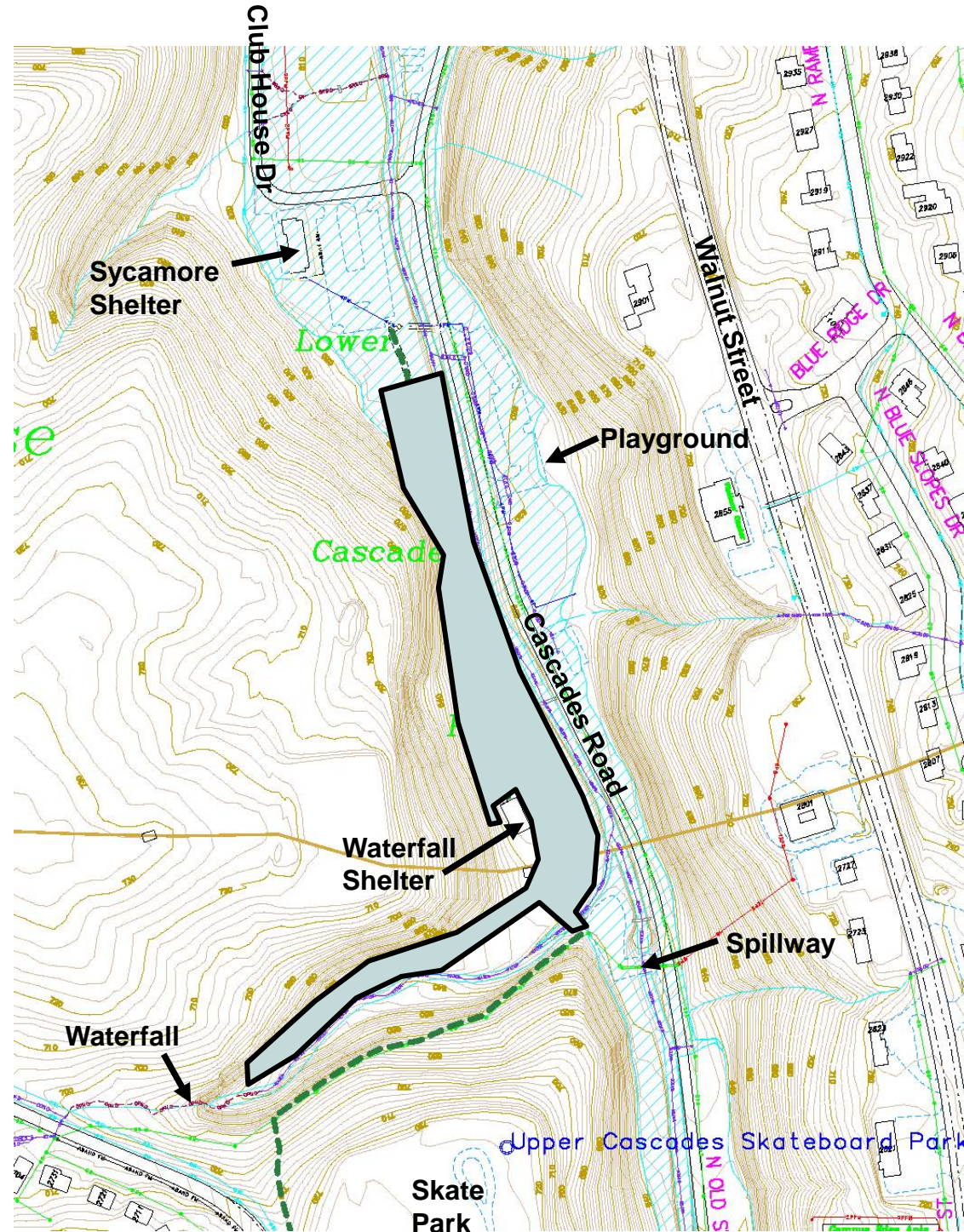
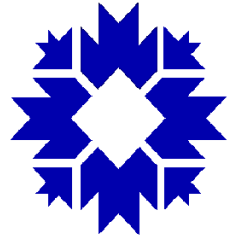




