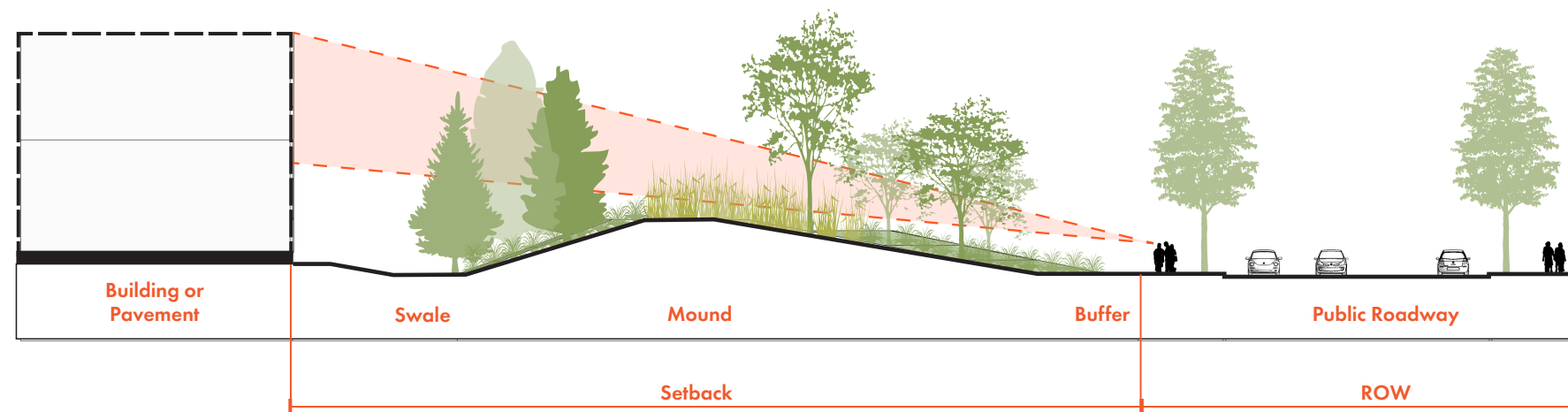
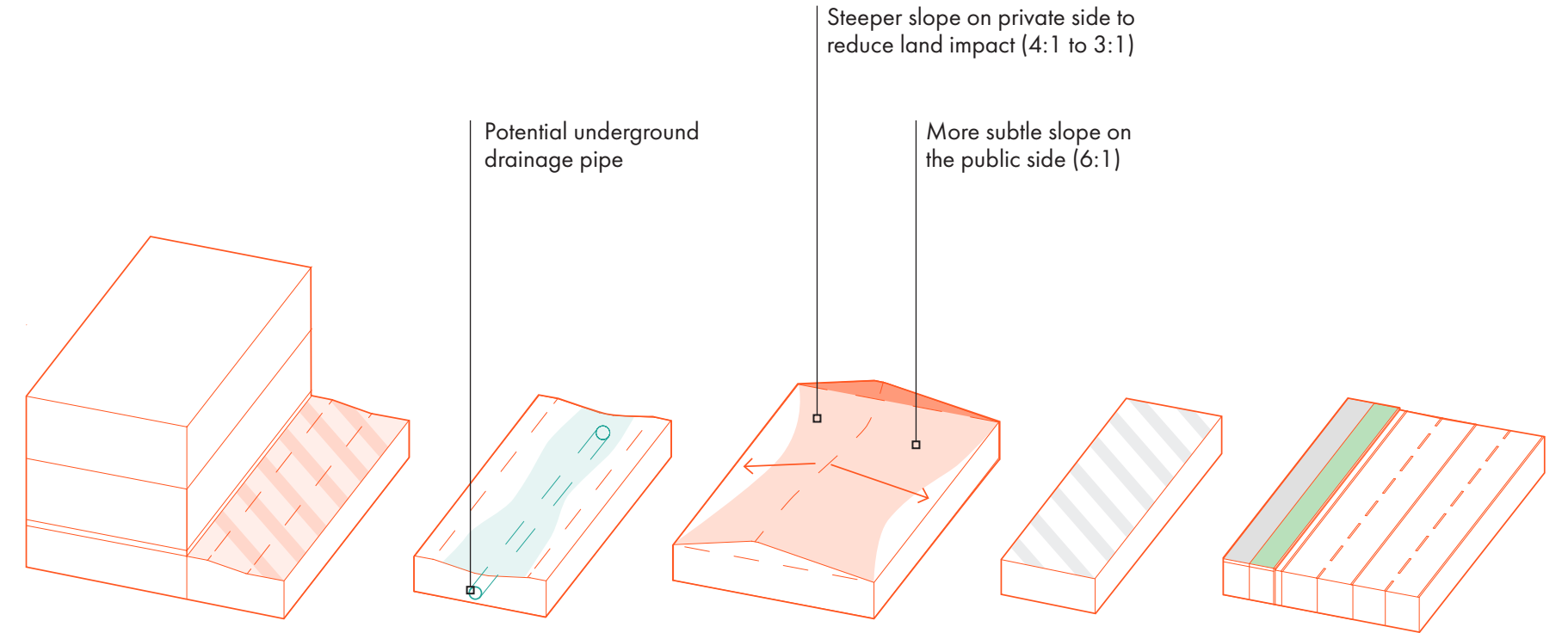


Figure 11. Setback Components



Building or Pavement Runoff

Space between mound and building face or pavement for drainage, user access/circulation, and emergency access.

Development Stormwater & Mound Runoff

Space at the base of back side of mound for water runoff. This zone can be utilized for development stormwater requirements.

Mounds

Height of the mound: 8' to 14' (determined by adjacent corridor and adjacent land uses)

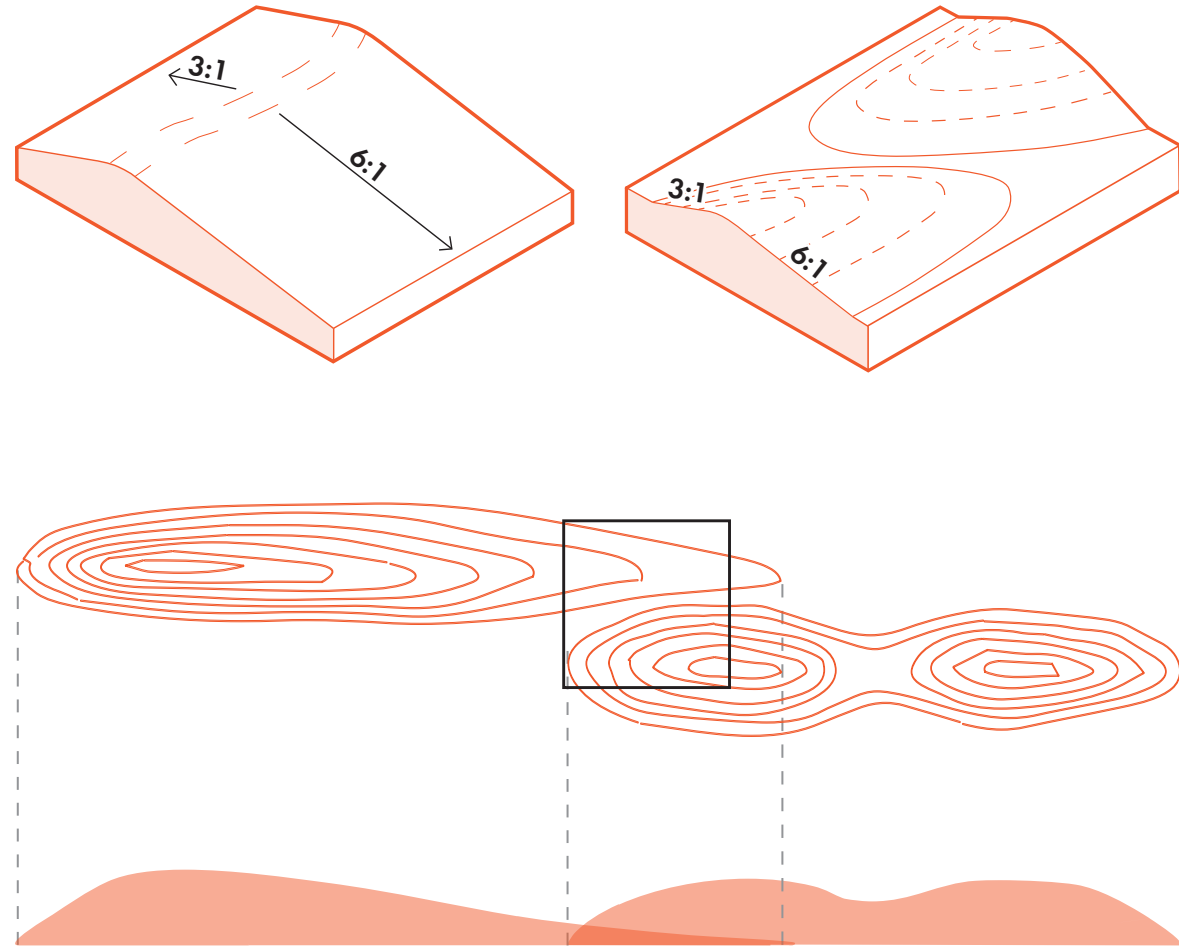
Utility or Shared Use Path Easement (When Applicable)

Right-of-Way

Figure 12. Overlapping / Undulating Mounds

6:1 average slope (max) on public side of mound for a naturalized condition.

3:1 slope on the private side to reduce mound depth.



Mound Grading

- Mound grading shall undulate and vary in both vertical and horizontal dimensions, with a maximum slope of 6:1 on the public side and 3:1 on the private side.
- Mound heights are identified in Section 02 and are dependent upon roadway and use adjacencies. The top of mound widths should range from 2-4'
- The back slope (private side) of the mound should be sloped at a maximum 3:1 gradient.
- In special cases (identified in this section) where the mound height is unable to be met, plantings that provide 100% coverage at full foliage may be utilized to meet screening requirements (as approved by the City). This condition should not exceed more than 30% of the entirety of the ID-6 site edge condition.
- Plant species list and maintenance guidelines can be found at the end of this section.

