

# Valentine, Nebraska Main Street Landscape Enhancement Package

Project Partners: City of Valentine, NE / Valentine Economic Development Board /  
University of Nebraska - Lincoln, Department of Landscape Architecture /  
Rural Futures Institute / Nebraska Extension





# Summary

The Nebraska Department of Transportation (NDOT) and the city of Valentine, Nebraska are beginning the repavement and underground utility renovation of Highway 83 / Main Street in the spring of 2021. The multi-million dollar improvement project will repave the 5 blocks of Main Street from Highway 20 north to the corner of 4th street from storefront to storefront. University of Nebraska-Lincoln Landscape Architecture Faculty Member Kim Wilson and landscape architecture student designer Austin Arens have worked with leadership and members of the community since January of 2018 to advocate for and design a pedestrian-focused streetscape as part of the renovation plans. Wilson and Arens have worked with NDOT and Olsson and Associates, the project engineer, to implement a improved lighting system, concrete and sidewalk enhancements, landscape areas, and street furnishings. Funding for the additional services and streetscape enhancements was approved in July of 2019, and the supporting construction documents were submitted and approved in early spring on 2020.

The design intent of the following landscape plan was to concentrate plant material at urban core intersections of 1st - 3rd Streets. Accent tree planting accompanied by a mix of native shrubs, perennials, and grasses are intended to provide color, texture, and shade while being low-maintenance and environmentally tough. Street tree plantings in mid-block areas are hardy, proven street tree species that will be able to tolerate harsh soil conditions. These trees relate to the alternating lighting pattern and will provide shade and an increase the comfortability of pedestrians.

The following landscape plans were designed by Austin Arens with the help of UNL Faculty Members Kim Wilson and Kim Todd. Consultation and support were also provided by local nurseries, Valentine community members, and the Nebraska Statewide Arboretum.

## Goals + Objectives

### Improve the pedestrian and natural environment

- implement landscape bumpouts and accent trees at intersections
- plant mid-block shade trees with ground cover plantings to soften midblock street conditions

### Emphasize intersections as social, active, pedestrian hubs

- concentrate planting at major intersections
- choose plant material that adds color, texture, and energy to corner seating and social spaces

### Showcase Valentine's unique environment downtown for tourists and residents

- think local and native in all plant material, artwork, and street furniture
- emphasize Valentine's sense of place using "River, Ranch, and Reservation" as guiding principles for plant material, lighting, furnishings, and art downtown





# Site Location + Conditions

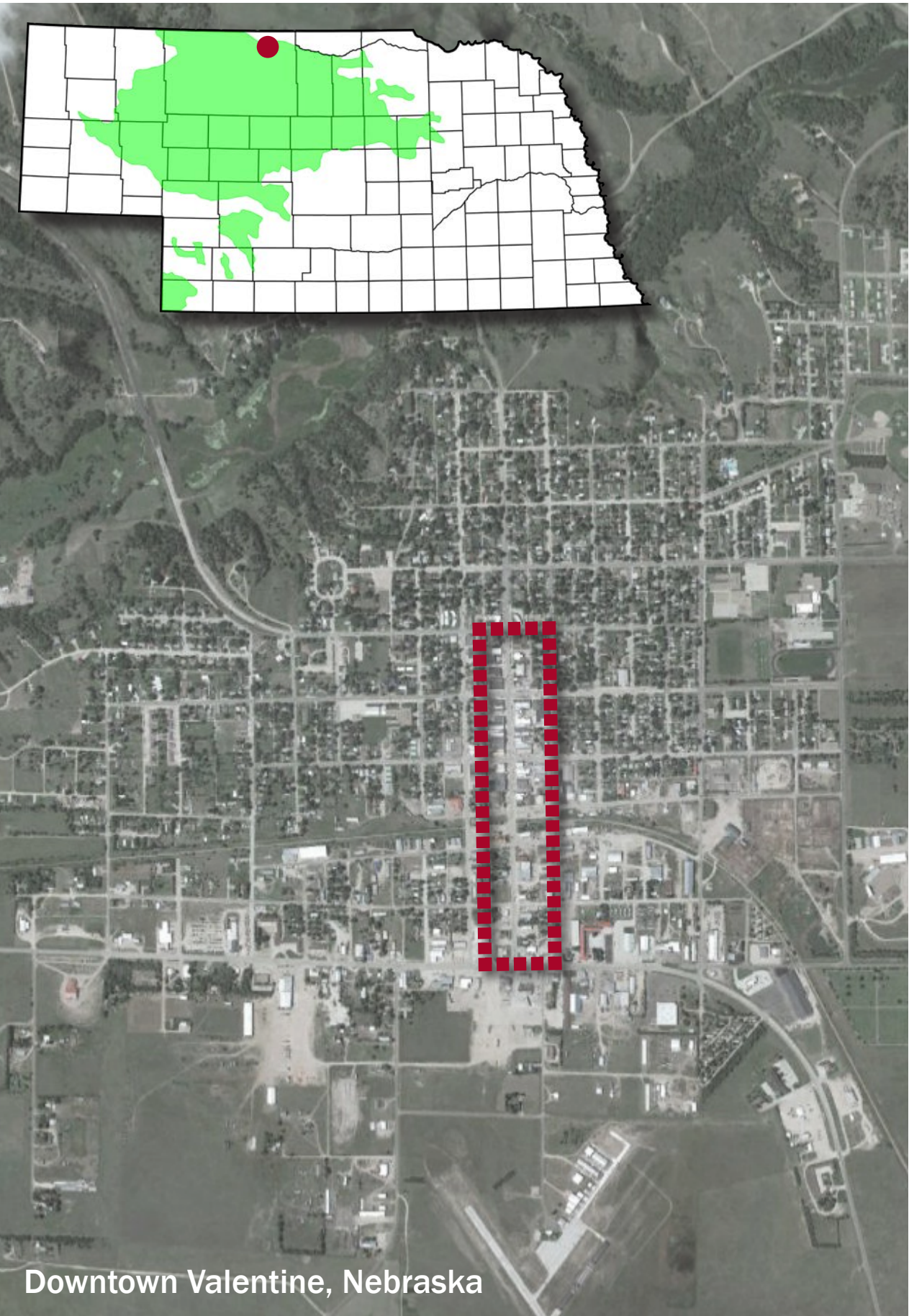
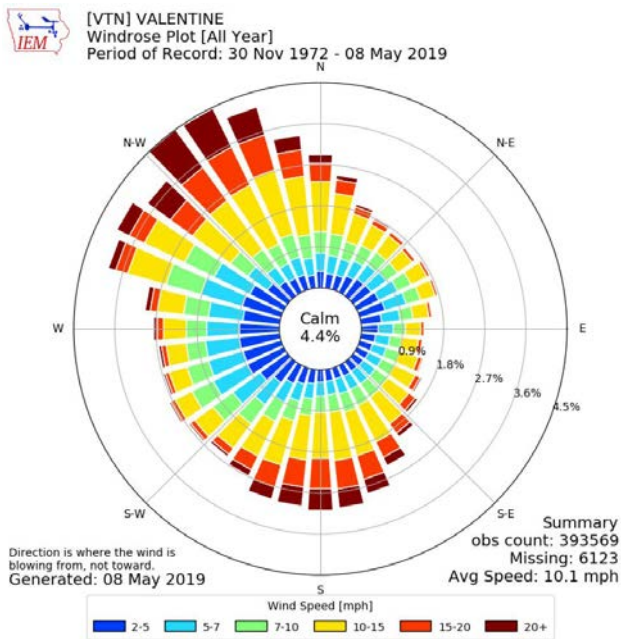
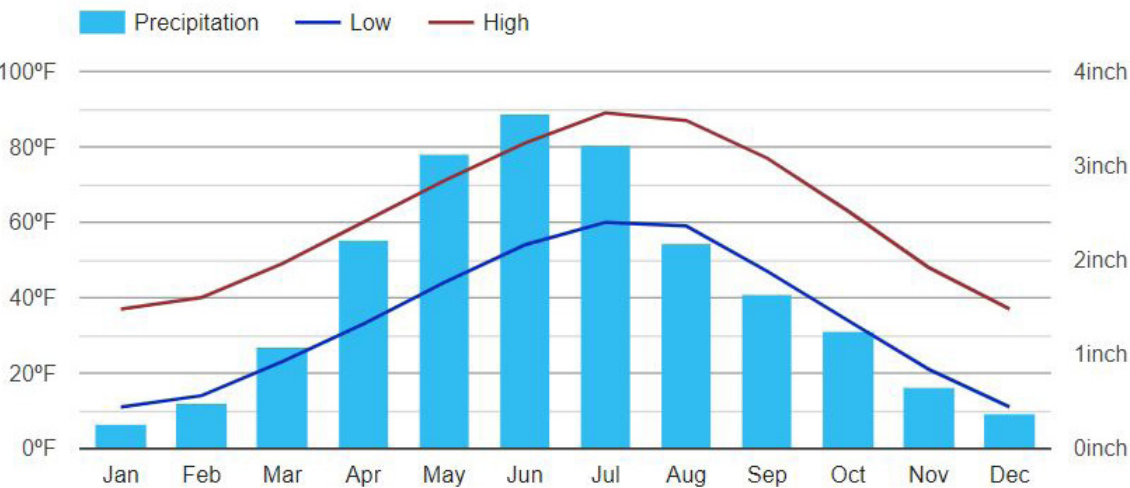
## Soils:

HWY 20 to B Street – 4814 – Valentine loamy fine sand – very well drained, depth of over 80 inches, 0-3% slopes  
B Street to 2nd Street – 4485 – Dunday loamy fine sand – very well drained, depth of over 80 inches, 0-3% slopes  
2nd Street to 4th Street – 9001 – Anselmo fine sandy loam – well drained, depth of over 80 inches, 0-3% slopes

Altitude: 2595 feet above sea level

Plant Hardiness Zone: 4b

Average Annual Precipitation: 20.02” rainfall, 35” snowfall

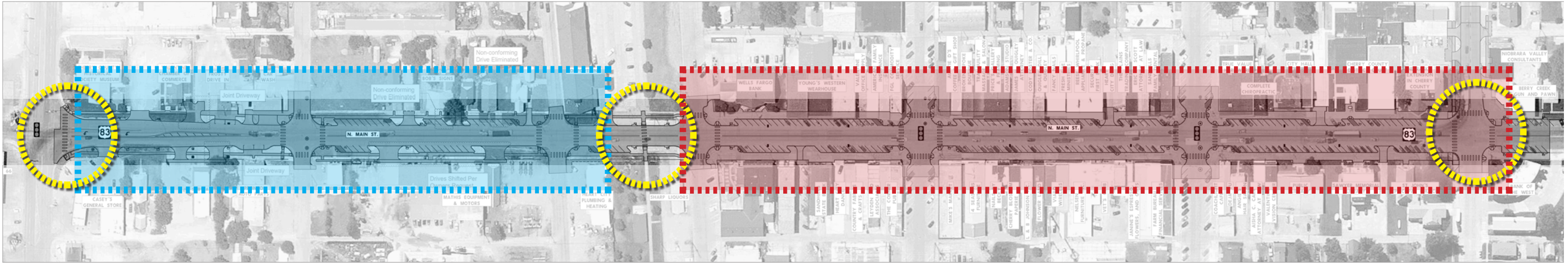
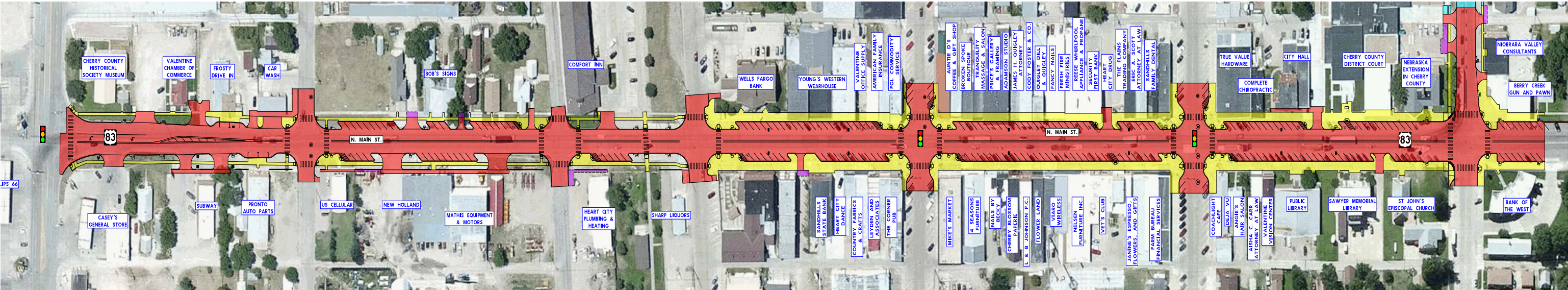