# Lower Cascades Park: Cascades Trail Phase 5 and Streambank Stabilization

**Project Overview**  
-  
**November 12, 2020**





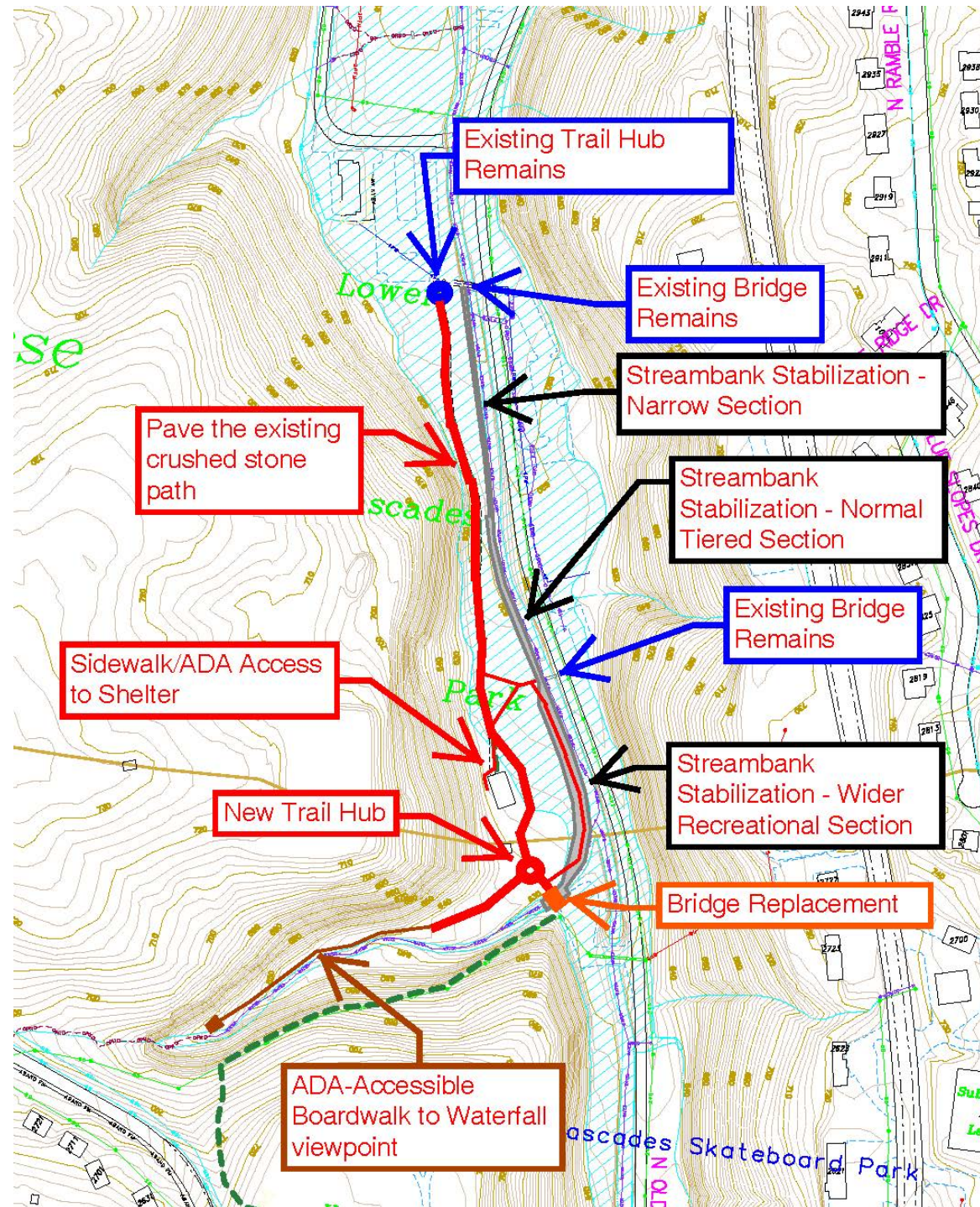
## 3 Primary Project Goals

- **Continue development of Cascades Trail:**
  - Pave existing footpath from Sycamore Shelter, past Waterfall Shelter, to the spillway parking area
  - Replace the bridge near Waterfall Shelter
  - Provide ADA accessible route throughout
- **Provide new ADA-compliant path and boardwalk to the Waterfall area**
- **Stabilize the failing western streambank against erosion and further tree loss, and**
  - Make portions of the streambank accessible to park visitors
  - Reduce the safety hazard presented by the existing vertical walls
  - Control erosion and provide a park user amenity

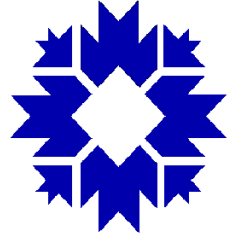
*We will spend most of our time talking about the 3<sup>rd</sup> one - it presents the most significant change*



# Cascades Trail Phase 5 and Streambank Stabilization







# New Boardwalk to Waterfall



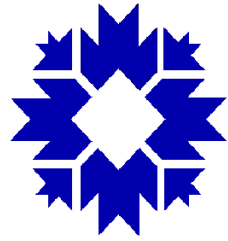
- New Trail Hub in the area between existing bridge and small structure near Waterfall Shelter



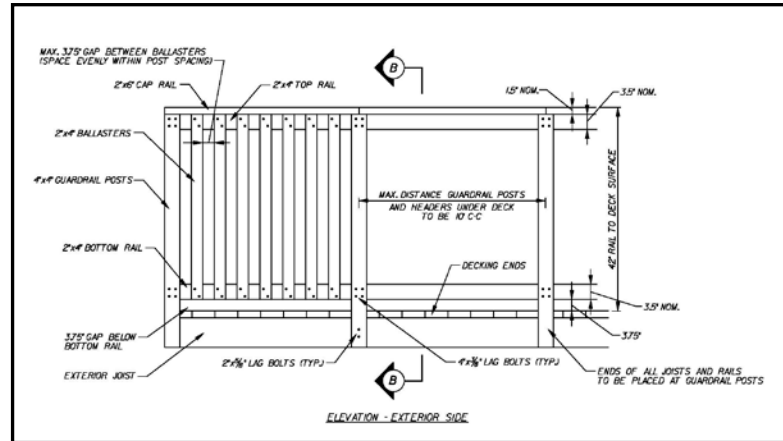
- Boardwalk to an expanded deck area with benches near the waterfall
- ADA-compliant throughout