Figure 13. Mound Grading & Undulation

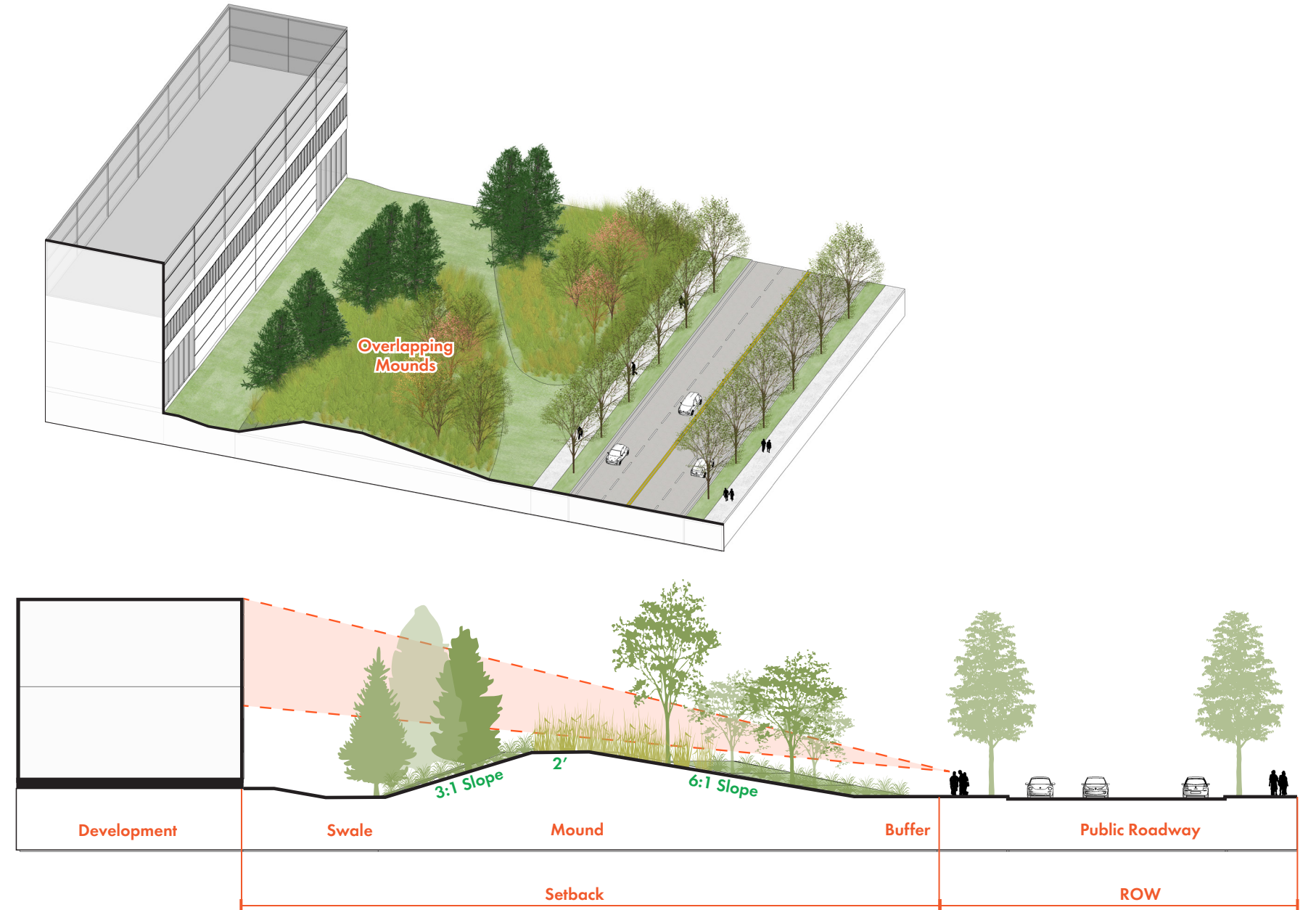
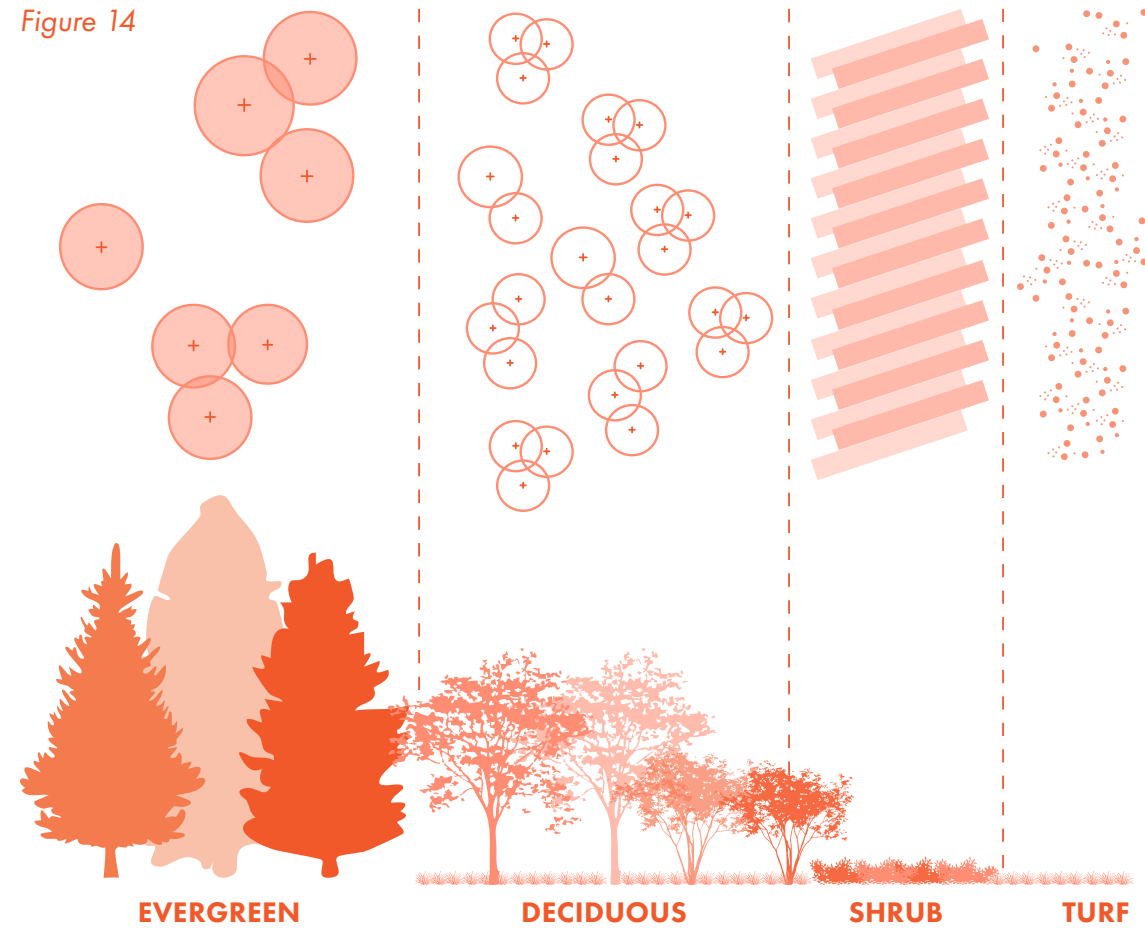


Figure 14



Mound Planting

- With or without mounds, planting should occur in three to four layers of naturalized "drifts" or organic groupings of trees.
- Mounds shall have a simple mix of meadow and tree/shrub groupings placed in massings.
- Tree installation sizes: Tree sizes to be mixed in at least three different sizes ranging from 2" to 3" caliper. No more than 50% of trees shall be 2" caliper
- Tree plantings shall include a minimum of 5 species per property. No single species shall comprise more than 40% of the total quantity of trees within the required buffer planting.
- Tree spacing shall vary randomly in a staggered pattern between 6' and 10' on-center to achieve a naturalized appearance. A minimum of 30 trees shall be provided per 100 linear feet of setback.
- Trees shall be under-planted with native meadow or shrubs.
- Only the back (private) side of the mound can be mown, maintained turf grass. This condition should not be seen from the public ROW.
- For plant health and growth, trees should not be planted at the peak of the mound.
- Plant species list and maintenance guidelines can be found at the end of this section.