Downtown Valentine, Nebraska





# Framework Plan



*Gateway*      *South Main Street*      *Transition*      *North Main Street*      *Gateway*



## Shade Trees



Relict bur oak  
*Quercus macrocarpa* 'Relict'



Espresso Kentucky coffeetree  
*Gymnocladus dioica* 'Espresso'



Skyline honeylocust  
*Gleditsia triacanthos inermis* 'Skyline'

## Accent Trees



Prairie Gold aspen  
*Populus tremuloides* 'NE Arb'



Renaissance Reflection paper birch  
*Betula papyrifera* 'Renci'





Shrubs



**Tiger Eyes staghorn sumac**  
*Rhus typhina* 'Baltiger'



**Alleman's Compact dogwood**  
*Cornus sericea* 'Alleman's Compact'



**Pawnee Buttes western sandcherry**  
*Prunus besseyi* 'Pawnee Buttes'



**soapweed yucca**  
*Yucca glauca*

Perennials



**pale purple coneflower**  
*Echinacea angustifolia*



**Kobold blazing star**  
*Liatris spicata* 'Kobold'



**Caradonna salvia**  
*Salvia nemerosa* 'Caradonna'



**Wichita Mountains goldenrod**  
*Solidago* 'Wichita Mountains'

Perennials



**prairie coneflower**  
*Ratibida columnifera*





Grasses



Shenandoah switchgrass  
*Panicum virgatum* 'Shenandoah'



prairie dropseed  
*Sporobolus heterolepsis*



Trailway sideoats grama  
*Bouteloua curtipendula* 'Trailway'



Blonde Ambition blue grama  
*Bouteloua gracilis* 'Blonde Ambition'

Grasses




Standing Ovation little bluestem  
*Schizachyrium* 'Standing Ovation'



Indian Steel indian grass  
*Sorghastrum nutans* 'Indian Steel'







SITESCAPES

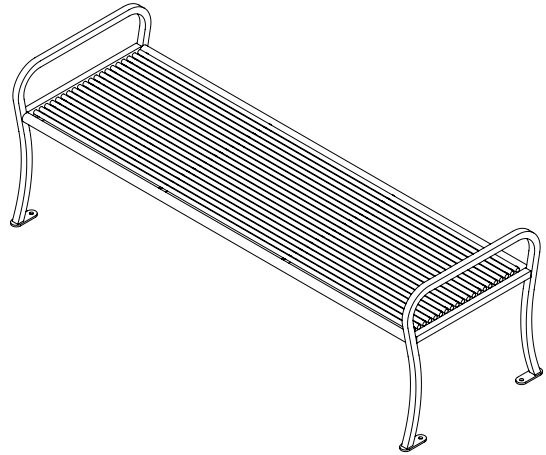
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Lincoln, NE 68542


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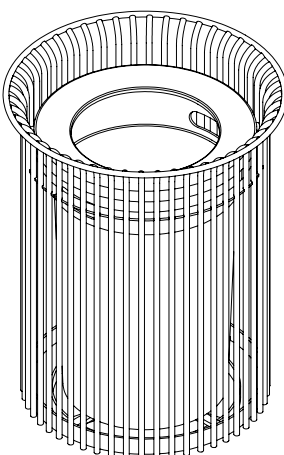
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concrete pavers in gravel



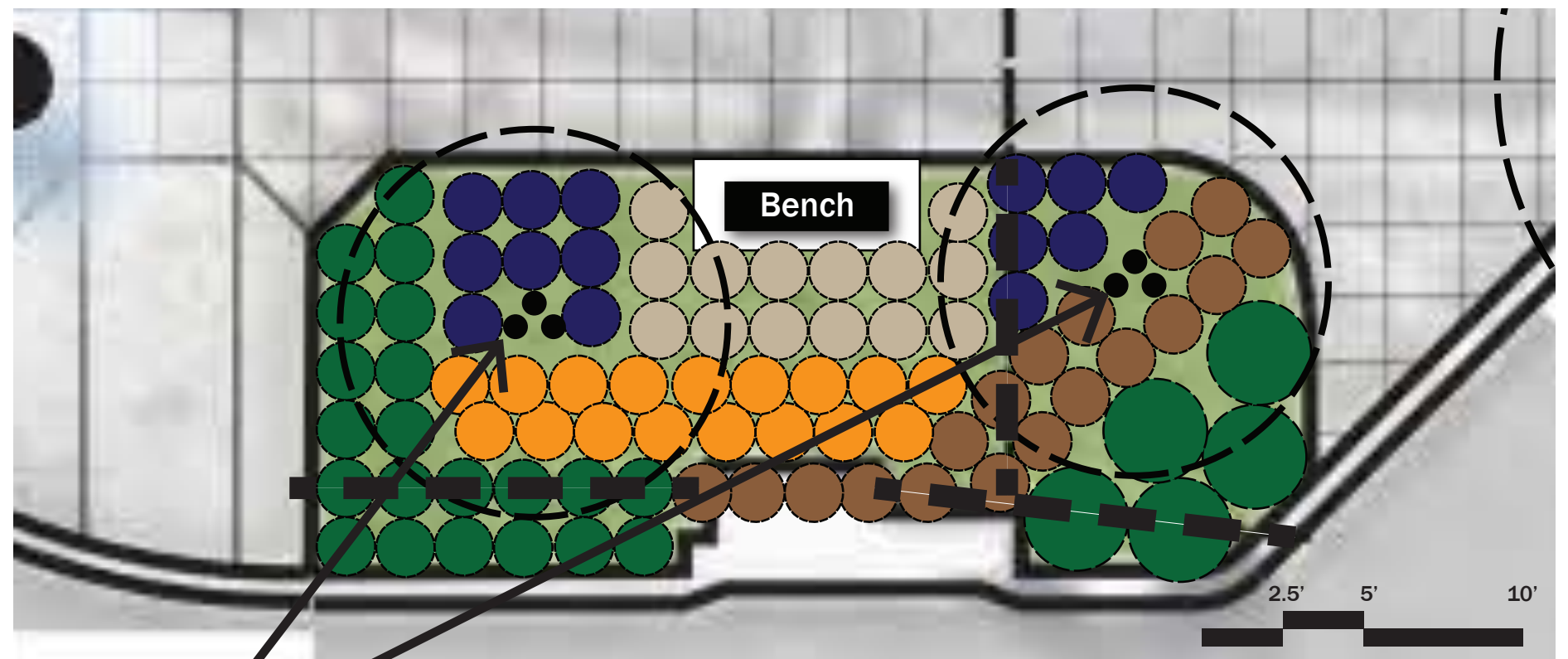
12"x12"x1.5" concrete paver



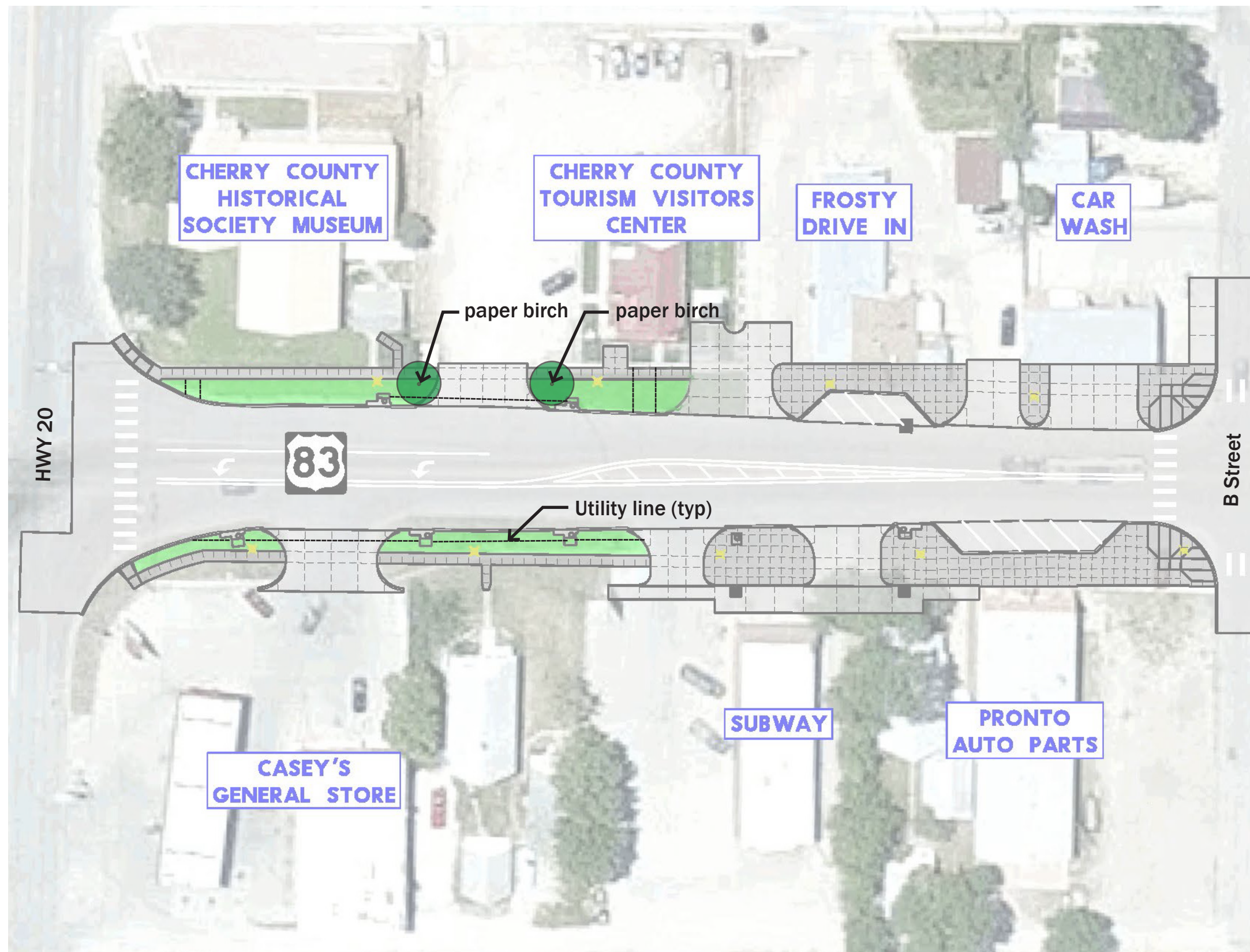
white gravel

Locations for proposed benches or other street furnishings should be inset into existing landscape areas as shown on the intersection planting plans. When bench areas are added they should be constructed with the above materials.

1. Existing landscape material should be removed in proposed bench area.
2. 4-6" of soil should be replaced with compacted layer of sand.
3. 12"x12"x1.5" concrete paver should be set with 1" or less gaps.
4. Fill gaps between pavers with white gravel.
5. Secure bench or other furnishing to paver with bolts.
6. Match end of paver areas to adjacent concrete jointing as shown.
7. Depth of paver area should be no more than 5' into landscape area.