- Waterfall trail will be pavement until wood boardwalk section to protect trees





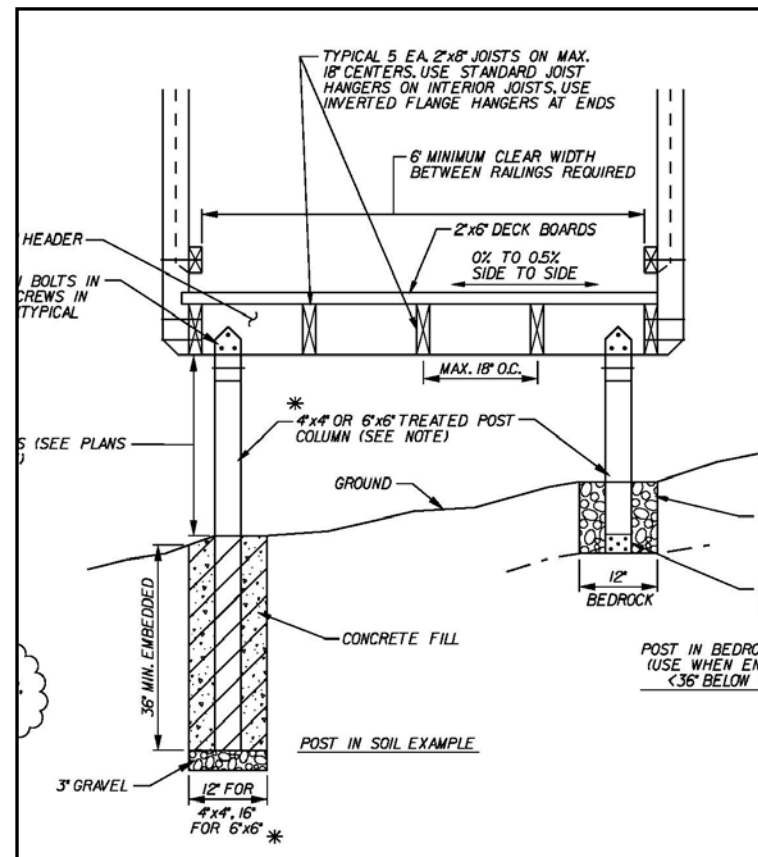
# New Boardwalk to Waterfall



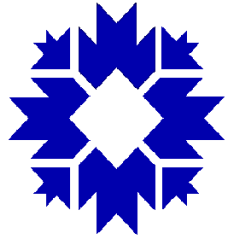
- Wooden construction
- Rails on both sides due to elevated deck and ADA requirements

- A series of ramps and landings due to steadily climbing topography

- Allow for varied spacing of support posts and also type of foundation depending on presence of rock, avoiding primary tree roots