Figure 15. Screening Components: Plantings

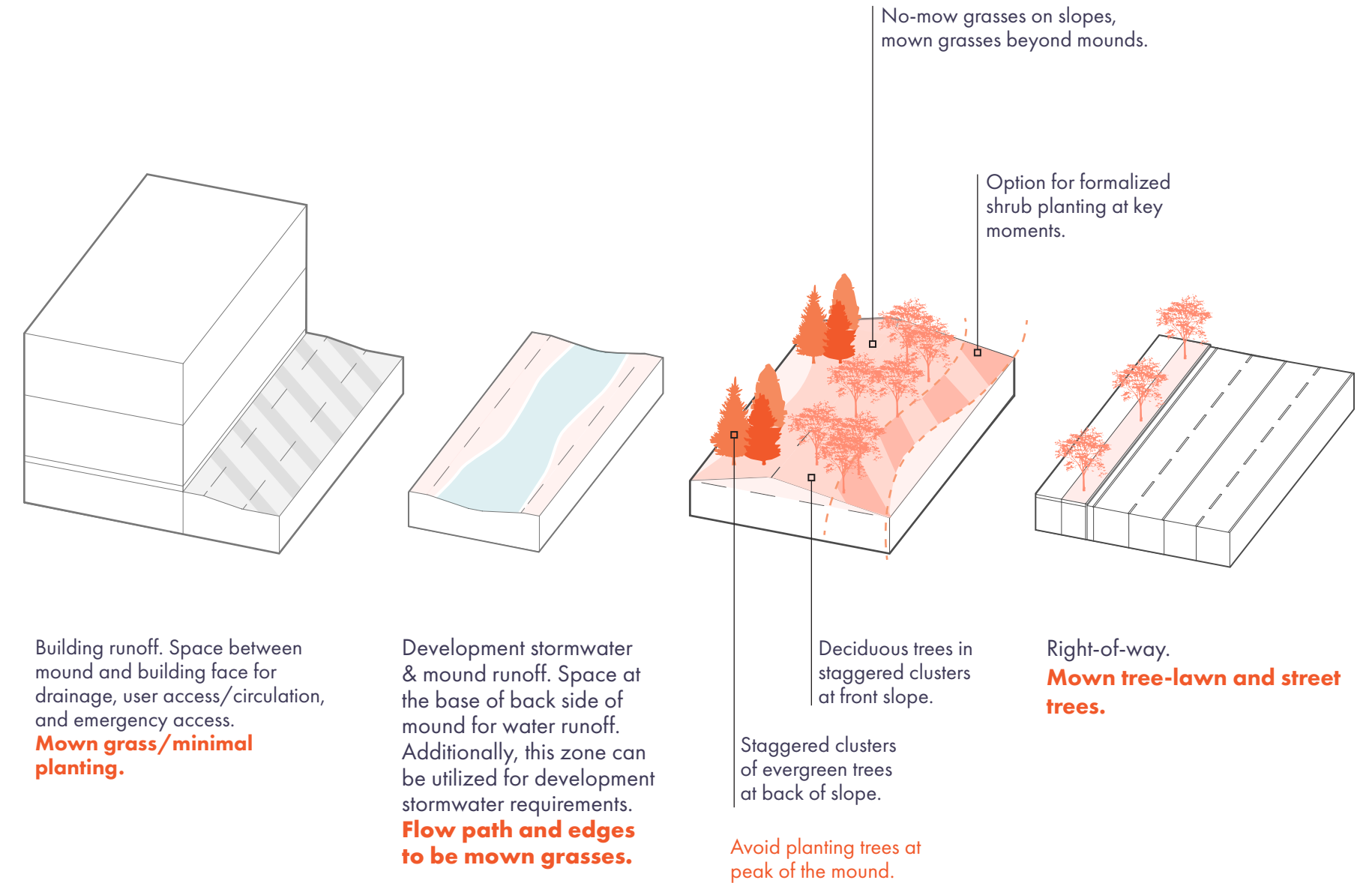
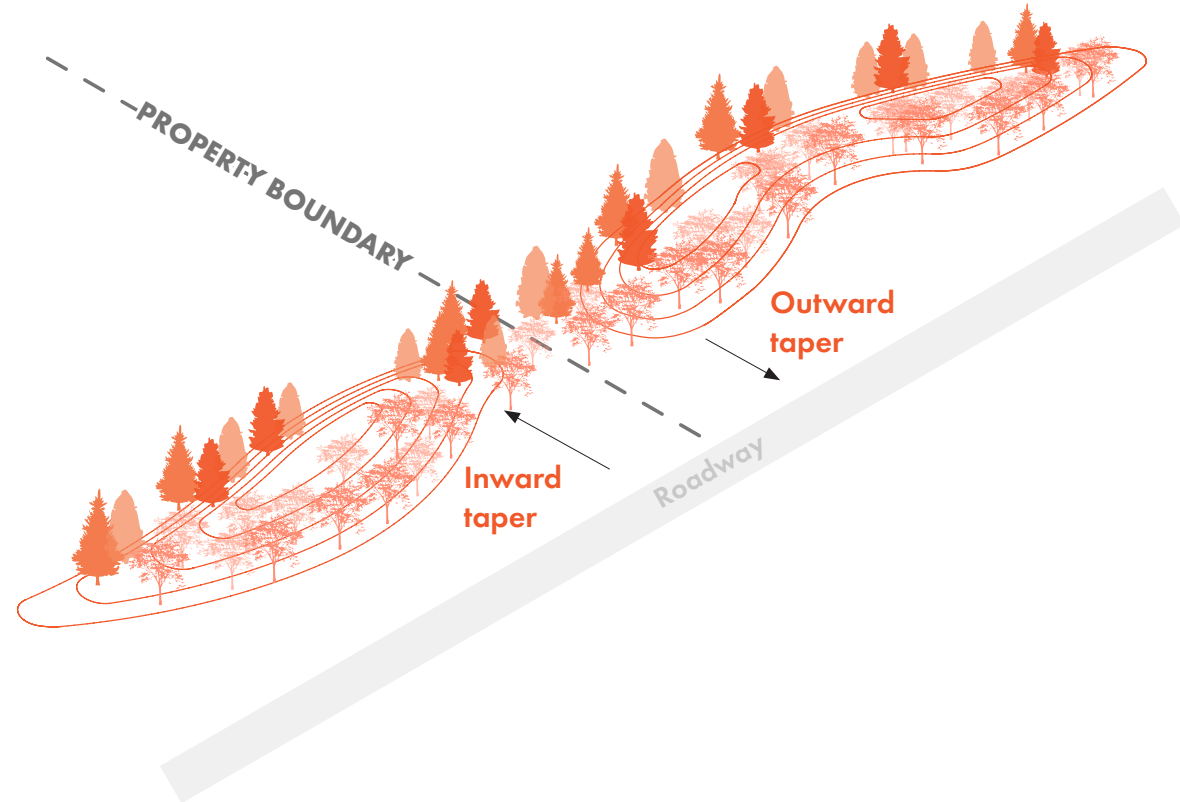


Figure 16. Property Boundary Mound Approach - Example Condition



Property Boundary

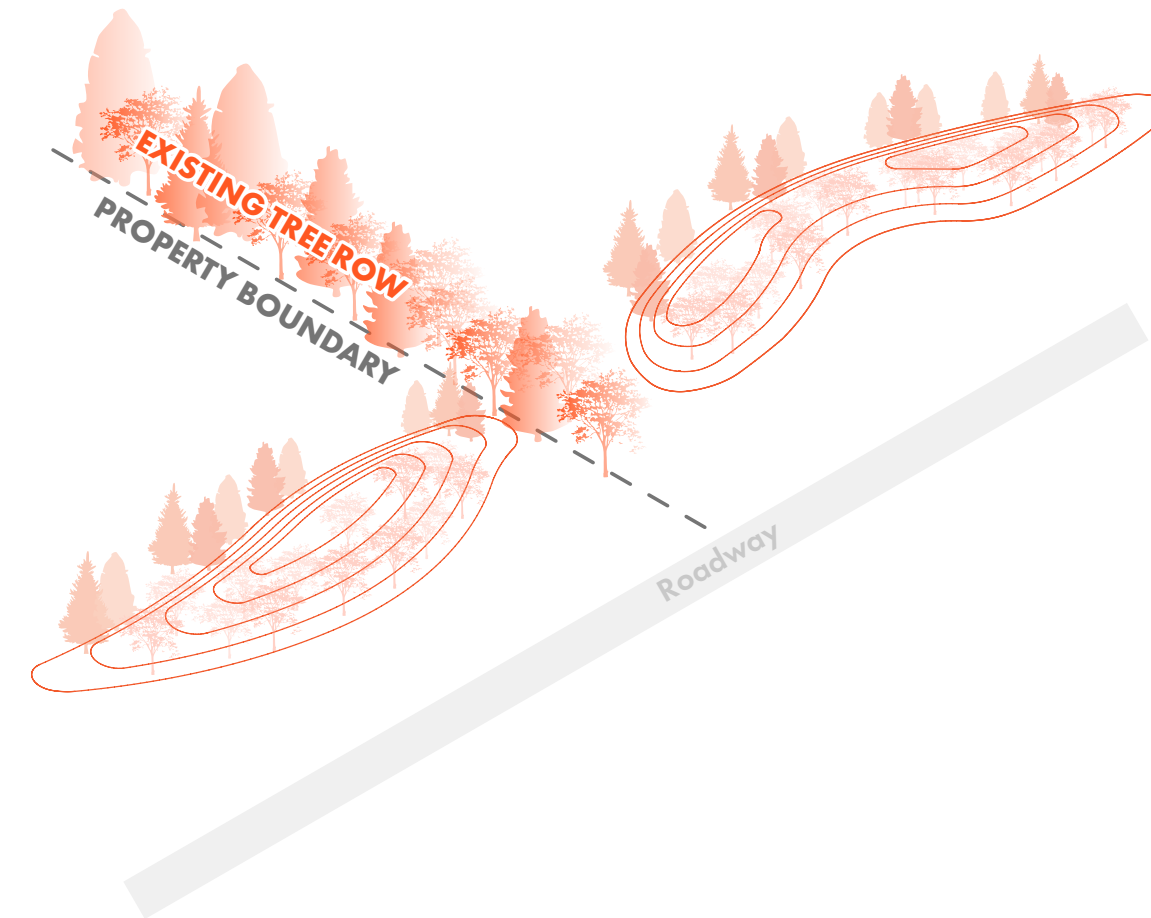
Recognizing that individual properties may develop at different times, it is important that mound forms are able to continue in a natural manner across each property.

Mounds approaching a property edge shall transition to a maximum 4:1 slope to gradually taper at their terminus. To support a visually continuous landform across properties, mound edges shall be shaped to suggest continuation beyond the property line, creating a subtle “overlapping” effect when viewed from the public right-of-way. This effect can be achieved by tapering inward or outward opposite to adjacent property mounds, as illustrated in *Figure 16*.

Where an adjacent mound is not yet present, the mound terminus may be tapered either inward toward the development or outward toward the public right-of-way. In all cases, any area beyond the mound terminus shall still be planted in accordance with the required planting conditions to avoid open viewsheds between properties.

For side-yard conditions where adjacent properties remain undeveloped, planting shall follow the Local Streets condition, or a City-approved equivalent.