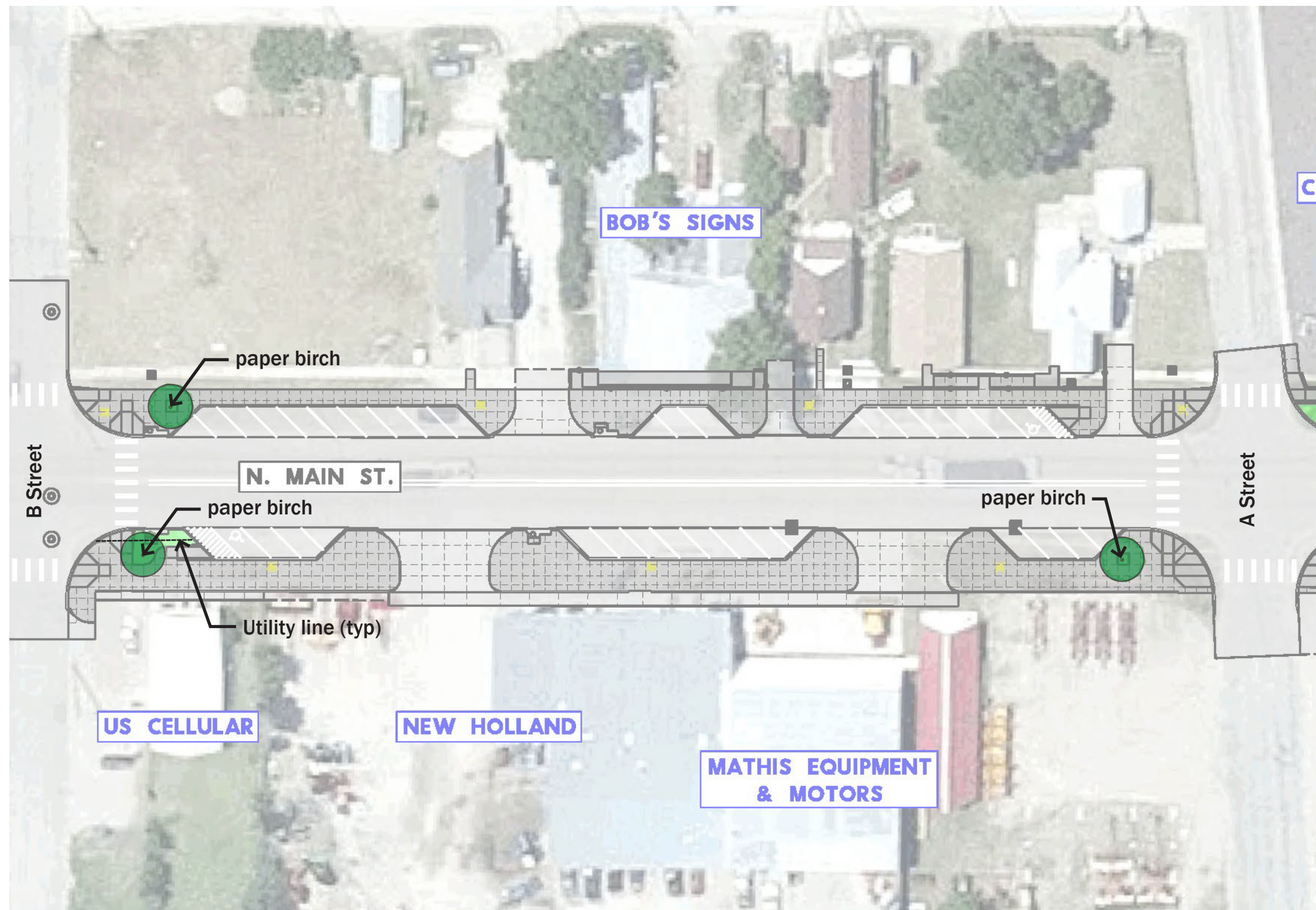




(2) Renaissance Reflection paper birch - *Betula papyrifera* 'Renci'



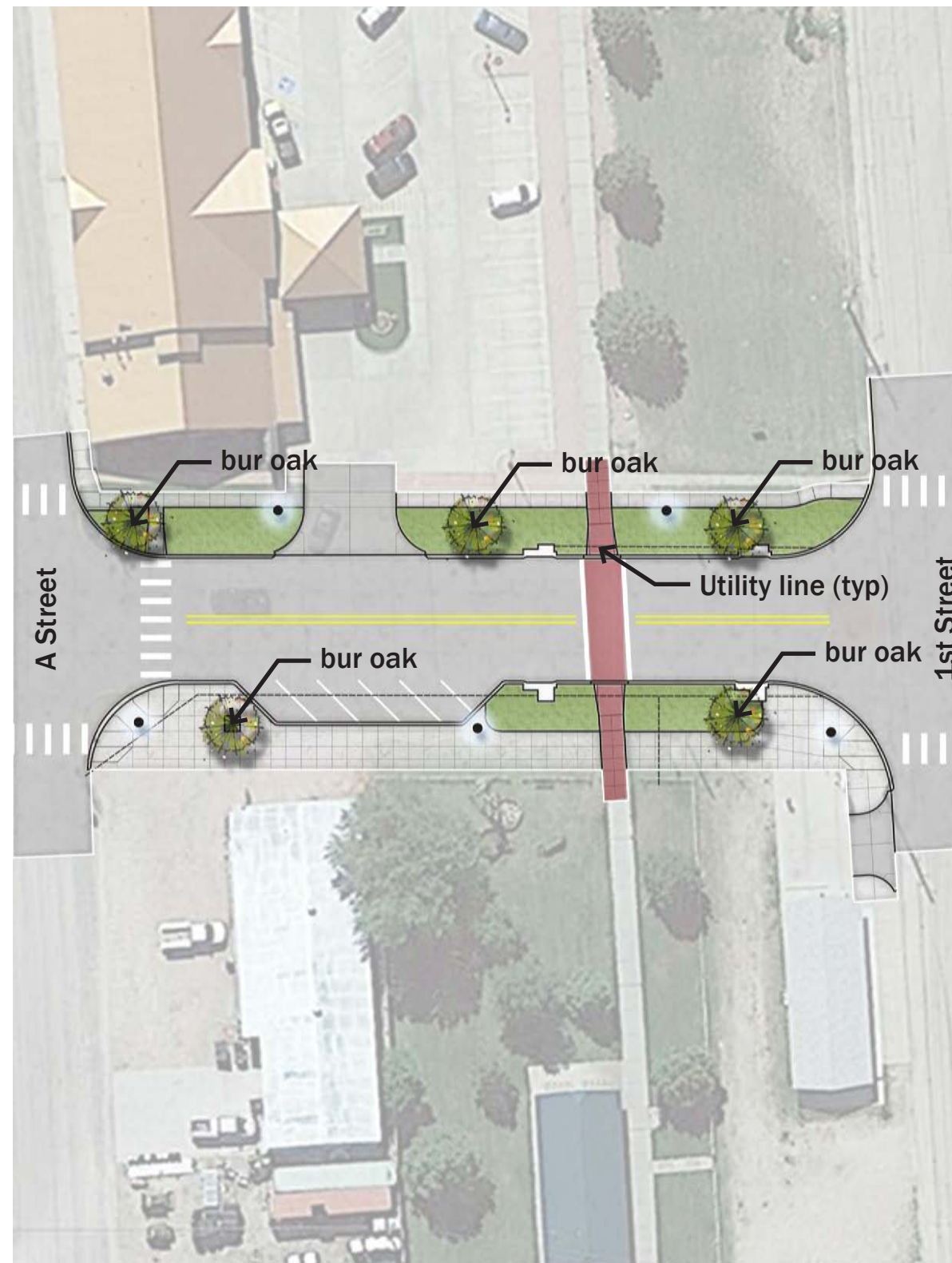




(3) Renaissance Reflection paper birch - *Betula papyrifera* 'Renci'



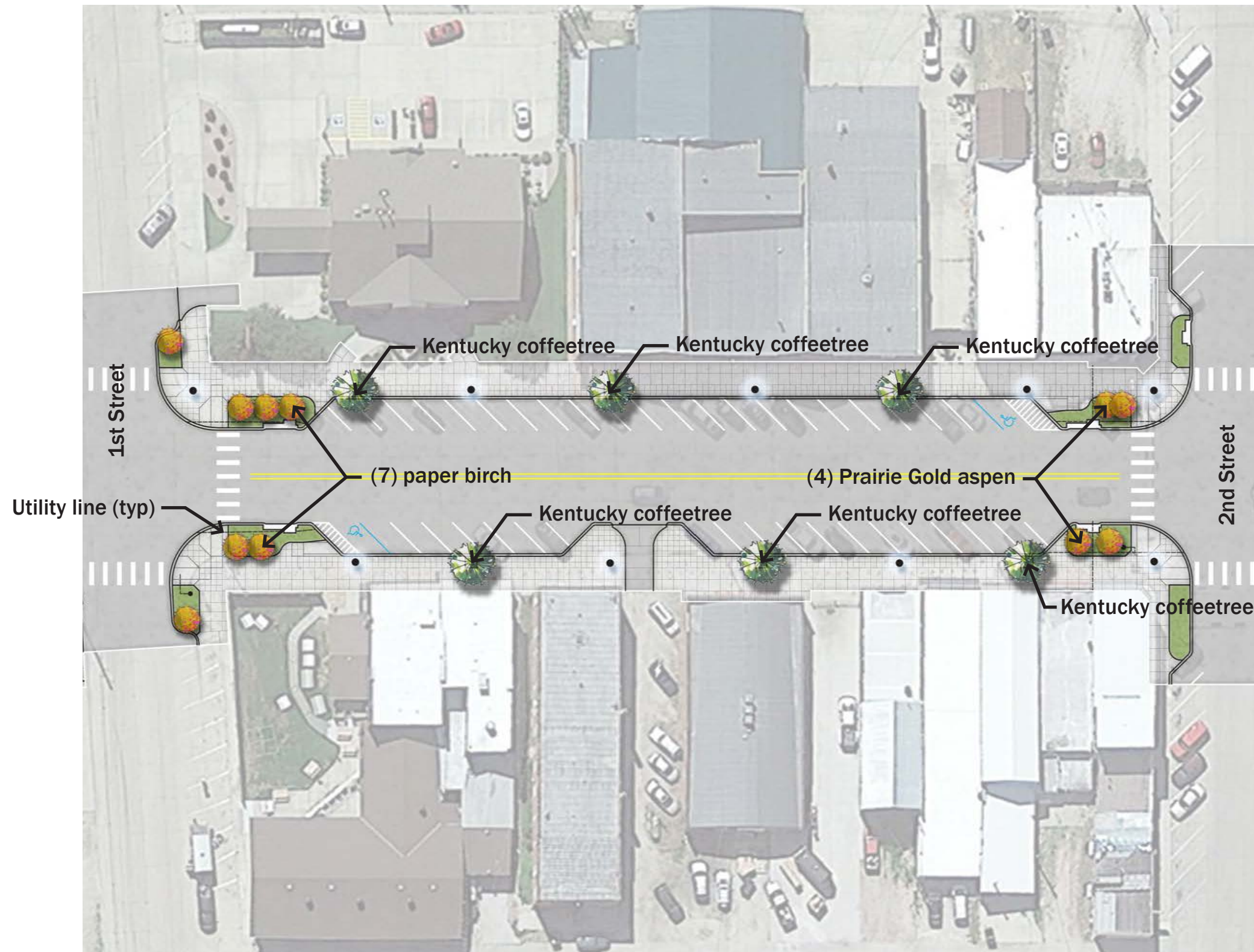




(5) bur oak - *Quercus macrocarpa* 'Relict'