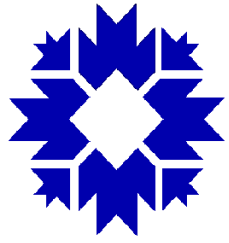




# Streambank – The problem



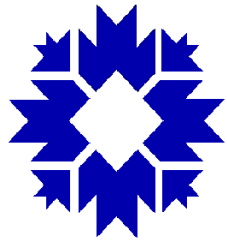




# Streambank – The problem





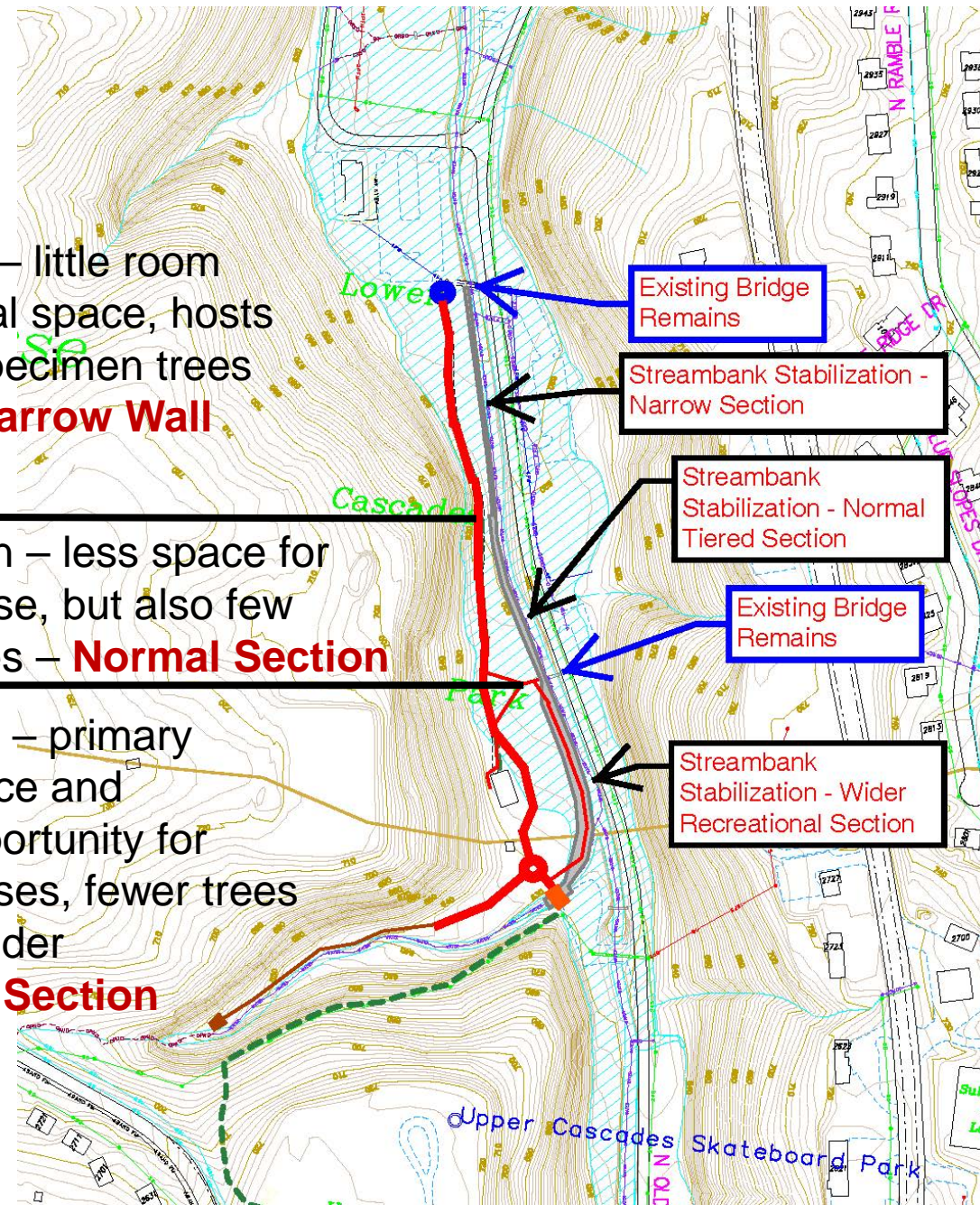


## Streambank Work Limits in 3 Sections

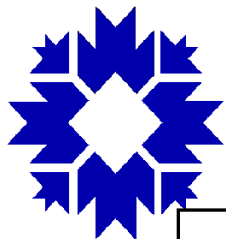
North section – little room for recreational space, hosts the primary specimen trees – calls for a **Narrow Wall Section**

Middle Section – less space for recreational use, but also few specimen trees – **Normal Section**

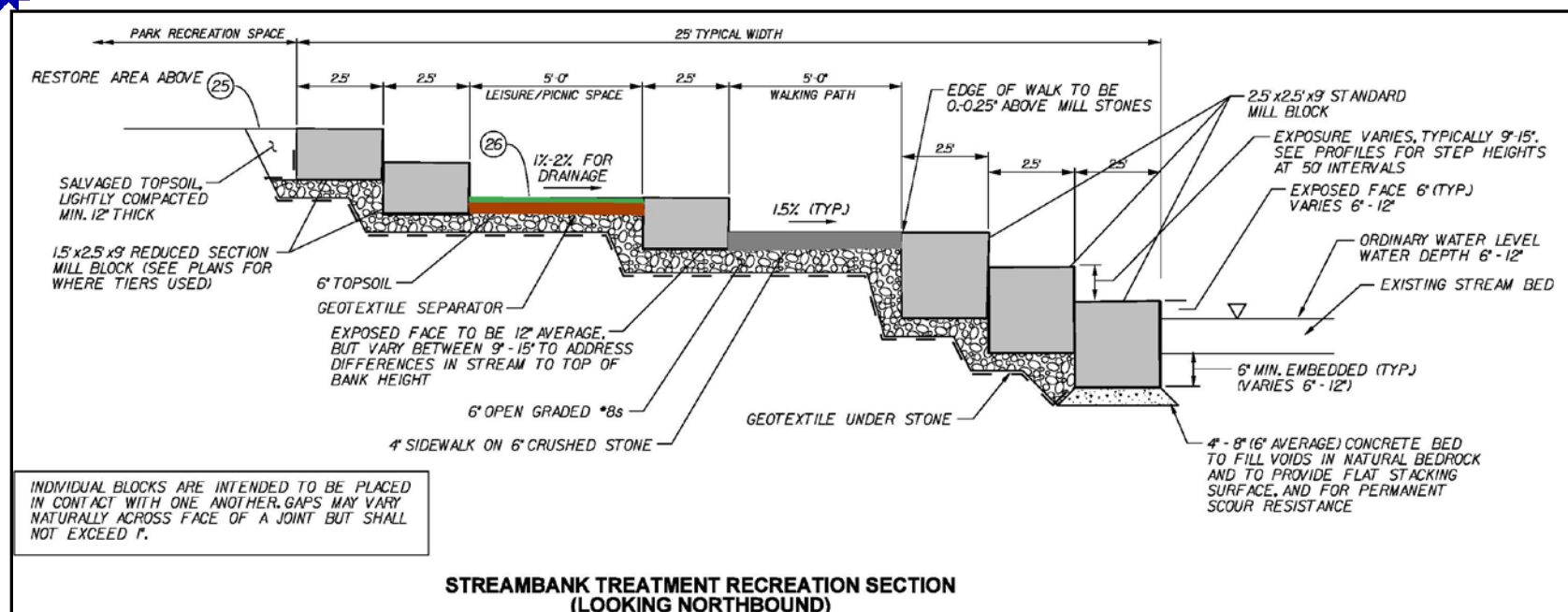
South Section – primary gathering space and maximum opportunity for recreational uses, fewer trees – allows for wider **Recreational Section**