Figure 17. Tree Row and Mound Interruption Approach - Example Condition



Tree Row Preservation

As identified in Sections 01 and 02, the approach to planting and design of setbacks within ID-6 should aim to maintain the historic rural and agricultural character of the area, as recommended in the Envision Dublin Community Plan. This includes preservation of existing mature tree rows and stands of trees.

There are existing mature tree rows along the east/west property lines within ID-6. Existing stands of trees shall be protected-in-place in their entirety. When existing mature trees are located within the perimeter area, mounding may be omitted/interrupted and the existing trees should be utilized to achieve the required screening. Total amount of required screening will still be applicable and, therefore, additional landscape plantings may be necessary to meet the stated requirements.

As illustrated in *Figure 17*, mounds should taper near tree rows to provide a clean, natural transition from mound to tree row (both sides of tree row).



Source: Calvados-Honfleur Business Park, France. La Compagnie du Paysage. :



Source: Thalie Park, France. Urbicus.

Stormwater

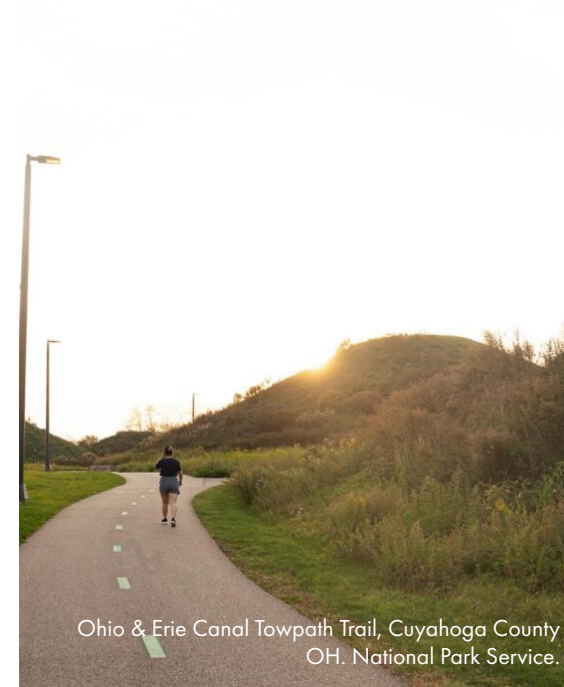
In ID-6, when stormwater is located along Shier Rings Road or Cosgray Road, it is required to be located on the private side of the mound and should be screened by the required mound and planting conditions.

In the case of internal public streets, stormwater should remain on the private side of the screening components, but can be designed/integrated into the landscape setbacks where space allows.

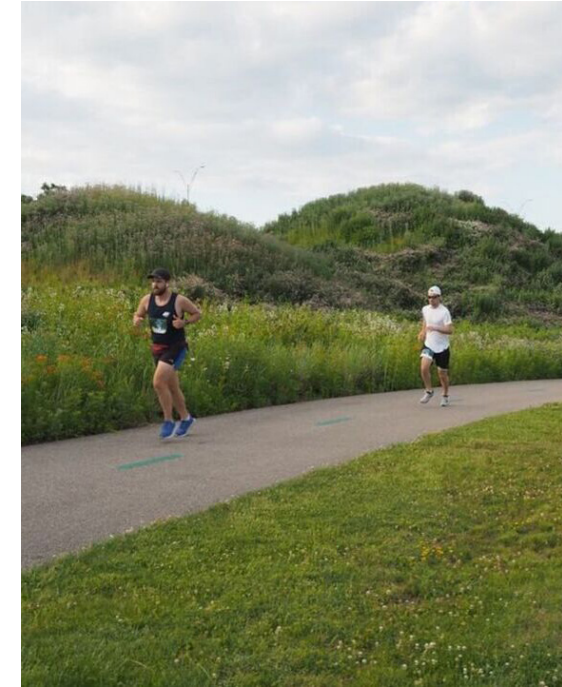
Please note that all other City stormwater regulations for location and proximity to ROW still apply. Additionally, positive drainage will need to be maintained at all times through the required setbacks so that there is no standing water in areas outside of designated stormwater management areas.



Source: Thalie Park, France. Urbicus.



Ohio & Erie Canal Towpath Trail, Cuyahoga County OH. National Park Service.



Shared-Use Paths

Any planned or future multi-use pathways along Cosgray Road and/or Shier Rings Road should align with the described rural character in this design manual. Therefore, public pathways along the edges of ID-6 should undulate and weave in and out of the landscape. In some cases, this may result in pathways weaving out of the public ROW and being integrated into the setback landscape. Pathway alignment should be coordinated with the undulation of the mounds and provide opportunities for smaller mounds and consistent plantings to be interspersed along the pathway. This may require easements for public access - coordination with the City's Engineering Division will be necessary during design.

The widths of shared use paths and sidewalks are to be consistent with Envision Dublin (6-feet for sidewalks, 11-feet for shared use paths).



Source: City of Dublin, OH.

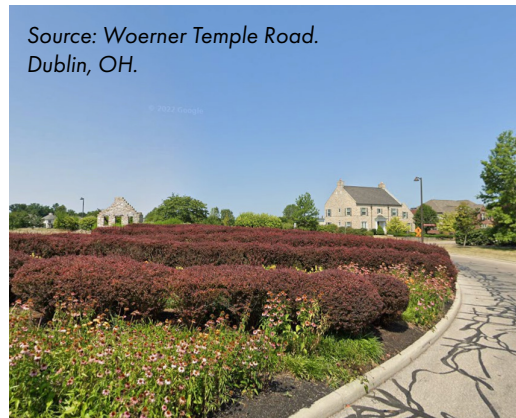
Special Conditions

ID-6

Section 04

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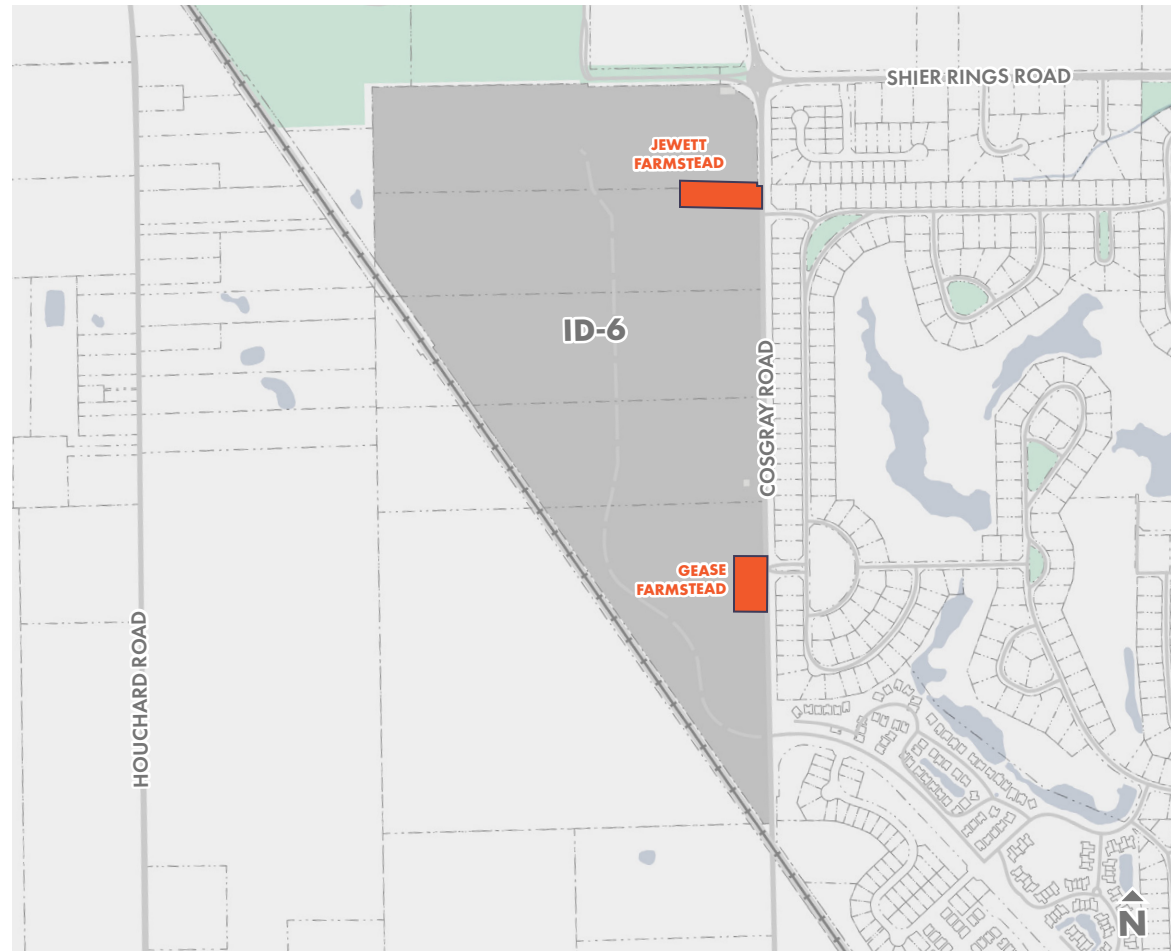


Roundabout at Cosgray Road & Shier Rings Road

As referenced in Section 02, the roundabout at the intersection of Shier Rings Road and Cosgray Road is identified as a gateway moment. **Figure 18** provides a conceptual illustration of the desired condition at the existing roundabout (Shier Rings Road/Cosgray Road intersection) at the northeast corner of ID-6. Additionally, the illustrations on this page provide examples of treatment quality and material considerations. The final design of this gateway corner should be coordinated directly with the City of Dublin Planning Staff in coordination with the extension of Shier Rings Road.

Figure 18





Existing Farmsteads

As described in Section 01, the approaches to planting and design of setbacks within ID-6 are intended to maintain the historic rural and agricultural character of the area, as recommended in the Envision Dublin Community Plan. One key approach to maintaining this condition is the preservation of periodic small structures/uses close to the road (houses, barns,

gas stations, churches, graveyards, etc). Today, two well maintained farmsteads exist within ID-6 along Cosgray Road as identified in the map above.