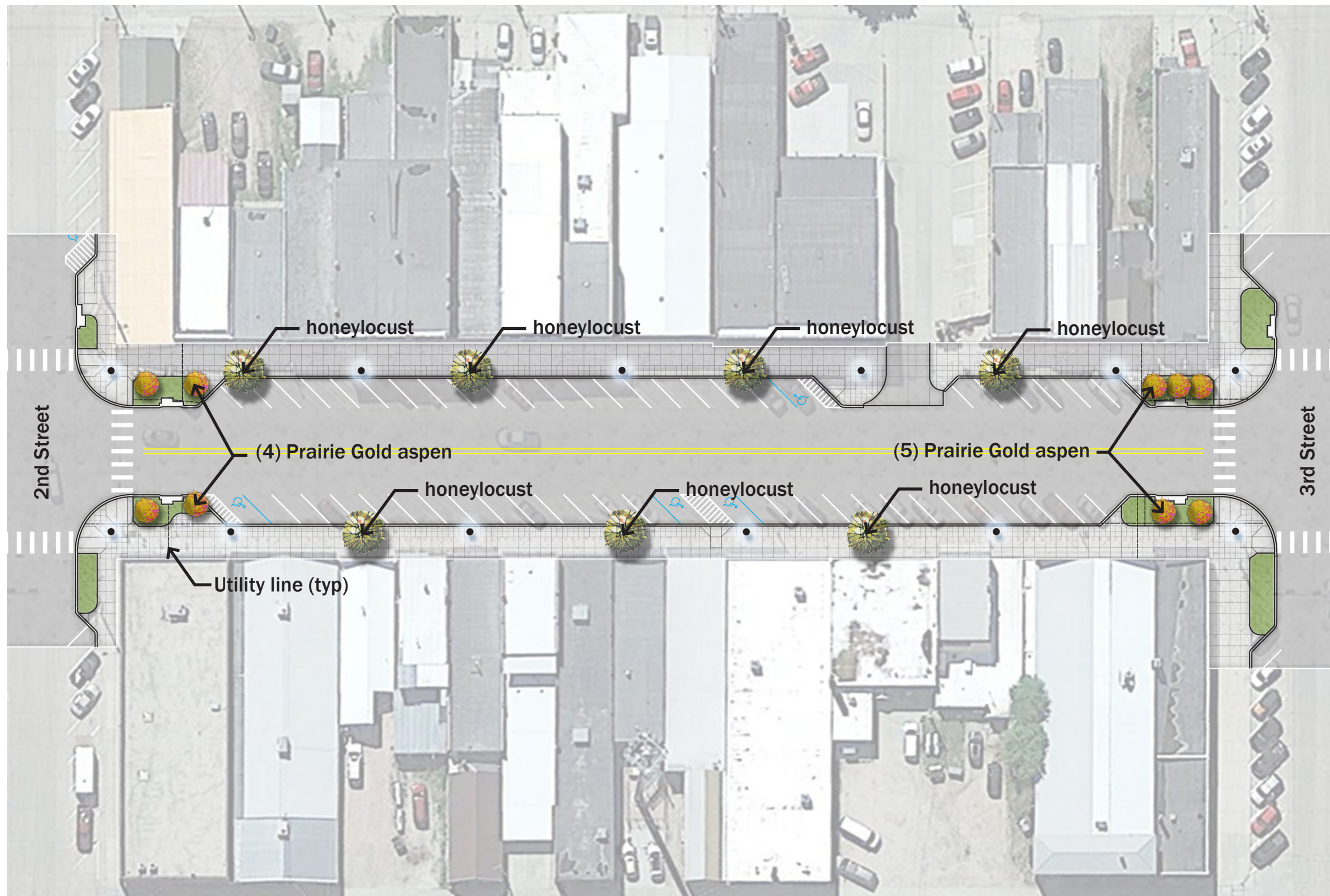
(6) Kentucky coffeetree - *Gymnocladus dioica* 'Espresso' \*\*\* each Kentucky coffeetree to be planted with 8 Blonde Ambition blue grama

(4) Prairie Gold aspen - *Populus tremuloides* 'Ne Arb'

(7) Renaissance Reflection paper birch - *Betula papyrifera* 'Renci'







(7) thornless honeylocust - *Gleditsia triacanthos inermis* 'Skyline' \*\*\* each thornless honeylocust to be planted with 8 prairie dropseed

(9) Prairie Gold aspen - *Populus tremuloides* 'Ne Arb'







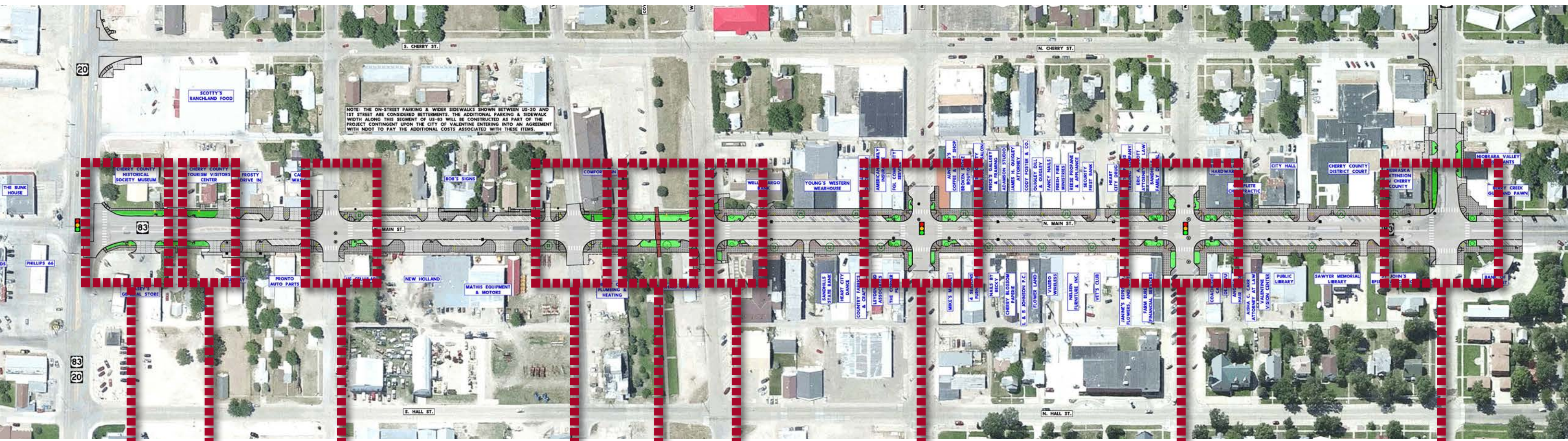
(6) Kentucky coffeetree - *Gymnocladus dioica* 'Espresso' \*\*\* each Kentucky coffeetree to be planted with 8 Blonde Ambition blue grama

(4) Prairie Gold aspen - *Populus tremuloides* 'Ne Arb'

(2) Renaissance Reflection paper birch - *Betula papyrifera* 'Renci'







HWY 83/20

HWY 83/20

B Street

A Street

Cowboy Trail

1st Street

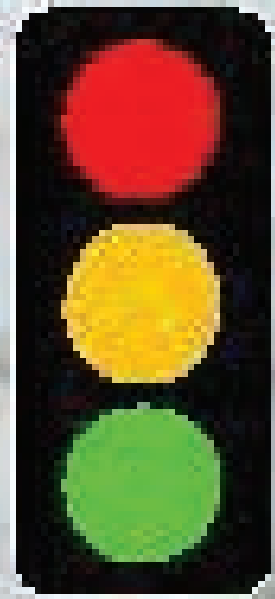
2nd Street

3rd Street

4th Street





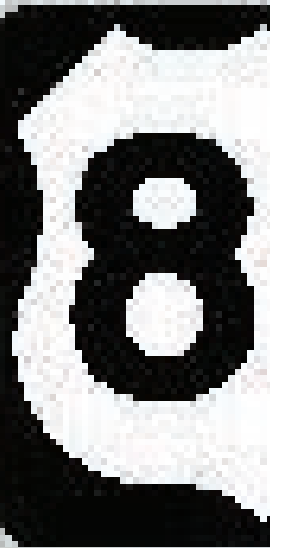


Highway 83/20

Plant List:

- |   |  |   |
|---|--|---|
|  TigerEyes sumac           |  Standing Ovation little bluestem |  Wichita Mountains goldenrod     |
|  Alleman's Compact dogwood |  purple coneflower                |  prairie coneflower - 18         |
|  Pawnee Buttes sandcherry  |  Kobold blazing star              |  Shenandoah switchgrass          |
|  soapweed yucca          |  Caradonna salvia - 32            |  Blonde Ambition blue grama - 27 |
|   |  prairie dropseed               |  Indian Steel indiagrass       |
|   |  trailway sideoats grama - 33   |   |