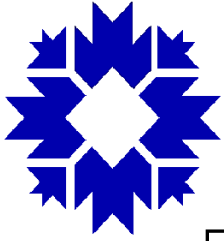


## Streambank – Recreation Section

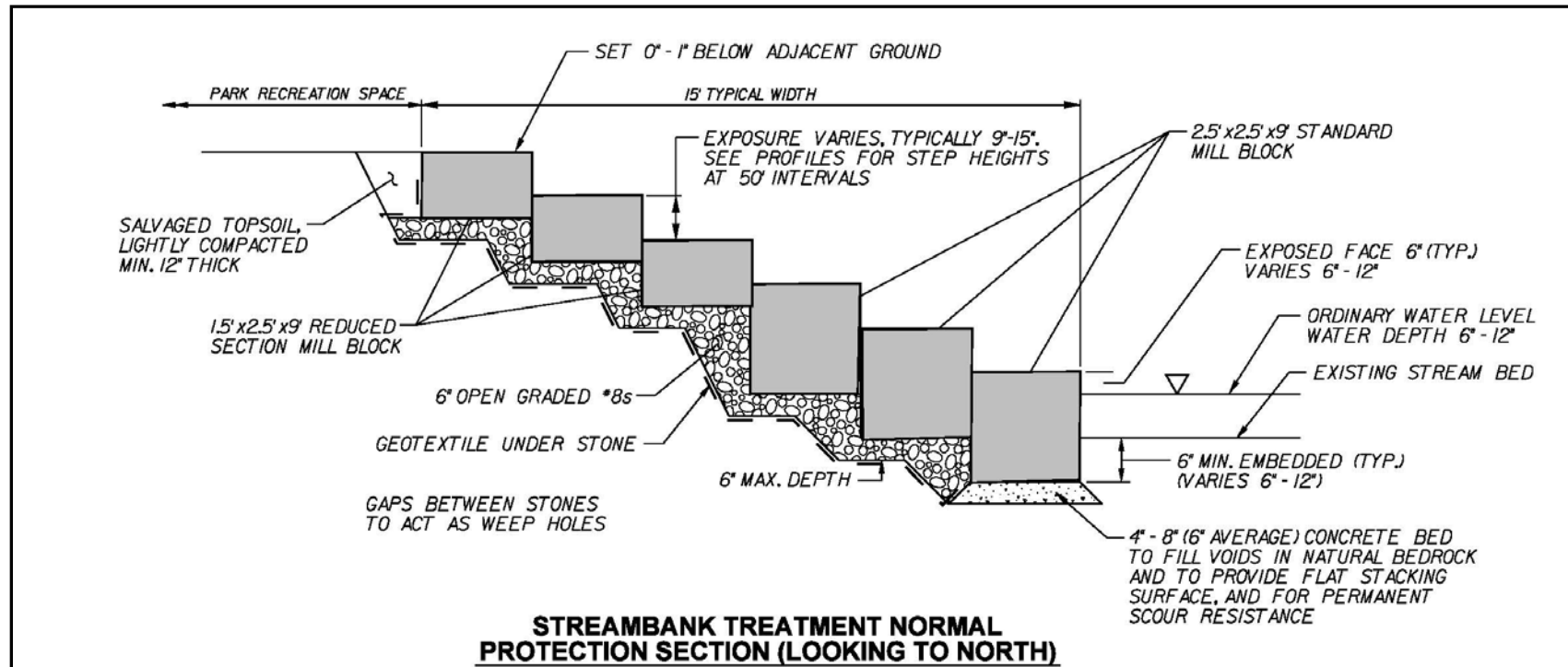


- Southern section with some of the worst erosion – between spillway and relatively new steel bridge
- Adjacent to existing gathering space
- Section includes:
  - Tiered millstones laid end of end for erosion protection/armoring
  - Offset tiers for an ADA-compliant path and a additional turf strip (picnic or other passive use)
  - Sidewalk connectivity at each end
  - Natural steps or benches, no drops >15", generally 9"-12"
  - Normal water depth 6"-12", and from 6-12" below top of first tier of stones
- Combining goals of erosion control, safety, and providing recreational use