The Jewett Farmstead is located just south of the Shier Rings Road and Cosgray Road intersection. This property has been acquired by the City of Dublin to ensure proper preservation of the site.

There is an additional farmstead located at the intersection of Cosgray Road and Barronsmore Way that consists of an existing farmhouse and barn.

Enhanced screening approaches are required around the northern, southern, and western edges of the existing farmsteads. Similar to the Local Streets condition along roadways, the enhanced side yard screening should utilize dense planting with a mix of native evergreen and deciduous trees and grasslands for year-round screening and interest. Additionally, small mounding should be incorporated where possible (4-6' height in consistency with the screening character along Cosgray Road. The intent is to provide a minimum of 75% opacity screening between ID-6 development and the existing farmsteads to avoid any harsh windows into development and to preserve the rural character of the existing farmsteads. Screening around the farmsteads should be coordinated with the City through the plan approval process.

Figure 19 provides a conceptual illustration of the future condition of the Jewett Farmstead and the desired screening of ID-6.



Figure 19

Conceptual Illustration of Future Jewett Farmstead & Intended Screening Character

Cosgray Road Entry Drives

The following standards apply to primary vehicular entry drives for employees and visitors. Primary entry drives and service drives should be avoided along Cosgray Road when possible. In coordination with the City, access from Cosgray Road should only be considered if access is unable to be provided via alternative streets.

Service drive standards should be referenced in the City of Dublin's codified ordinance.

- Width: drives shall be a maximum of 24' wide.
- Radii of curbing from entry drive to road should be 25' maximum.

- Entry drives should curve within the setback dimension to allow for overlapping mound condition (visually), provided maximum screening into the site. An example of this condition is provided through **Figure 20** on the following page.
- To retain the required mound height when there are breaks in the mound for entry drives, stepped retaining walls with limestone veneer should be implemented with a maximum of 12' distance between retaining wall and drive.
- **Stepped Retaining Walls:** Limestone veneer should be Great Lakes Limestone per Dutch Quality Stone (Beige color) or approved

equal. Stones should be placed in a random Ashlar pattern similar to Avery-Muirfield Bridge over U.S. 33/S.R. 161 in Dublin, OH. Reference City of Dublin Standard Construction Drawings for limestone veneer specifications.

- Pathway adjacent to entry drive should be 4' wide minimum, and 6' wide maximum.

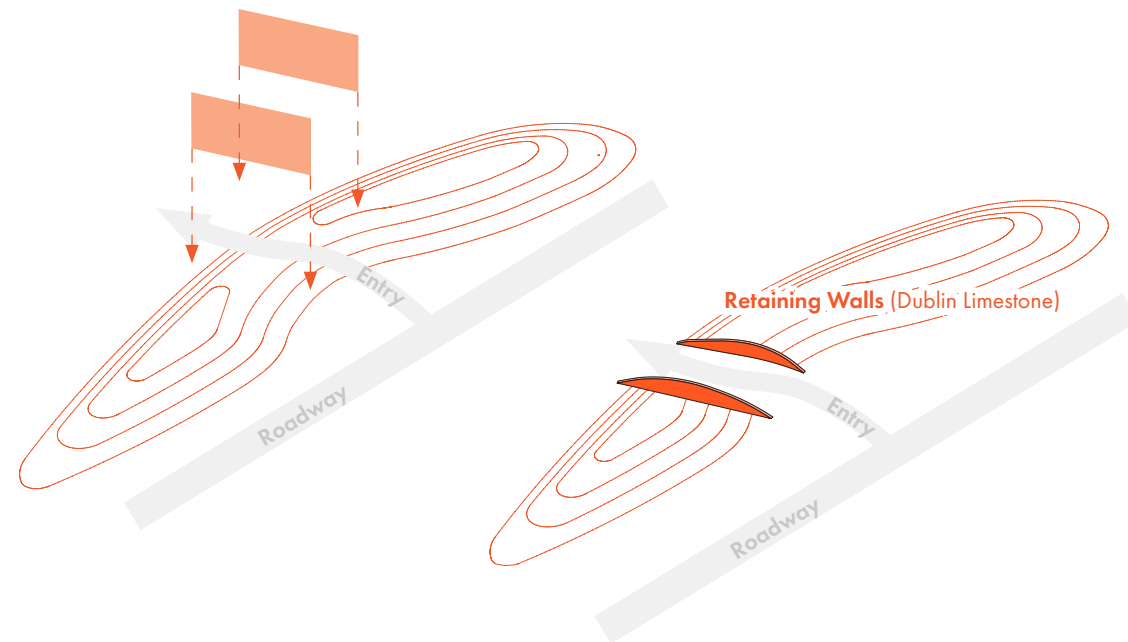
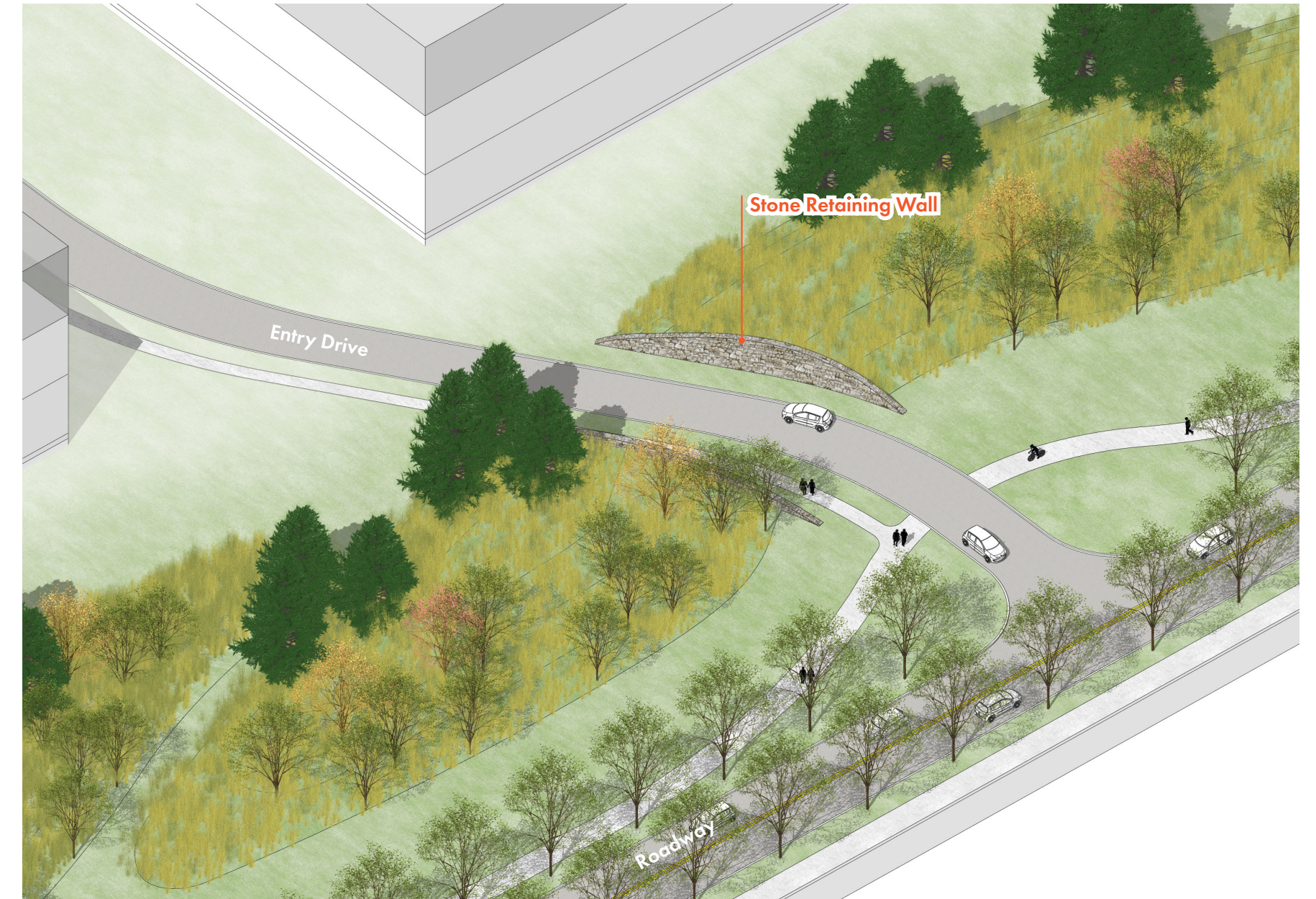
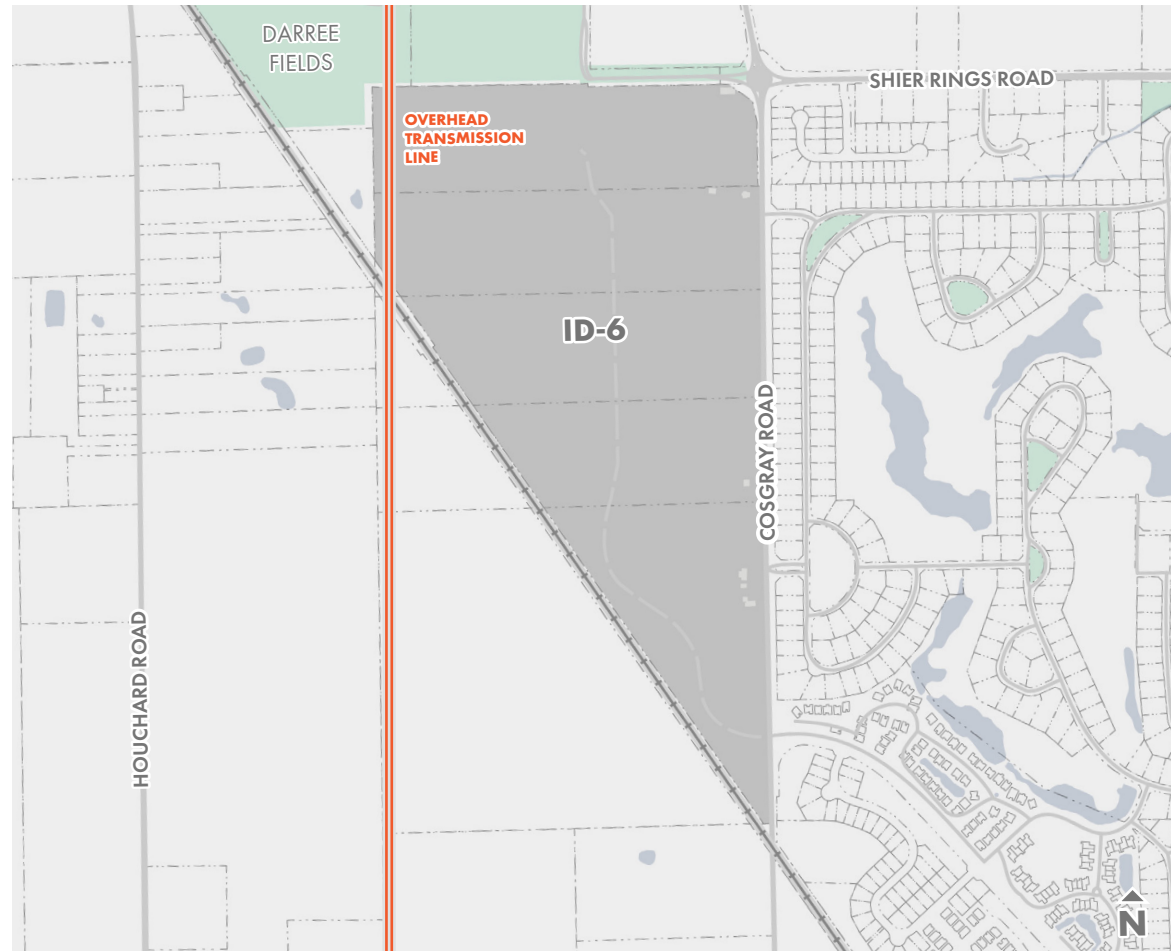