Highway 83/20

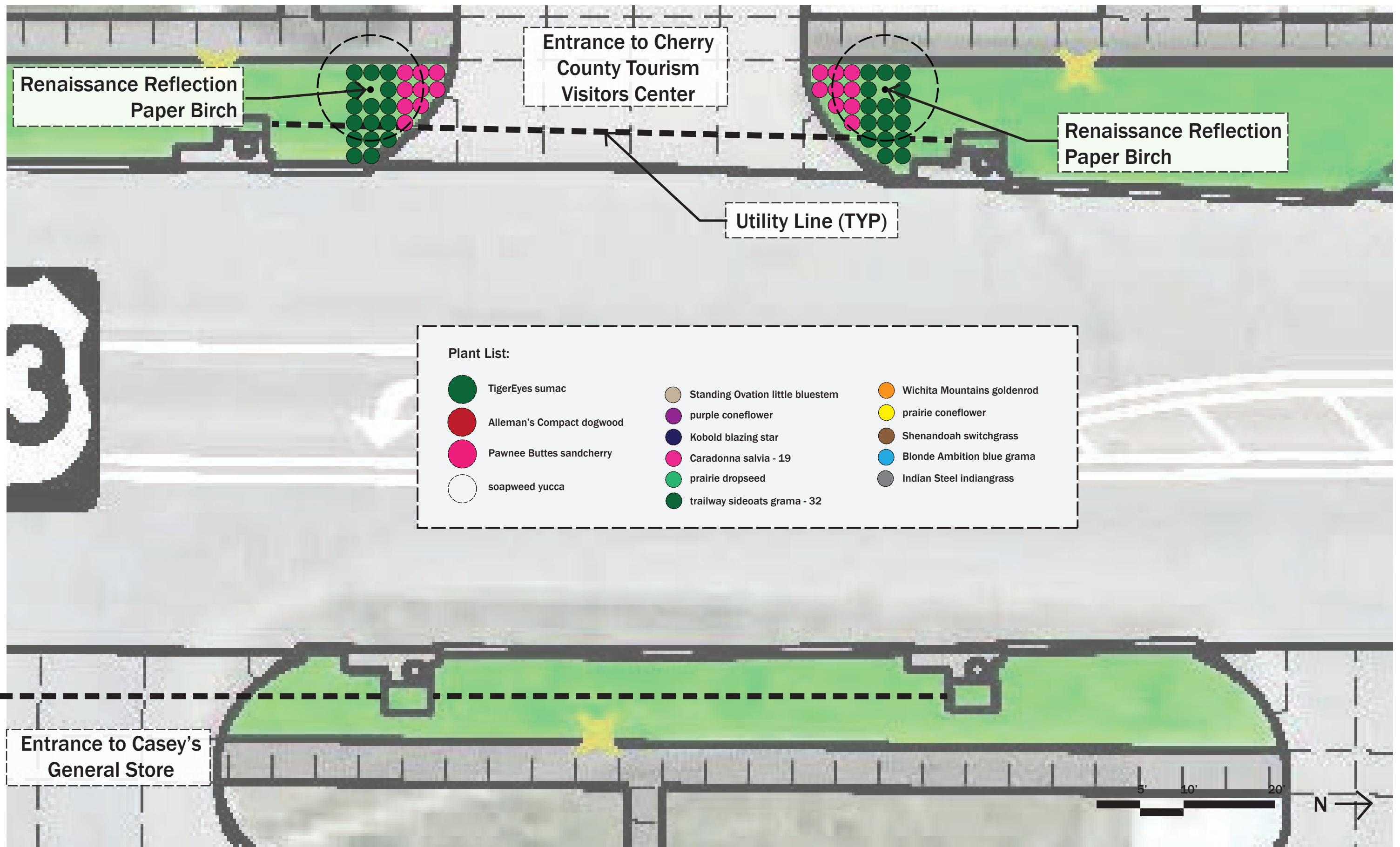


Entrance to Casey's  
General Store

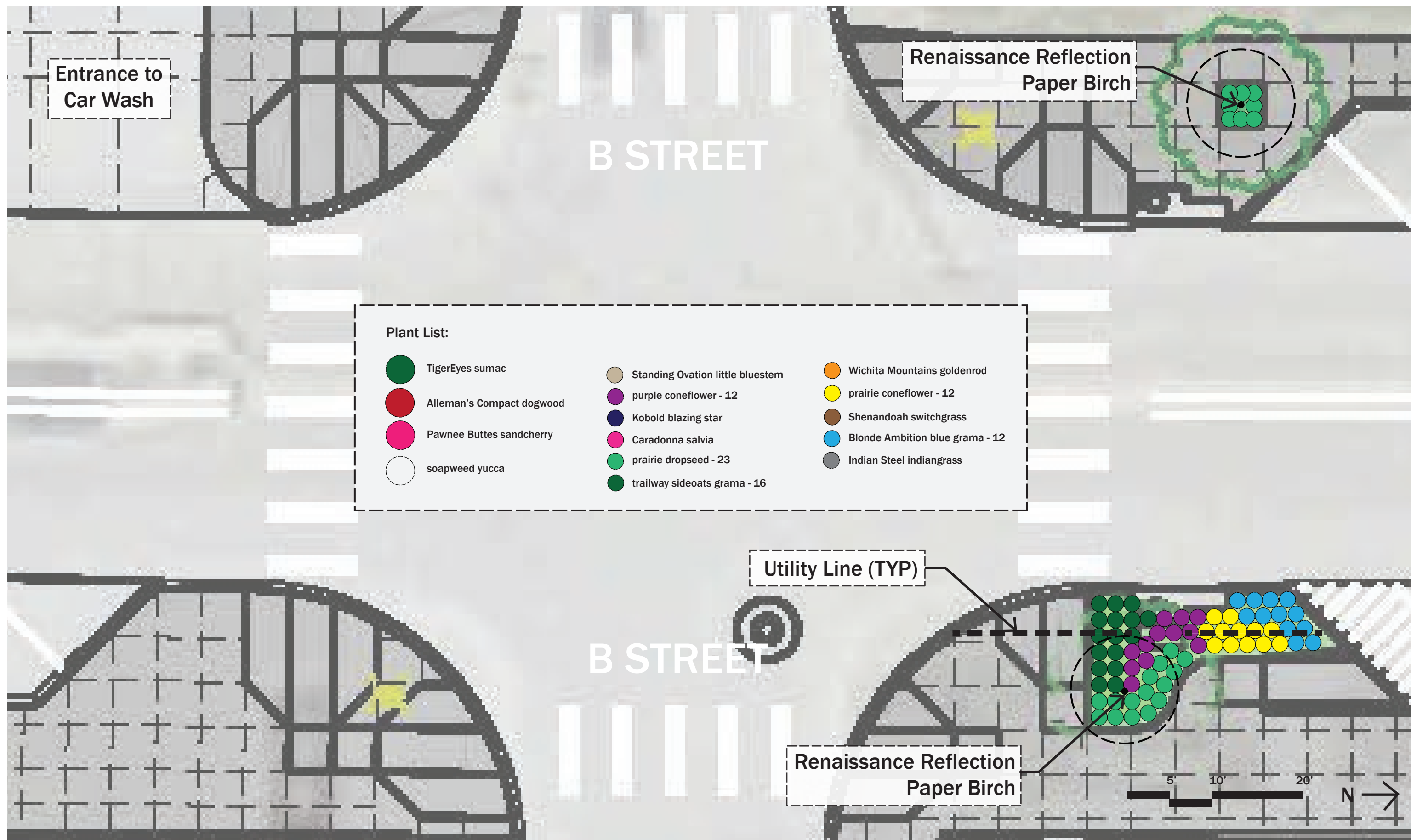
5' 10' 20'