## Streambank – Normal Section

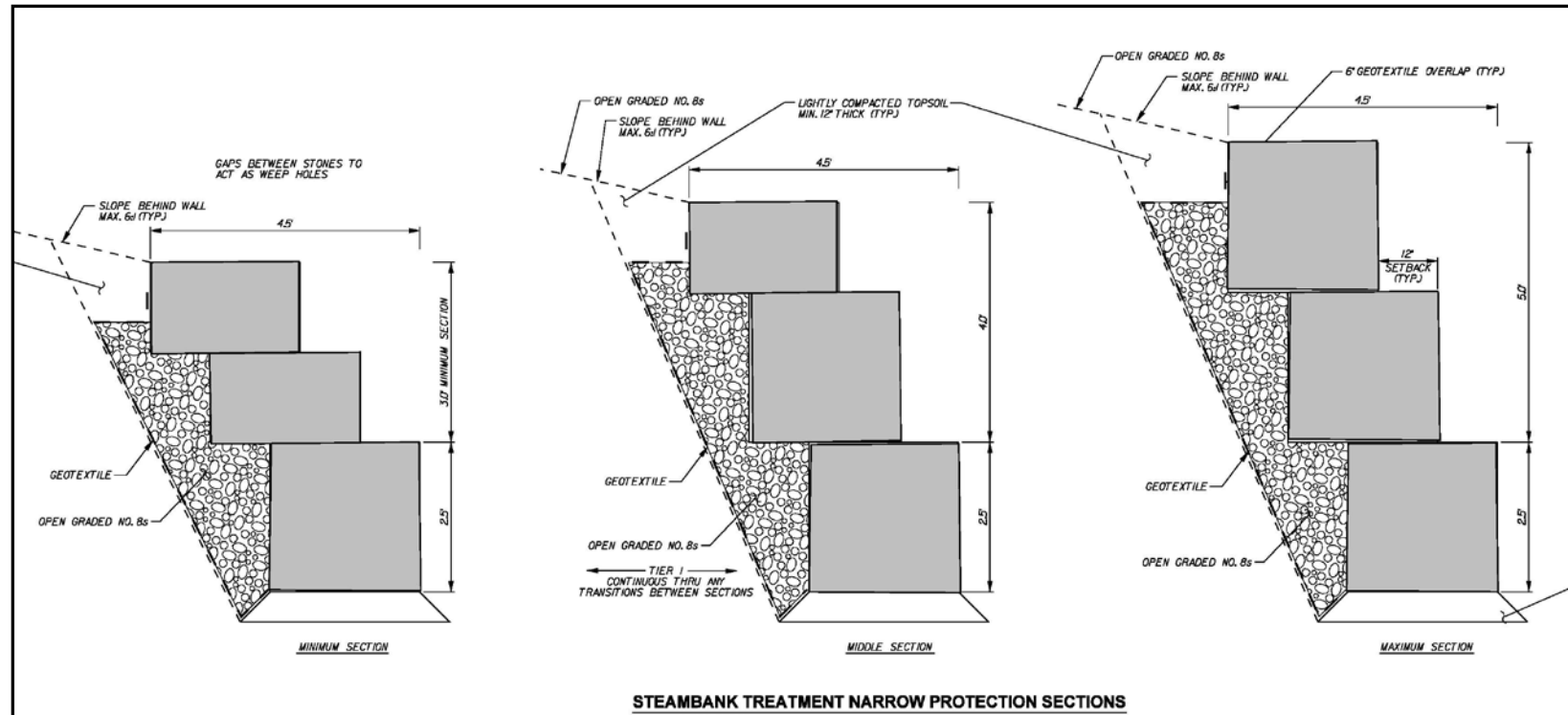


- **Middle section, not adjacent to primary green space**
  - Tiered millstones laid end of end for erosion protection/armoring
  - No offset in the tiers to conserve space, reduce tree impacts
  - Still approachable to the able-bodied and eliminates primary safety concerns
  - Natural benches, no drops >15", generally 9"-12"
  - Normal water depth 6"-12", and from 6-12" below top of first tier of stones
- **Primary goals in this section are armoring of the streambank but in an approachable / safer configuration than vertical walls**



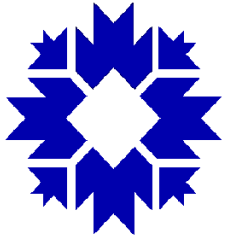


## Streambank – Narrow Section



- Northern portion, where tree impacts would be magnified if normal width section were built, but wall erosion and safety are still significant problems
  - 3 different configurations to address overall height needs 5.5'-7.5'
  - Overlapped stones to minimize the width, so also to preserve existing trees. (total wall 4.5' wide is less than current eroded condition)
  - Not intended to be approachable per se, marginally safer than the existing vertical face (Step heights 1.5' or 2.5')
- Primary goal here is protecting the streambank but giving up approachability and the potentially safer (wide) treatment in order to save the row of mature trees that are the primary character in this section