Figure 20. Primary Entry Drive Approach - Example Condition





Existing Overhead Transmission Line

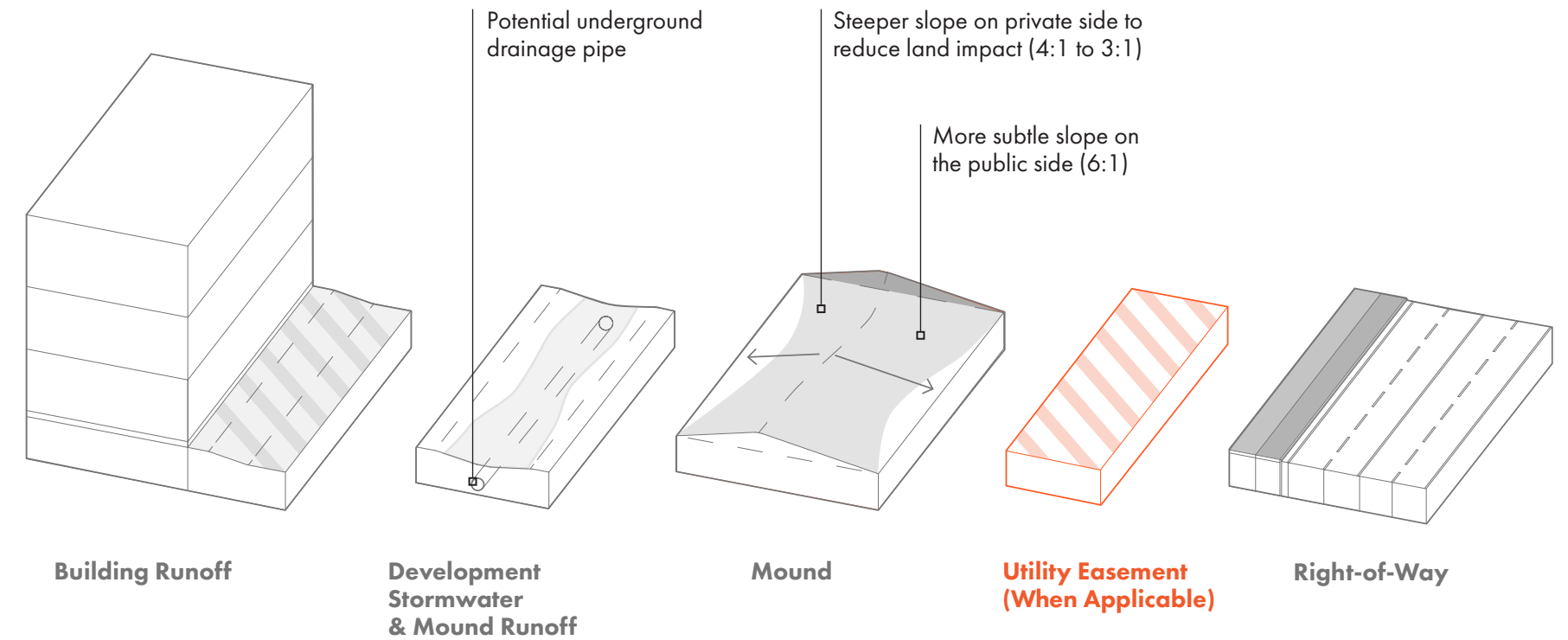
Utility Easements

In certain circumstances there may be existing utility easements to work around, or the need for a new or modified utility easement within the required setback. In these instances, there will need to be coordination with both the City of Dublin and any applicable public/private utility companies to coordinate details and impact on mound and planting requirements.

Figure 21 Highlights an instance of an existing overhead transmission line. This line is within the ID-6 boundary and will require the land owner to coordinate directly with the City of Dublin and applicable utility companies to discuss transmission line infrastructure placement and impact on mounding and plant typologies along Shier Rings Road. At a minimum, no mow grass should be planted along the entirety of the mound within this easement, and all other planting guidelines should be followed as allowed by applicable utility companies.

Figure 21. Existing Overhead Transmission Line

Figure 22. Setback Components



As illustrated in Figure 22, in cases where underground utility easements are adjacent to required roadway mounding, the easement should be located between the public ROW and the base of the mound. When possible, the mound should not overlap the easement to allow for easier, less disruptive access to utilities.

Additionally, no manholes or cleanouts should be placed within the mounds. In cases where underground pipes have to cross under the required mounding, placement of manholes

and access points are to be coordinated such that they are not located within the limits of the grading for the mounds. If possible the piped infrastructure (sanitary sewer and storm sewer) should be located where the mounds are lower, such as within overlapping areas where one mound is decreasing in height and the next is increasing. This will require coordination with the City's Engineering Division during detailed site design.

Landscape Planting

ID-6

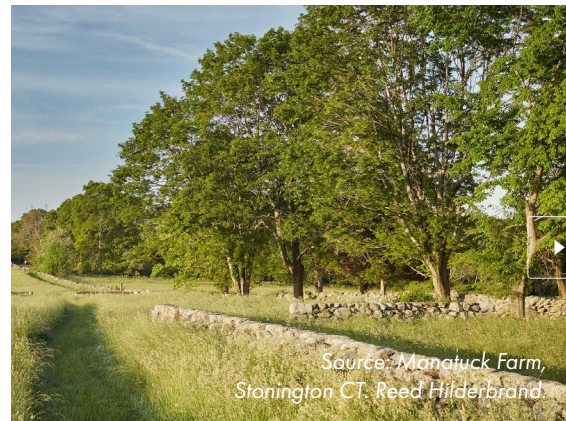
Section 05

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Source: Roaring Brook, East Haddam CT, Reed Hilderbrand



Source: Manatuck Farm, Stonington CT, Reed Hilderbrand

Landscape Planting Guidelines

Landscape Intent

Cultivate a naturalized rural appearance with planting and mounding that shifts in density and character based on adjacency. Landscape planting shall prioritize conditions that ensures long term health of vegetation and supports biodiversity and local ecology.

Species Diversity

Buffer plantings shall consist of no more than 10% of any one species, 20% of any one genus, and 30% of any one family to support an urban tree canopy population. See the Species Selection list in this section for approved planting.

Installation Sizes

Tree sizes to be mixed in at least three different sizes ranging from 2" to 3" caliper for deciduous trees and 12-14' height for evergreen trees. No more than 50% of deciduous trees shall be 2" caliper, and no more than 50% of evergreen trees shall be 12' height.

Planting Layout

Trees

Tree spacing shall vary randomly in a staggered pattern between 6' and 10' on-center to achieve a naturalized appearance. A minimum of 30 trees shall be provided per 100 linear feet of setback.

Meadow Mix

Meadow Mix shall be under-planted beneath tree groupings on mounds or among drifts of tree stands. See [Figure 14](#).