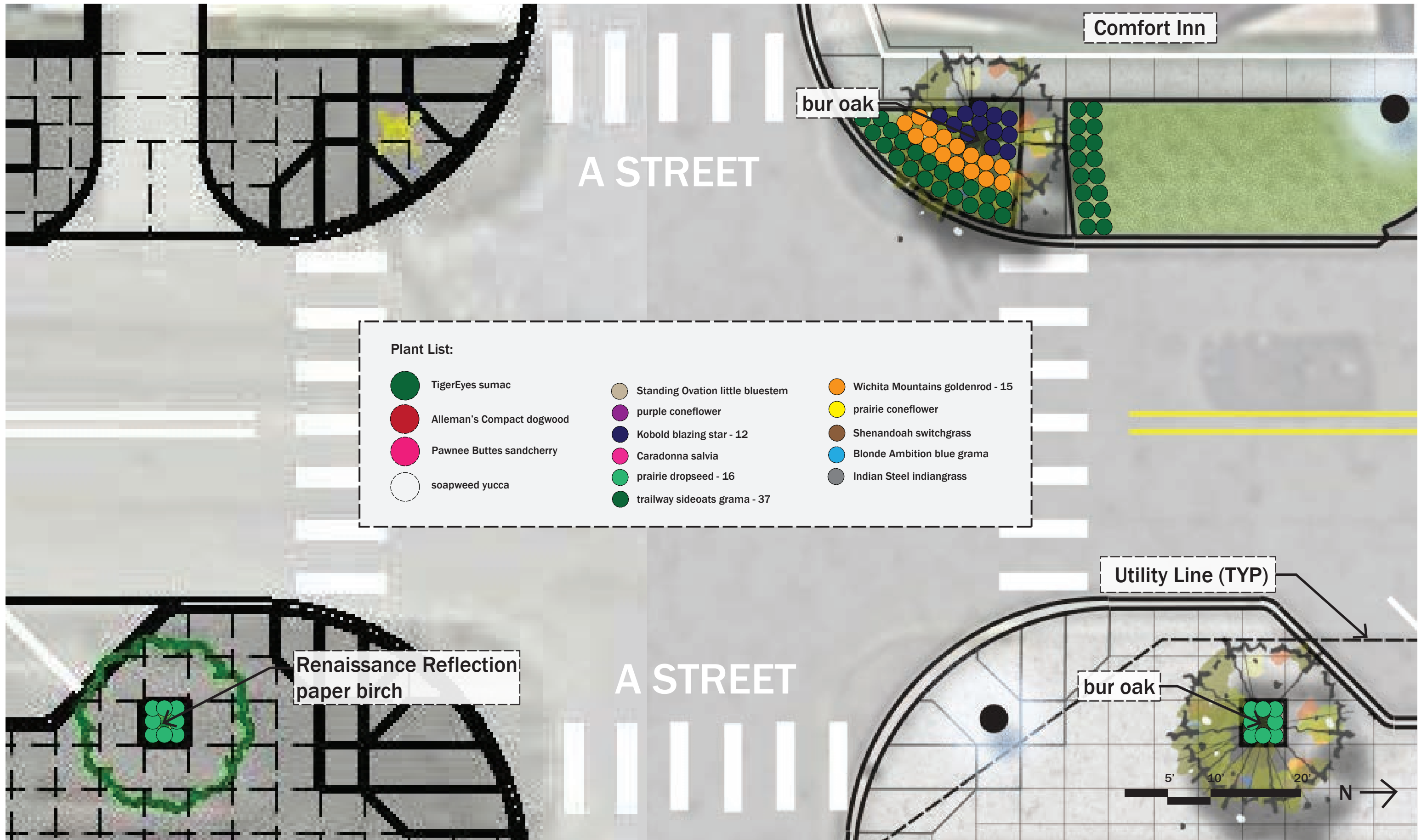




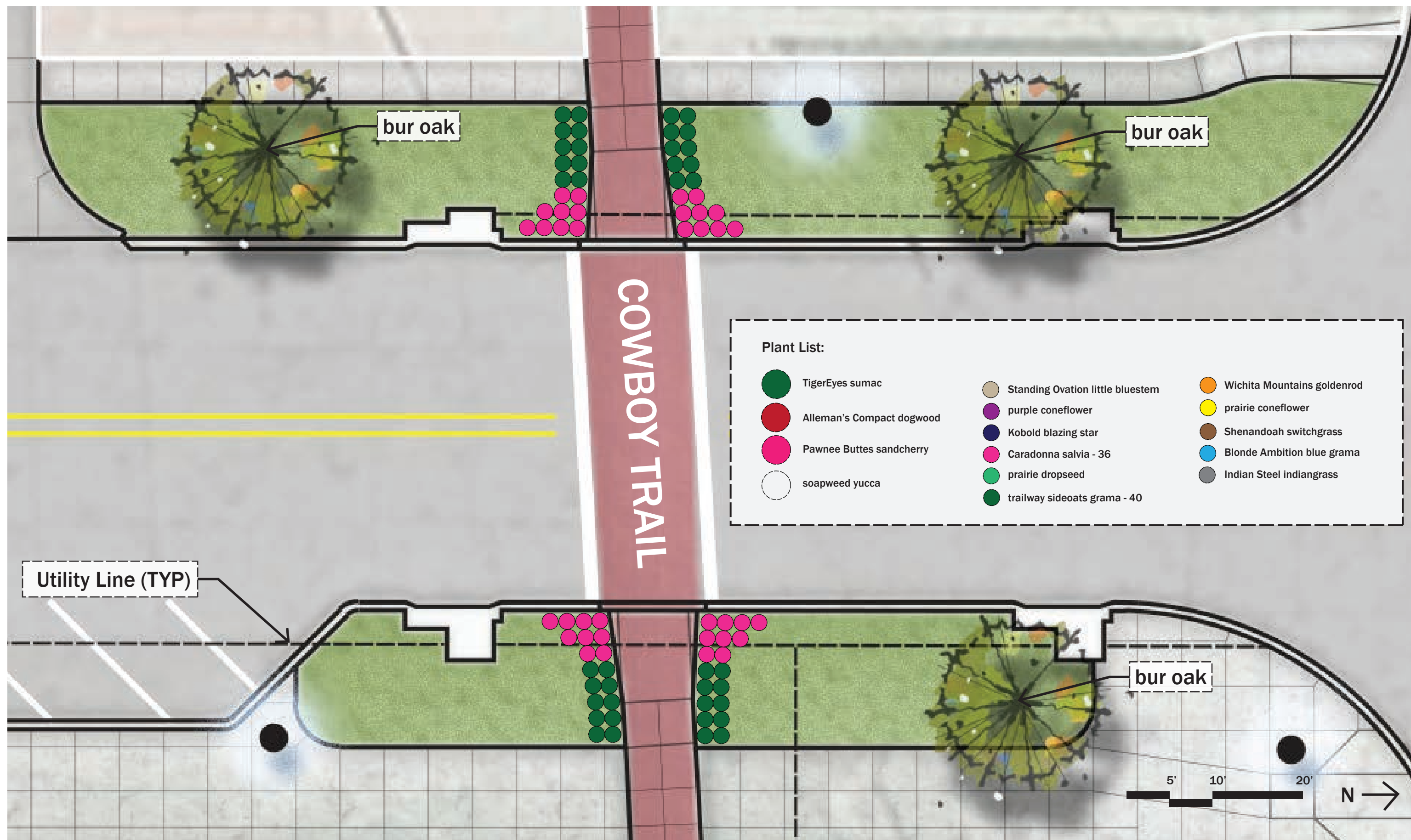




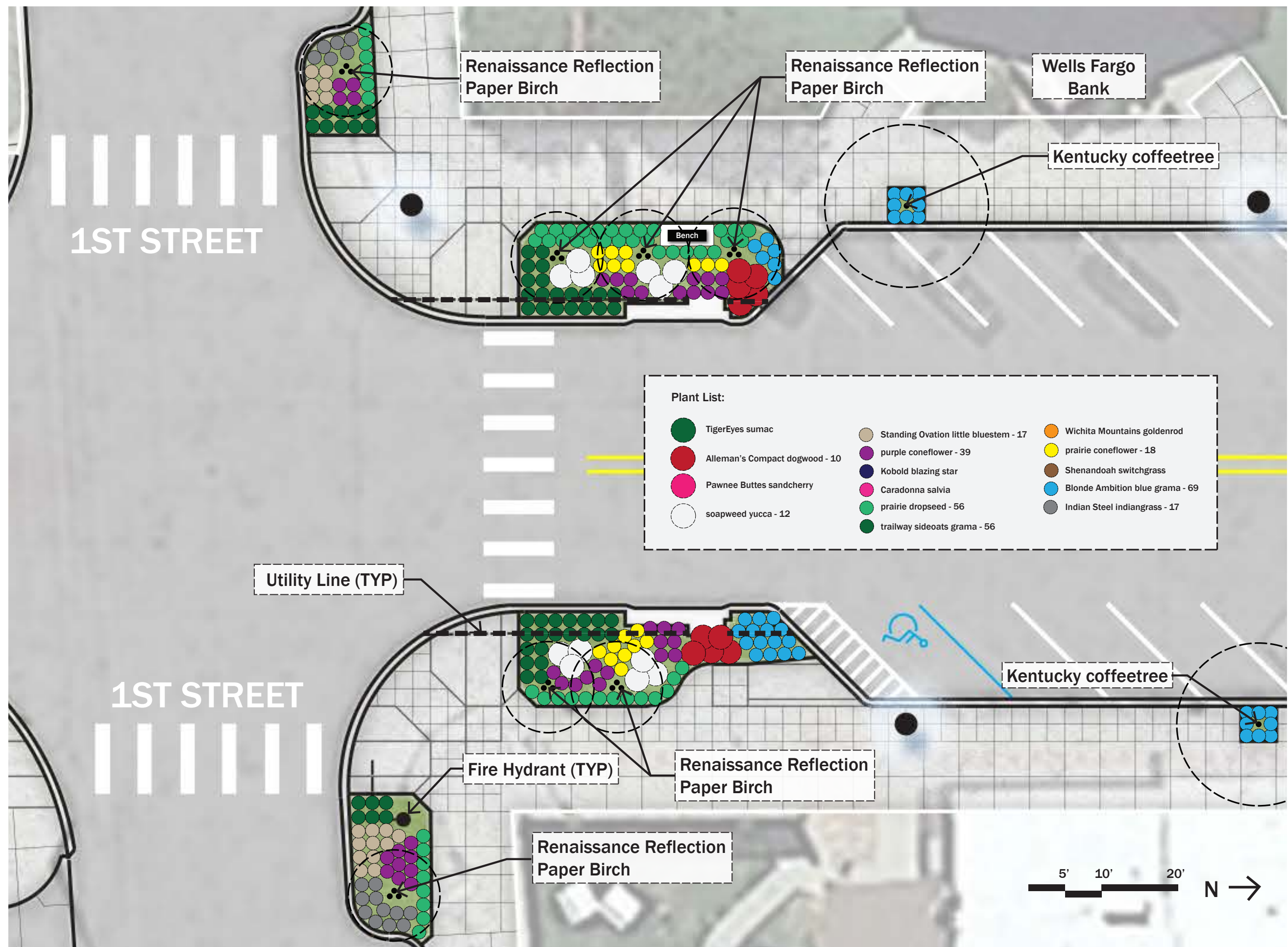




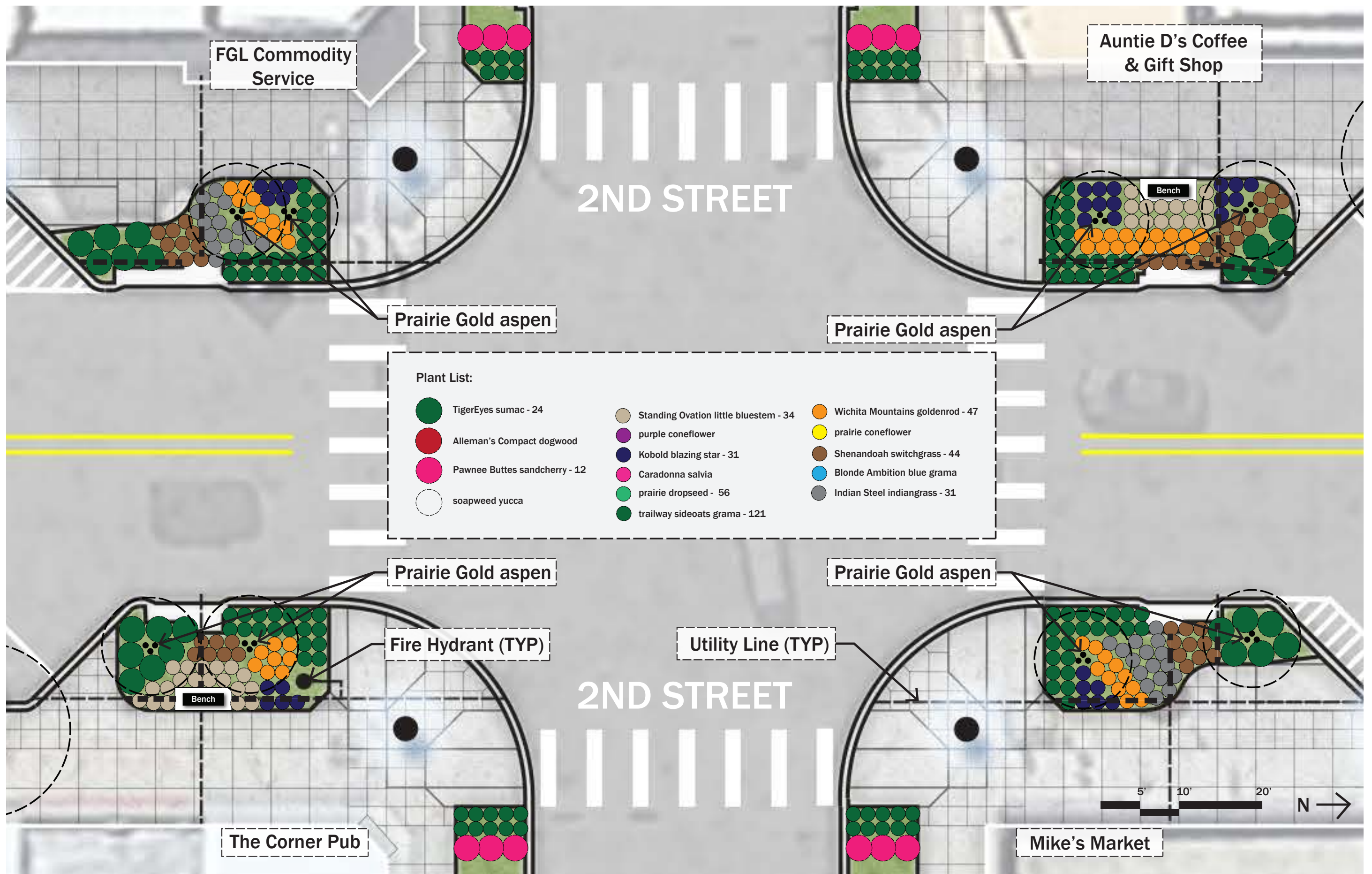




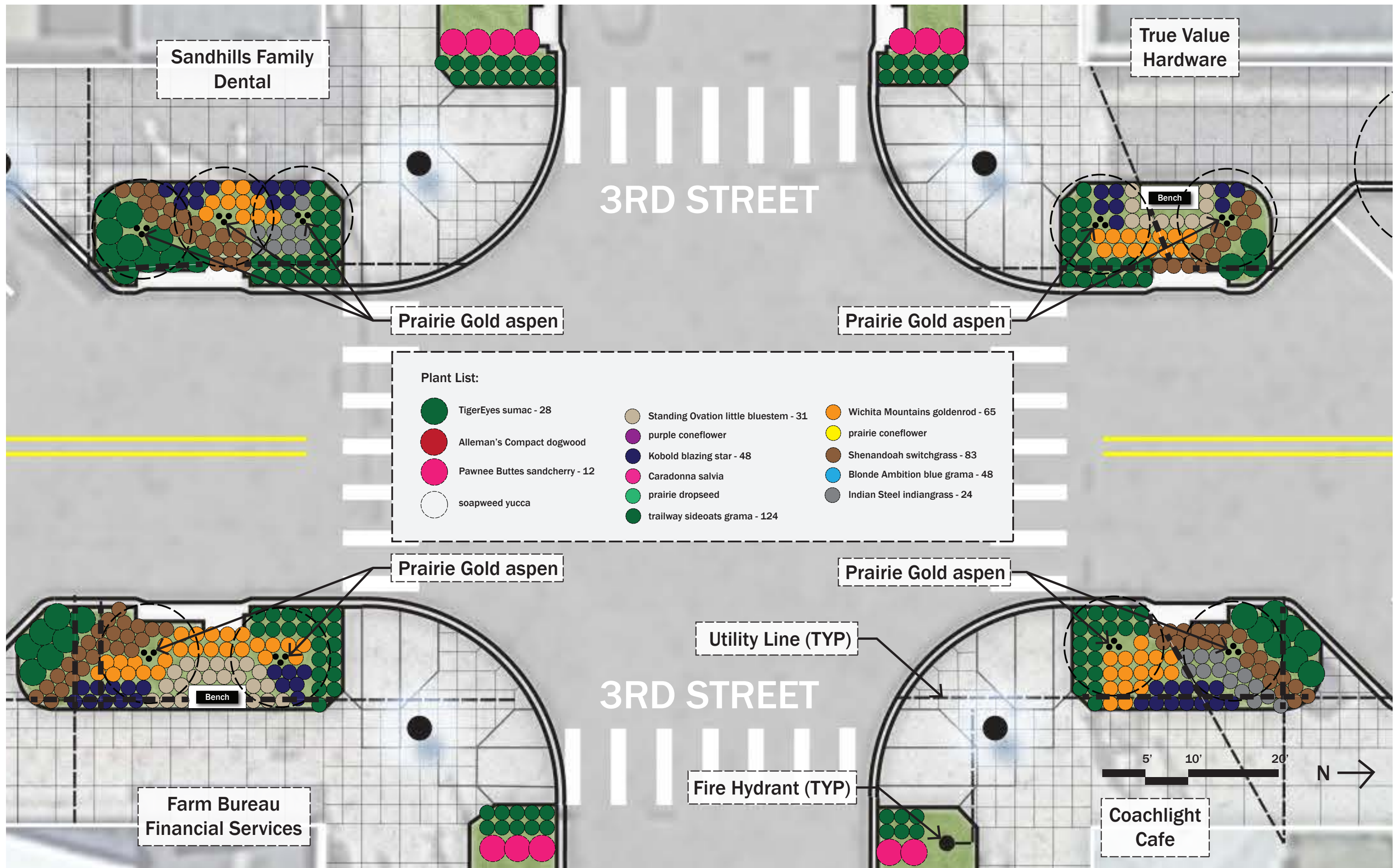




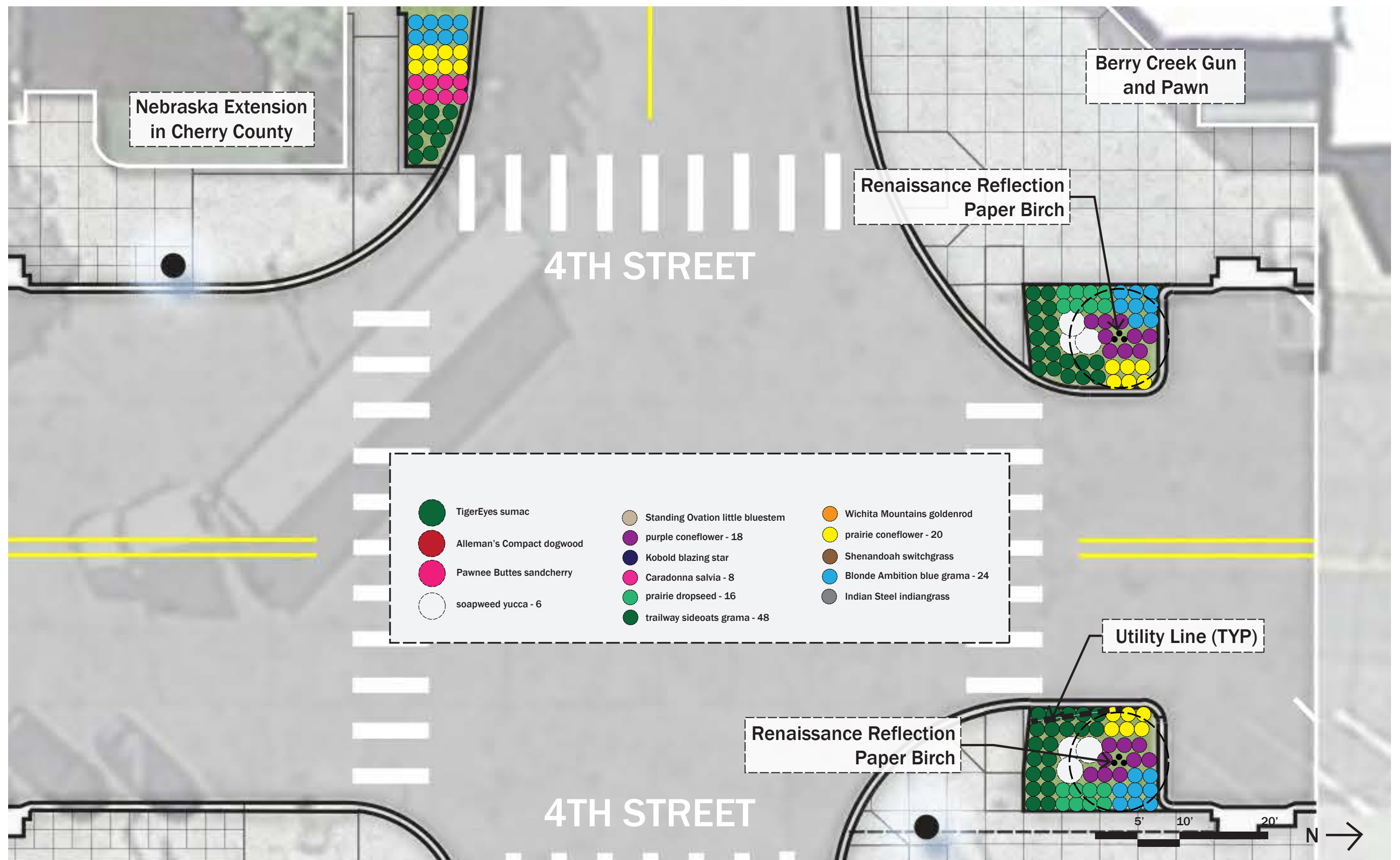
















Intersection Plantings - Before





Intersection Plantings - After



# Cost Estimate

Valentine Main Street Landscape Material Estimate						
Trees						
common name	scientific name	size/spec	number	cost	total	description
Renaissance Reflection paper birch	Betula papyrifera 'Renci'	#15	14	\$ 150.00	\$ 2,100.00	Paper birch is noted for its white bark, which exfoliates in papery strips to reveal an orange-brown inner bark. Mature trees develop black markings on the white bark. 'Renci' is selected from paper birch populations along the Niobrara River in northern Nebraska. Tolerates heat slightly better than other birches. Toothed leaves turn a nice yellow in autumn. Single-stem trees grow taller than clumps.
bur oak	Quercus macrocarpa 'Relict'	#7	5	\$ 85.00	\$ 425.00	Relict Bur Oak are seedlings grown from acorns collected from the Burr Oak Canyon in SW Nebraska. Surrounded by nothing but grazing cattle land the oaks are found below the horizon, hidden down in a canyon. Known to the locals as Burr Oak Canyon the trees themselves are truly one of a kind. It is believed that the canyon was untouched from prairie fires and devastating storms which has led to this unique tree's survival for hundreds of years. Each tree inside the two mile long canyon is different from the one next to it with characteristics from both post oak and gamble oak being seen from tree to tree. The name 'Relict' is the ecology form meaning a plant that exists as a remnant of a formerly widely distributed group in an environment.
Prairie Gold aspen	Populus tremuloides 'NE Arb'	#7	17	\$ 100.00	\$ 1,700.00	A truly native, disease resistant aspen! Found by Allen Wilke north of Columbus, NE. Fast growing. Tolerant of a wide range of soils. Great to plant as a colony or grove or as a single tree.
Kentucky coffeetree	Gymnocladus dioica 'Espresso'	#7	12	\$ 85.00	\$ 1,020.00	This picturesque tree has deeply furrowed bark and stout branches that are particularly handsome in winter. It prefers deep, moist soil and full sun, but is adaptable to many conditions such as alkaline soil, salt, and drought. The mahogany seed pods are long and leathery. Seed collected in Saunders Co.
Skyline honeylocust	Gleditsia triacanthos inermis 'Skycole'	#7	7	\$ 90.00	\$ 630.00	features pyramidal growth with a central leader. It is a thornless and nearly seedless variety that typically grows to 40-45' tall. Pinnate to bipinnate dark green leaves with ovate leaflets (1/2" to 1 1/2" long) cast a sun-dappled shade. Leaves turn an attractive yellow in fall
subtotal:					\$ 5,875.00	
25% Initial Downpayment Due:				\$ 1,468.75		

Valentine Main Street Landscape Material Estimate						
Shrubs, Perennials, Grasses						
common name	scientific name	size/spec	number	cost	total	description
TigerEyes sumac	Rhus typhina 'Bailliger'	#2	52	\$ 35.00	\$ 1,820.00	
Alleman's Compact dogwood	Cornus sericea 'Alleman's Compact'	#2	10	\$ 35.00	\$ 350.00	
Pawnee Buttes sandcherry	Prunus besseyi 'Pawnee Buttes'	#1	24	\$ 15.00	\$ 360.00	
soapweed yucca	Yucca glauca	#1	18	\$ 15.00	\$ 270.00	
Standing Ovation little bluestem	Schizachyria 'Standing Ovation'	SP4/Quart	82	\$ 5.00	\$ 410.00	
purple coneflower	Echinacea angustifolia	SP4/Quart	69	\$ 5.00	\$ 345.00	
Kobold blazing star	Liatris spicata 'Kobold'	SP4/Quart	91	\$ 5.00	\$ 455.00	
Caradonna salvia	Salvia nemorosa 'Caradonna'	SP4/Quart	95	\$ 5.00		
prairie dropseed	Sporobolus heterolepis	SP4/Quart	167	\$ 5.00	\$ 835.00	
Trailway sideoaks grama	Bouteloua curtipendula 'Trailway'	SP4/Quart	507	\$ 5.00	\$ 2,535.00	
Wichita Mountains goldenrod	Solidago 'Wichita Mountains'	SP4/Quart	127	\$ 5.00	\$ 635.00	