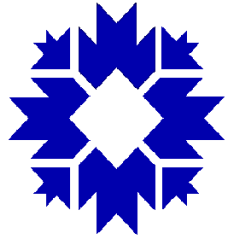
## Impacts – Trees



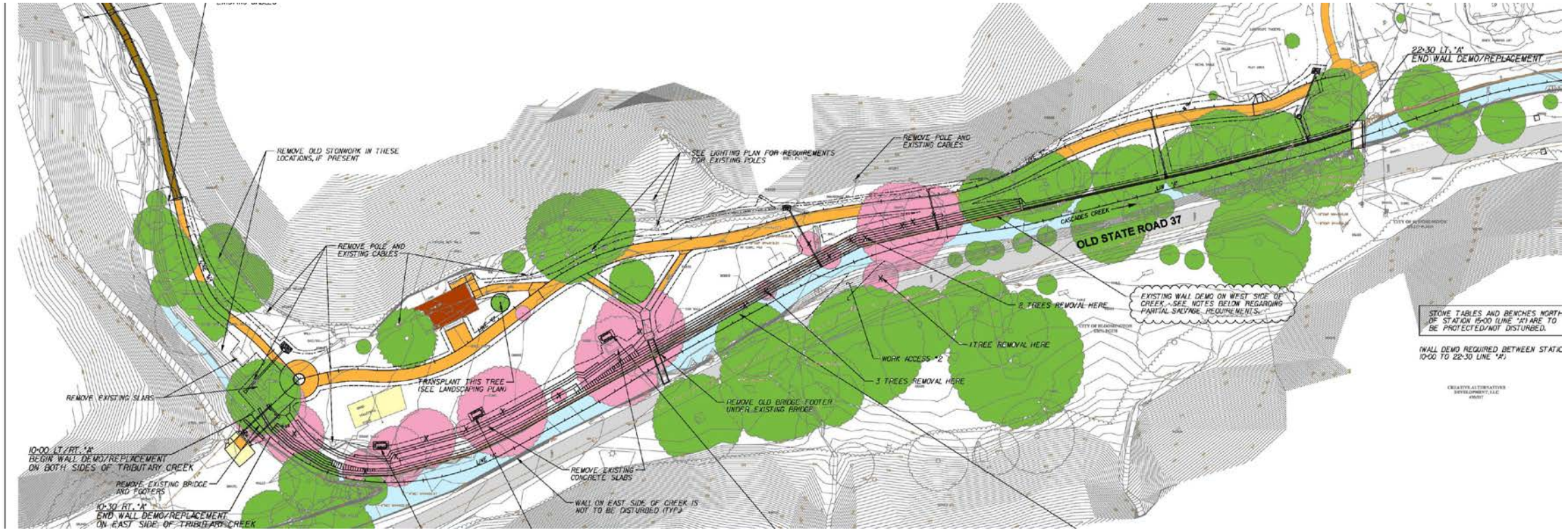
- **Trees**

- **Many large specimen trees in Lower Cascades Park that are severely impacted by creek erosion**
- **Strike a balance between required erosion control work and tree preservation, with focus on preserving the existing trees closer to playgrounds and Sycamore Shelter**
- **City and IDNR both require tree mitigation at a 5:1 replacement ratio. The project is expected to remove 23 trees and will be replaced with 115**
- **With help of City's Urban Forester, maximize replacements in the project area without compromising recreational space**