Shrubs

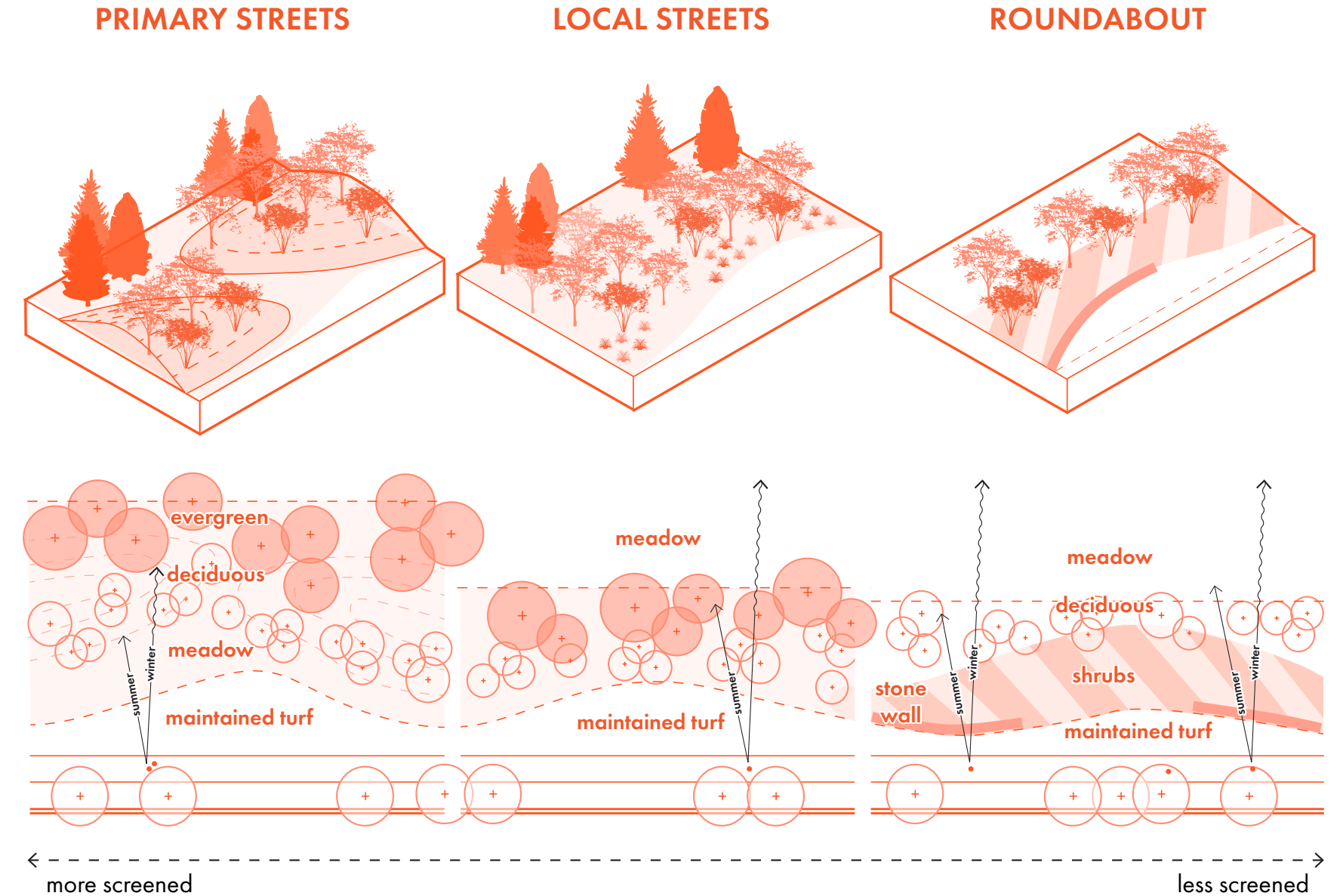
At key intersections and the Shier Rings Road and Cosgray Road roundabout, shrub planting shall be implemented in graphic rows utilizing at least 5 species. See [Figure 14](#) and Species Selection.

Opacity Requirements

Year-round opacity shall be achieved through layered planting and landforms. Trees should be planted in informal clusters that vary in density based on screening goals.

Residential adjacencies in areas such as ID-6 should reach 100% year round coverage, while commercial and public edges may allow partial opacity if headlight and parking screening are maintained through low shrub planting. These plant materials must meet height and opacity requirements within four years of installation.

Figure 23. Planting Strategies



Species Selection

COSGRAY ROAD

Trees

Abies concolor - White fir
Juniperus virginiana - Eastern red cedar
Picea abies - Norway spruce
Picea glauca - White spruce
Pinus strobus - White pine
Pseudotsuga menziesii - Douglas fir
Thuja occidentalis - Western red cedar
Thuja plicata x *T. standishii* - Green giant arborvitae
Tsuga canadensis - Canadian hemlock
Thuja occidentalis - Western red cedar

Acer saccharum - Sugar maple*
Liriodendron tulipifera - Tulip tree
Gleditsia triacanthos var. *inermis* - Thornless honeylocust
Celtis laevigata - Sugar hackberry
Celtis occidentalis - Hackberry "Prairie Pride"

Meadow Mix

See "Meadow Mix" section.

Grasses (maintained)

See "Maintained Turf Mix" section.

SHIER RINGS ROAD + LOCAL ROADS

Trees

Abies concolor - White fir
Picea abies - Norway spruce
Picea glauca - White spruce
Pseudotsuga menziesii - Douglas fir
Thuja occidentalis - American arborvitae
Thuja plicata x *T. standishii* - Green giant arborvitae

Acer x freemanii - Freemanii maple (Red/Silver Maple Cross)*
Acer nigrum - Black maple*
Acer saccharum - Sugar maple*
Betula nigra - River birch
Cercidiphyllum japonicum - Katsuratree
Nyssa sylvatica - Black tupelo/Black gum
Platanus x acerifolia - London planetree
Prunus sarangetii - Sargent cherry
Quercus bicolor - Swamp white oak
Quercus rubra - Northern red oak
Taxodium distichum - Bald cypress

Meadow Mix

See "Meadow Mix" section.

Grasses (maintained)

See "Maintained Turf Mix" section.

ROUNDABOUT

Trees

Abies concolor - White fir
Picea abies - Norway spruce
Picea glauca - White spruce
Pseudotsuga menziesii - Douglas fir
Thuja occidentalis - Western red cedar
Thuja plicata x *T. standishii* - Green giant arborvitae

Aronia melanocarpa - Black chokeberry
Crataegus species - Hawthorn "Winter King", "Ohio Pioneer"
Chionanthus virginicus - White fringetree
Cornus mas - Corneliancherry dogwood
Halesia carolina - Carolina silverbell
Koelreiteria paniculata - Goldenraintree

Ostrya virginiana - American hophornbeam
Prunus sarangetii - Sargent cherry

Meadow Mix

See "Meadow Mix" section.

Grasses (maintained)

See "Maintained Turf Mix" section.

Shrubs

Aesculus parviflora - Bottlebrush buckeye
Aronia spp. - Chokeberry
Buxus microphylla - little leaf boxwood
Buxus sempervirens - common boxwood
Cephalanthus occidentalis - buttonbush
Cornus racemosa - gray dogwood
Chamaecyparis obtusa - falsecypress
Ilex verticillata - winterberry holly
Itea virginica - Virginia sweetspire
Juniperus chinensis (many cultivars) - chinese juniper
Juniperus scopulorum (many cultivars) - rocky mountain juniper
Lindera benzoin - spicebush
Myrica pensylvanica - Northern bayberry
Salix spp. - shrub willows
Taxus x media (many cultivars) - Yew
Thuja occidentalis (many cultivars) - Arborvitae
Vaccinium angustifolium - lowbush blueberry
Viburnum acerifolium - mapleleaf viburnum

MEADOW MIX

- Meadow Mix shall be:
 - 20% Aruba or Audubon creeping red fescue
 - 20% J5 chewings fescue

- 20% Prairie dropseed
- 20% Marco Polo sheeps fescue
- 20% annual ryegrass

Application rate shall be 225 lbs per acre.

- Plant seed with "Brillion" type landscape seeding machine that accurately places seed at specified depth and rate and rolls in single operation. Plant seed no deeper than ½ inch. Hydroseeding of meadows is not permitted.
- Plant seed with slit seeder in areas that have been previously graded and seeded with annual ryegrass for erosion control. Plant seed no deeper than ½ inch.
- Apply fertilizer at time of seeding and 30 days after seeding. Use starter fertilizer, 1-2-1, that will provide actual phosphorus of at least 1.5 lbs/sq. ft.
- Maintain meadow no less than 12 months after planting.
- Mow meadow as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of the grass height. Remove no more than 1/3 of grass leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain a height of 3.5 to 4 inches. Do not mow after 12 months from planting completion.
- Apply 2 applications of a broad spectrum, 3-way selective herbicide to meadow within 12 months after planting. Schedule first application no earlier than 6 months after planting.



Source: Canadian hemlock stand, Missouri Botanical Garden.



Source: Rowdy Meadow, Hunting Valley OH. Reed Hilderbrand

MAINTAINED TURF MIX

- The turf mix shall be:
 - 80% 2 of 3 Tall Fescue
 - 10% Kentucky Blue Grass
 - 10% Perennial Ryegrass
- Application rate shall be 225 lbs per acre.

General Planting Guidelines

Trees

- Trees over 3" caliper shall be nursery tagged by a landscape architect. Trees under 3" caliper shall be visually inspected with representative photographs by a landscape architect.
- Width of tree planting hole for trees shall be 3 times the diameter of the root ball. Bottom and sides of the tree hole shall be loosened prior to planting.
- Depth of tree planting hole shall be 1.5 times the depth of the root ball, minimum. Container grown or balled and burlapped trees shall be planting on a compacted mound of #57 stone.
- All sides and grades of plant material shall be in accordance with the American Standard for Nursery Stock (latest edition), published by the American Nursery and Landscape Association Standards.

Woody Shrubs

- Representative photos of woody shrubs shall be approved by a landscape architect.
- Woody shrub beds shall be staked for approval by a landscape architect.
- Shrub beds shall be a continuous excavation to the depth of the deepest rootball in the shrub bed. Bottom and sides of shrub bed excavation shall be loosened prior to planting.
- All sizes and grades of plant material shall be in accordance with the American Standard for Nursery Stock (latest edition), published by the

American Nursery and Landscape Association standards.

Meadow Mix

- Mixes shall be pre-packaged at the specified species percentages and applied at rates consistent with the seed supplier's recommendations.
- Bed preparation shall be in accordance with seed supplier's recommendations.