prairie coneflower	Ratibida columnifera	SP4/Quart	68	\$ 5.00	\$ 340.00	
Shenandoah switchgrass	Panicum virgatum 'Shenandoah'	SP4/Quart	127	\$ 5.00	\$ 635.00	
Blonde Ambition blue grama	Bouteloua gracilis 'Blonde Ambition'	SP4/Quart	180	\$ 5.00	\$ 900.00	
Indian Steel indiangrass	Sorghastrum nutans 'Indian Steel'	SP4/Quart	72	\$ 5.00	\$ 360.00	
subtotal:					\$ 10,250.00	

Valentine Main Street Landscape Material Estimate				
Misc. Landscape Material				
item	number	cost	total	description
mulch	48 CY	\$ 30.00	\$ 1,440.00	
subtotal:		\$ 1,440.00		

Street Furniture				
item	number	cost	total	description  All prices will go down substantially if ordered in bulk. Contact Ethan @ Sitescapes in Lincoln, NE for estimate. #4028700595
Bench by Sitescapes	1	\$ 1,100.00	\$ 1,100.00	
Trashcan by Sitescapes	1	\$ 950.00	\$ 950.00	
Bike Rack by Sitescapes	1	\$ 250.00	\$ 250.00	
subtotal:		####.##		

Staff / Landscape Management					
item	wage	# hrs/wk	time	total	description
1 part-time park staff member	\$ 12.00	20	26 weeks	\$ 6,240.00	Landscape staff member should be hired on a temporary part-time basis. The person would be in charge of the care and management of the 5 blocks of Main Street landscaping including tree trimming, weeding, plant bed cleanup, watering, mulching, infill planting, fertilizing, and spraying.
subtotal:				\$ 6,240.00	

Final Material Pricing		
Trees subtotal:	\$ 5,875.00	
Shrubs, Perennials, Grasses subtotal:	\$ 10,250.00	
Misc. Landscape Material subtotal:	\$ 1,440.00	
GRAND TOTAL:	\$ 17,565.00	





# Management Plan

## Planting Instructions - Trees

See Tree Planting Reference Instructions (next page) for complete installation procedures. Before planting, the ground should be free of debris (dirt clods, concrete, sticks etc.) and **PLANTING** - Trees should be planted to a depth where the trees root flare, the place at the base of the trunk where the tree widens into its roots, is above or at the existing ground level. Mulch ring should be applied around the tree 2-3'. Mulch should be pulled away from direct contact with the tree trunk. **PRUNING** - The only branches that should be pruned at the time of planted are those that are broken or appear dead or dying. **STAKING** - Trees should be staked with two metal stakes to the trees north and south direction. Straps should be of a belt or bungee cord material. Sway or slack should be allowed in straps. Staking should be removed 1 year after initial staking. **WATERING** - Each tree should be given 5-10 gallons of water (1-2 minutes of a hose turned on) at time of planting. Trees should be watered with 1" of water weekly, if its rains over 1/2" in a week refrain from watering that week. Birch and aspen trees will need watered most frequently as they are not as drought tolerant as the coffeetree, honeylocust, and bur oak.

## Year 1 - Spring 2022

**APRIL** - All grasses and non-woody perenials should be mowed down to 4" or cut individually to a few inches above the crown of the plant. Note that the sumac, sandcherry, soapweed, and dogwood should not be mowed or trimmed back. All beds should be weeded and 3" of new mulch should be applied. Late in the month, trees should be pruned structurally to maintain a central stem leader. Pruning cuts should be cut parallel to the trunk and not protrude away from the trunk in such a way as you could hang a hat on the end of them. Note that no more than 30% of the canopy branches should be pruned in one year. **TOPPING TREES IS NOT A RECOMMENDED TRIMMING PRACTICE.** All tree stakes should be removed. It is possible that as many as 15% of the trees will die in the first 2 years, replacement trees of the same species should be replaced as needed. \*\*\*kentucky coffeetree, honeylocust, and bur oak are late to emerge, so don't be alarmed to not see buds till well into May. Aspens and elms should emerge slightly earlier.

## Year 2 - Spring 2023

Practices from year one should be applied in kind to the second spring and subsequent springs. Infill plants of the same species should be planted to replace holes or empty spaces as needed. As trees begin to shade out grass species, shade tolerant sedge (*Carex*) species should be infilled as needed. Sumac, sandcherry, and dogwood should be allowed to colonize. Wildflowers and perenials will seed themselves as time progress, allow them to spread within reason without plant beds becoming weedy in appearance. Periodic water should be done in spring and times of extended drought.

## Planting Instructions - Shrubs, Perenials, Grasses

See Piet Oudolf Planting Design Reference for plant installation design techniques. **PLANTING** - Before plants are installed, trees should be planted for reference points at intersections and the plant locations should be chalked or painted onto the bare earth. Plants should be placed 12-18" on-center spacing away from each other. All plants should be planted to a depth where their root flair or root crown is level with the surface of ground. **MULCHING + WATERING** - All plants should mulched and watered in immediately after installation. Plants should be watered with 1" of water weekly, if its rains over 1/2" in a week refrain from watering that week. **WEEDING** - Weeding should be done mechanically (hoeing, pulling) every week during the first year until plants are established. Then weeding should be done periodically as needed in subsequent years.

## Year 1 - Fall 2022

**OCTOBER** - All grasses and perenials should be left to provide winter interest and catch snow. If weed preventer herbicide is deemed necessary apply by spot spraying in the late fall. To retain soil moisture more mulch may be applied before hard frost. No pruning or tree trimming should be done after the first frost. The sumac should turn a deep orangish-red in the fall while the dogwood stems should remain a bright red throughout the winter months and provide visual interest. The bluestem and blue grama should also maintain a nice orange color throughout the fall and winter. Dead seedheads and blooms on grasses and perenials will provide nice winter interest. \*\*\*Christmas lights may be applied to the trunks of the aspen and street tree canopies over the winter. Power plug outlets are located on the new light poles.

## Year 2 - Fall 2023

Practices from the fall of year one should be applied in kind to the second fall and subsequent falls.





# References

## Tree-planting for Success

Justin Evertson, Nebraska Statewide Arboretum, © Nebraska Statewide Arboretum 2016, plantnebraska.org or retirenebraska.org

### PLANTING

Proper planting is critical to the establishment of healthy, thriving trees. The planting guidelines below have been developed to help new trees get off to a successful start. The recommendations are based on nationally recognized standards as well as experience compiled by the Nebraska Statewide Arboretum and the Nebraska Forest Service. The recommendations assume that an appropriate tree has been selected for the planting site and that the site is suitable for planting.

**DIGGING.** Dig a saucer-shaped hole wider than the root system but no deeper than the root mass. Most holes do not need to be deeper than about one shovel’s depth (10-14”). The bottom of the hole should be firm enough to prevent the tree from settling deeper after planting. **Note:** Using an auger is not recommended since trees often settle too deep and the sides of the holes become glazed. If using an auger, don’t drill deeper than needed and loosen the sides of the hole.

**PLANTING.** Plant so the base of the trunk is at original ground level or slightly higher. **The first lateral roots** should end up just under the soil surface (1-2” deep) and the **trunk should flare** visibly at ground level.

- Always locate the first main lateral roots and remove any excess soil above them before setting the plant in the hole. The first main roots are often several inches below the top of the container or root ball.
- All graft unions should be visible above the soil line.
- Remove all pots and containers before planting.
- For balled and burlap (B&B) stock, try to remove the wire basket and burlap before placing the tree in the hole. If maintaining the integrity of the soil ball is important, then remove the bottom part of the burlap and wire basket before setting the plant in the hole and then remove the remaining burlap and wire basket after stabilizing the tree in the hole. Remember to check for and remove any excess soil at the top of the root ball before planting.
- **Loosen and spread circling roots before backfilling** (especially important for potted trees). It may be necessary to cut larger roots that cannot be straightened to prevent girdling, but this should be done with caution. Reject plants with severely circled or girdled root systems.
- For potted trees, try to remove as much of the original growing medium as possible before planting to help achieve good soil-root contact. Dunking in water or spraying with a hose will help in this effort.

**BACKFILLING.** Backfill with the original soil dug from the hole. Large clods and soil chunks should be broken up as much as possible. Adding water during backfilling can help remove air pockets and better moisten the roots.

**MULCHING.** Mulch individual trees with a 2-4” layer of wood mulch extending from the trunk to at least the drip line of the tree. Where possible, mulch trees and other plantings together en masse to help separate from surrounding turf. **Don’t** pile the mulch deeply over roots or against the base of the trunk and **don’t** mulch with rock or use plastic weed barriers under the mulch.

**STAKING & BRACING.** Brace the tree if it might dislodge or blow over in the wind (most trees typically benefit from staking). Some sway should be allowed in the tree after staking. Use only broad, belt-like materials to attach the bracing to the trunk to help prevent rubbing injuries. **Do not** brace with wire, rope or wire through hose. Remove staking within one year.

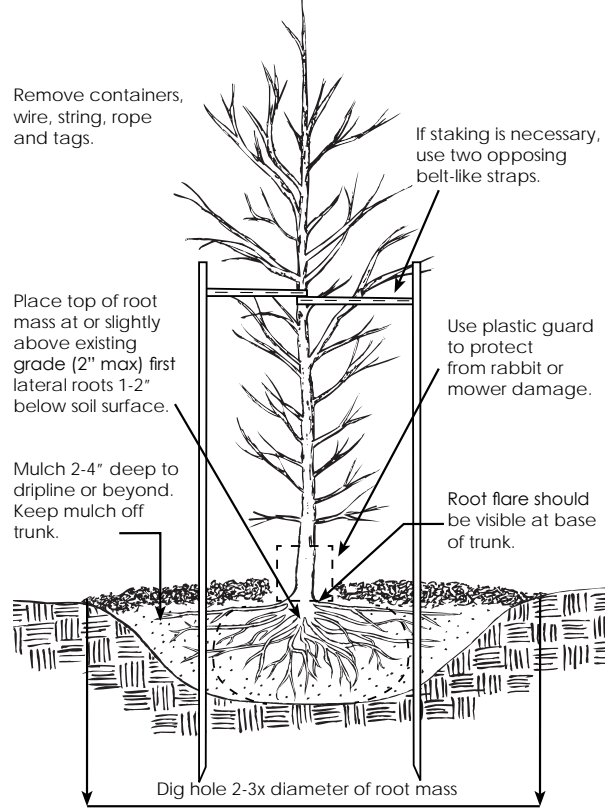
### POST-PLANTING CARE

**WATERING.** After planting, keep the root zone moist but not waterlogged. In general, a newly planted tree should receive about 1” of moisture per week, including rainwater, during the first growing season. Check the root zone frequently for moistness—don’t just guess. Many trees are lost to either under- or over-watering. Containerized trees often need more watering than bare-root or B&B stock, because the porous growing medium they are potted in dries out faster.

**FERTILIZING.** If the right tree was selected for the planting site, fertilizer is generally not needed. If fertilizer is desired, use only a slow-release, low-nitrogen fertilizer applied to the soil surface after planting.

- **Never** add fertilizer to the planting hole since it can damage newly transplanted roots. In addition, excess nitrogen in the soil can cause newly planted trees to add top growth at the expense of proper root development.
- Address major soil problems **before** planting. Adding organic matter to the planting site before planting can be very beneficial for poor, inorganic and/or compacted soils.

**PRUNING.** At planting time, prune only to remove dead or damaged branches and to correct structural defects. Never cut back healthy branches or trim the tree to try and “balance” the top with the roots. The tree will benefit from having as many food-producing leaves left on as possible. Also, try to leave lower branches on a tree for as long as possible after planting. Lower branches help protect the trunk from cracking, sunscald and animal damage and they aid in developing good trunk taper. If needed, limb the tree up gradually over a matter of several years after planting. Monitor the tree when young and prune, sparingly but properly, to prevent structural defects.



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## WATERING

There is no precise formula for watering landscape plants. A wide range of variables can influence when, how much and how to water: plant type, plant age (newly planted or not), soil type, microclimate, type of watering method used, etc. The suggestions for effective watering below are not all-inclusive, but hopefully it’s a start down the right path.

- Always check to see if plants actually need water. To see if the soil is moist, dig down a few inches with a long screw driver, survey stake or something similar. If resistance is felt several inches down, it’s time to water.
- Water in the morning or evening to conserve water (that said, watering when you have time is better than not watering at all).
- Water DEEPLY. Most people make the mistake of seeing the top of the soil become moist and assuming they have watered enough. In general, a hose (not a sprinkler) running normally for 2 minutes will apply 10 gallons of water. If you are hand-watering 10 seconds per shrub, you’re applying less than a gallon of water. To make sure water is being absorbed and not just sitting on the surface, water everything and then start over and do it all again. Deep, infrequent watering is much better for the health and establishment of plants.
- If you are using a sprinkler, spend some time calibrating it at the start of the season so you know how long it will need to run to apply an inch of water (directions can be found online).
- You can test how deep you have watered by using a soil probe or long screw driver an hour after watering. When you push the probe into the soil, it will go through moist soil easily and begin to give resistance when it hits dry soil.
- Soil type does have an impact on watering. Sandy soil will need to be watered more frequently than clay soil.
- Trees are best watered by putting a hose on trickle or a sprinkler on low volume and leaving it there for several hours. Tree gators or five gallon buckets with holes also work as they slowly release water over a period of time.
- Add mulch, but not too much (there’s a tendency to over-apply). Applying 2-3 inches of organic mulch conserves moisture, slows evaporation, cools the soil and adds organic matter as the mulch decomposes.
- Group plants with similar water needs together.
- Don't assume that because a plant is native or drought-tolerant it doesn't need to be watered the first year or two of establishment. Planted in the landscape, it takes awhile for the roots to extend beyond the potting soil into existing soils.
- Don't OVERwater. Automatic turf irrigation systems are most problematic in this regard. When soil is waterlogged, plant roots are starved of oxygen. Finding the balance between under-watering and over-watering can be tricky and, unfortunately, their symptoms are similar: leaves turn light green or yellow; leaves wilt; young shoots wilt. But using a soil probe (bullets above) should help determine soil moisture and you can also pay attention to “indicator plants” like gooseneck loosestrife, *Heliopsis*, bee balm and *Rudbeckia*. When they’re wilting, it’s time to water.
- Use a rain gauge and adjust watering accordingly. If you get 1 inch of rain in a week, you won't need to water.
- Most importantly, plant things that can survive long-term with minimal watering.



References



# References

## Piet Oudolf's Planting Design Process



The adjacent planting plan done by Oudolf for the Laurie Garden in Chicago's Millennium Park illustrates how the use of banded planting areas and clumped plantings work together to create form out of planting. Matrix planting is used in the bottom portion of the garden to create a foreground for the rest of the garden to the north. Four species of tussocked or clumped grasses were used to make up the matrix with interspersed plugs of different colored or textured perennials were inserted for visual interest.

## Piet Oudolf's Planting Design Process

Piet Oudolf is well-known across world for his planting design techniques using native plant species, perennial garden plantings, and plant matrix combinations. He has also made popular the ideas of using groups of grasses as the base for all of his matrix planting schemes, as well as using plants for the structural and seasonal interests after they have flowered and fallen dormant. Drawing from his ideas and techniques, the two alternatives for the Homestead Prairie Garden Exhibit were designed with thought as to plant location, life cycle, flowering color and texture, dormant color and texture, and contrast with other adjacent plants. Keeping this ideas in mind will help make the garden maintainable for staff and enjoyable for the visitor.

*"Planting has to please people... otherwise no one will have an interest in caring for it"*  
- Piet Oudolf



## Planting Areas Drawn to Scale on Ground



## Plant Plugs Placed 12-18" On Center



## Planting Areas Post-Installation