Planting Soils

- Planting soils shall be a mix of three components: topsoil, organic amendment, and sand.
- Topsoil: central Ohio topsoil with a USDA texture classification of clay loam or loam and a pH of 5.5 to 7.0.
- Organic Amendment: composted yard debris (green waste) compost with a pH of 7.2 to 8.0
- Sand: ASTM C33 concrete sand.
- The three components shall be blended into a the following ratio: 4 parts sand, 2 parts topsoil, 1 part compost.

Landscape Maintenance

Trees

- January: Check trunks for rodent damage. Treat appropriately if damage is present. Selectively hand prune limbs to repair, remove damaged limbs, or to 'limb-up' canopy (provided temps are >32 degrees). Do not prune evergreen trees unless necessary for damage repair. Use dormant oils for pest management as required for insect control provided temps remain >32 degrees for 24 hours or more.
- February: If there's evidence of an insect infestation, dormant horticultural oils are effective as a dormant application – temperatures must be >32 for 24 hours after application to be effective.
- March: Selectively hand prune limbs to repair, remove damaged limbs, or to 'limb-up' canopy (provided temps are >32 degrees). Do not prune evergreen trees unless necessary for damage repair. Install any new container grown or B&B trees.
- April: Inspect for potential pest problems at 2 week intervals – document all findings. Remove any/all dead or damaged branches or limbs. Install any new container grown or B&B trees. Closely monitor newly planted trees to ensure root ball has the proper moisture content. Apply mulch tree rings to trees in plant beds and turf areas. Provide 2"-3" depth throughout entire tree ring. Pull mulch 2" away from trunk to prevent mold and rotting.
- May: Weed mulch tree rings as required. Continue bi-monthly inspections for pest/disease problems. Closely monitor newly planted trees to ensure root ball has the proper moisture content.
- June/July: Irrigate trees if needed in the early morning hours to prevent evapotranspiration. Trim/remove unwanted limbs from trees as required. Monitor for weed / insect / and disease problems – control as needed. Use pheromone traps to help determine insect problems. Closely

monitor newly planted trees to ensure root ball has the proper moisture content. Provide 1" water per week (supplement natural rainfall with irrigation as needed).

- August: Maintain 2-3" depth mulch tree rings for trees in plant beds and turf areas. Pull mulch 2" away from trunk to prevent mold and rotting. Weed mulch tree rings as required.
- September: Pesticide application is not recommended at this time unless for heavy infestations. Plan for container grown shade trees and evergreens that can be planted in the fall (Oct./Nov.).
- October: Fertilize using a granular fertilizer with slow release nitrogen – a 4:1:2 ratio is appropriate – Broadcast over entire root zone / dripline (if root zone includes turf do not exceed 2lbs of nitrogen / 1000 sf).
- November: Monitor for weed / insect / and disease problems – control as needed. Remove any diseased / damaged / or dead branches. If there's evidence of an insect infestation, dormant horticultural oils are effective as a dormant application – temperatures must be >32 for 24 hours after application to be effective. Renew mulch tree rings - provide 3" depth for trees in plant beds and turf areas. Pull mulch 2" away from trunk.
- December: Monitor for signs of pest problems and desiccation from winter winds. Plants that routinely show dissection may be treated with an application of wilt proof to reduce damage. More than one treatment is detrimental. Plants with reoccurring problems should be removed.

Shrubs

- January/February: Remove wind driven leaves from shrub beds.
- March: Remove wind driven leaves from shrub beds. Inspect for potential pest problems at 2 week intervals- document all findings.
- April: Inspect for potential pest problems at 2 week intervals- document all findings. Edge all shrub beds by hand spade or other acceptable method. Hand prune as needed – use standard horticultural practices when pruning. Shearing is not acceptable. Selectively hand prune non-spring flowering shrubs as required. Apply granular pre-emergent control to shrub beds. Apply mulch to shrub beds. Provide 2"-3" depth within bed.
- May: Hand prune as needed (see April). Closely monitor newly planted shrubs to ensure root ball has the proper moisture content. Remove weeds from beds weekly. Continue bi-monthly inspections for pest/disease problems.
- June: Hand prune as needed (see April). Monitor for weed / insect / and disease problems – control as needed. Use pheromone traps to help determine insect problems. Closely monitor newly planted shrubs to ensure root ball has the proper moisture content. Remove weeds from beds weekly.
- July: Monitor potential weed / insect / and disease problems – control as needed. Closely monitor newly planted shrubs to ensure root ball has the proper moisture content. Pre-emergent herbicide may be used to control weeds in beds. Remove weeds from beds weekly.
- August: Large shrubs should be pruned if necessary to maintain desired character (except for summer/fall flowering species). Monitor for weed / insect / and disease problems – control as needed. Closely monitor newly planted shrubs to ensure root ball has the proper moisture content.

Pre-emergent herbicide may be used to control weeds in landscape beds. Maintain a 2"-3" of mulch in all shrub beds. Remove weeds from beds weekly.

- September: Monitor for weed / insect / and disease problems – control as needed. Pesticide application is not recommended at this time unless for heavy infestations. Maintain a 2"-3" of mulch in all shrub beds. Remove weeds from beds weekly. Remove early fall leaves and other debris from plant beds. Apply pre-emergent herbicide for control of winter annuals.
- October: Fertilize using a granular fertilizer with slow release nitrogen – a 4:1:2 ratio is appropriate – Broadcast over entire shrub bed. Remove fallen leaves to prevent damage of turf.
- November: Monitor for weed / insect / and disease problems – control as needed. Remove any diseased / damaged / or dead branches. If there's evidence of an insect infestation, dormant horticultural oils are effective as a dormant application – temperatures must be >32 for 24 hours after application to be effective. Renew mulch at shrub beds - provide 2-3" depth.
- December: Monitor for signs of pest problems and desiccation from winter winds. Plants that routinely show dissection may be treated with an application of wilt proof to reduce damage. More than one treatment is detrimental. Plants with reoccurring problems should be removed.

Meadow

- April (late): Apply 3-way selective herbicide to control weed populations - Do not apply pre-emergence to areas that need overseeded. Overseeding can take place in April for severe bare areas at rate of 4 lbs / 1000sf - slice seed or seed-a-vator method. (Note: Fall overseed is preferred)
- May: Mow at 4" height (Single Mow).
- June - September: No mowing to occur
- September: Fertilize with 1-1-1 ratio NPK at 1.0

lb actual per 1000 sf. - Apply with broadcast spreader.

- October (early): Mow at 4" height (Single Mow). Overseed thin areas at rate of 4 lbs / 1000sf - slice seed or seed-a-vator method
- November (late): Fertilize with 1-1-1 ratio NPK at 1.0 lb actual per 1000 sf. - Apply with broadcast spreader.

Turf

- January/ February/March: Minimize salt damage along walks and drives. Remove any wind driven leaves from lawns/beds.
- April: Test soil PH. Turf areas should maintain PH levels between 6.2-7.0. Apply lime to increase PH as needed. Apply chemical pre-emergents as needed after soil temps reach 55 degrees and crabgrass begins to germinate. If season is advanced, begin mowing. First cut should be slightly shorter than normal (3"ht.) to encourage greening. Trim turf along all walks and road edges as required – DO NOT line trim around tree trunks. Core aerate prior to fertilization / lawn renovations. Avoid rolling of turf; this causes compaction/poor root development; it should be avoided unless excessive heaving has taken place. Overseed turf areas after aeration to increase lawn density and crowd out aggressive weeds.
- May: Maintain turf at 3" height by mowing as needed-removing not more than 1/3 of the blade length in a single mowing. Treat disease with appropriate fungicide if damage is extensive. Check for soil insects - document all findings. Treat as necessary. Spring Fertilization: Memorial Day; fertilize at 1 lb nitrogen / 1000 sf. or as required by soil analysis.
- June: Maintain turf at 3" height by mowing as needed-removing not more than 1/3 of the blade length in a single mowing. Treat disease with appropriate fungicide if damage is extensive.

Monitor turf for broadleaf weeds (ground ivy, plantain, dandelion, etc.) and apply chemical weed killers as needed. New seeded lawn areas require the top 1/4" to remain moist – a thin layer of hydro mulch will help to keep soil from drying out. New sod should be kept moist for 4-5 weeks or until firmly rooted.

- July: Maintain turf at 3" height by mowing as needed-removing not more than 1/3 of the blade length in a single mowing. Frequency may decrease during this time due to heat stress. Treat disease with appropriate fungicide if damage is extensive.
- August: Maintain turf at 3" height by mowing as needed-removing not more than 1/3 of the blade length in a single mowing. Frequency may decrease during this time due to heat stress. Treat disease with appropriate fungicide if damage is extensive. Core aerate prior to fertilization / lawn renovations. Monitor turf for insect and disease problems – Grubs are typical during this month. Cut section of lawn and examine roots for young grubs. Treatment is necessary at populations of 4 grubs / sf.
- September: Summer Fertilization: Labor Day; fertilize at 1 lb nitrogen / 1000 sf. or as required by soil analysis. Maintain turf at 3" height by mowing as needed-removing not more than 1/3 of the blade length in a single mowing. Frequency may decrease during this time due to heat stress. Treat disease with appropriate fungicide if damage is extensive. Over-seed all bare areas – Rake bare soil and amend with three cubic yards of finely screened compost / 1000 sf. Broadcast seed and hand rake into top 1/4" topsoil. Monitor turf for broadleaf weeds (ground ivy, plantain, dandelion, etc.) and apply treatments as needed.
- October: Maintain turf at 3" height by mowing as needed-removing not more than 1/3 of the blade length in a single mowing. Treat disease with appropriate fungicide if damage is extensive.

Continue monitoring turf for broadleaf weeds (ground ivy, plantain, dandelion, etc.) and apply treatments as needed. Fall Fertilization: Late October; fertilize at 1 lb nitrogen / 1000 sf. or as required by soil analysis.

- November: Remove fall leaves from turf to prevent damage. Reduce mower cutting height to 1 1/2" for last cut of the season – to reduce chance of snow mold and winter burn. Apply spot applications of broadleaf herbicides as required.
- December: Complete any leaf removal to prevent damage to turf.

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