# Impacts – Tree Removals







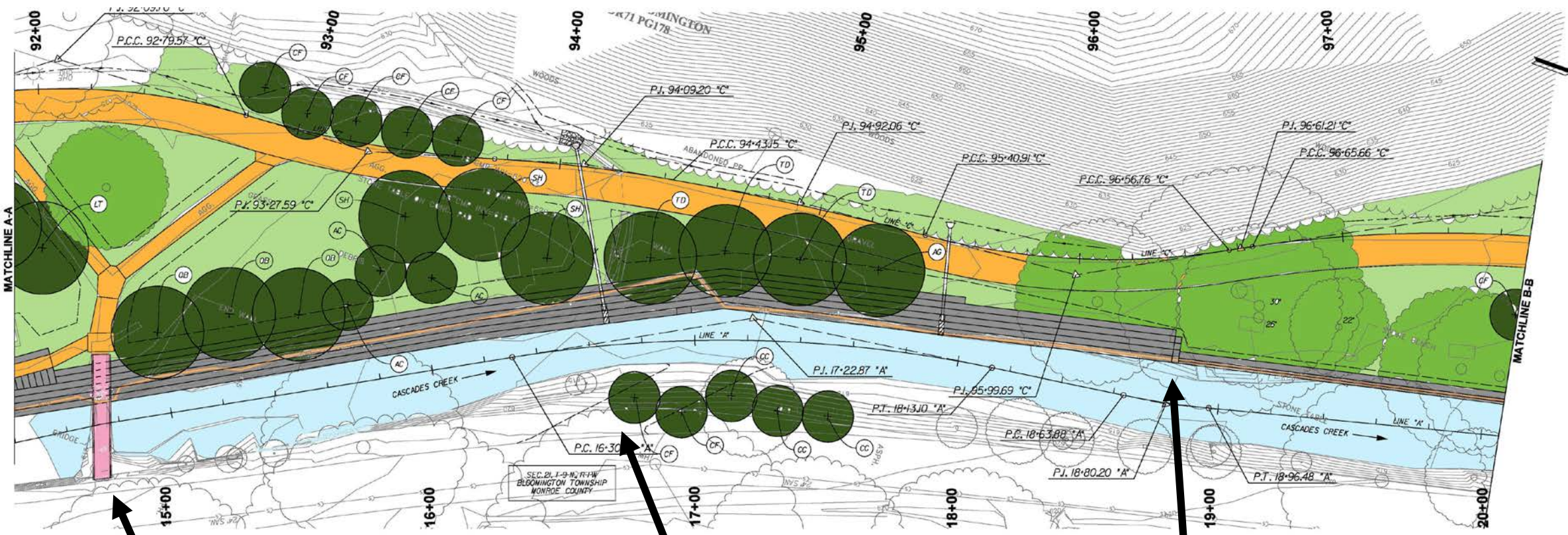
# Impacts – Tree Plantings







# Impacts – Tree Plantings



Stone to be pushed/set under existing bridge

A permitted equipment entry to the creek will be in this area to allow access to the area between bridges

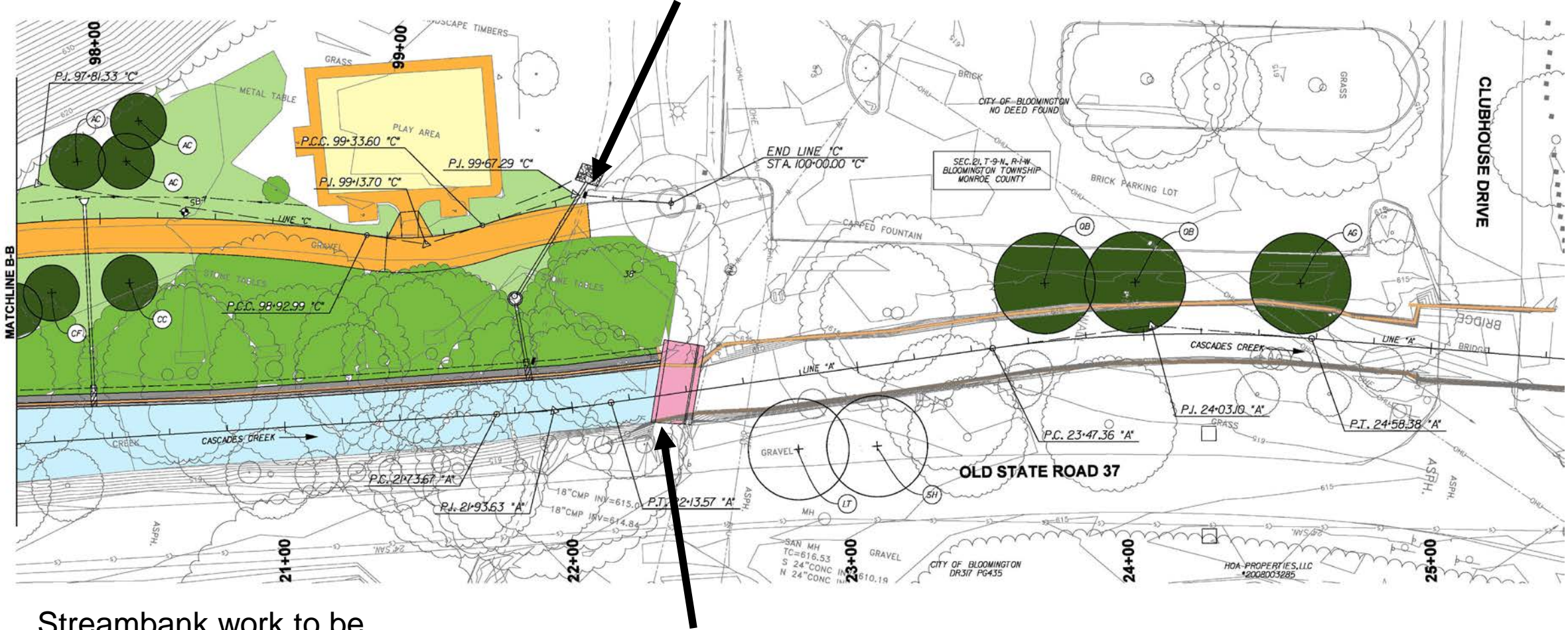
Transition from normal to narrow stone treatment





# Impacts – Tree Plantings

Trail work ends near the existing Trail hub, which is to remain



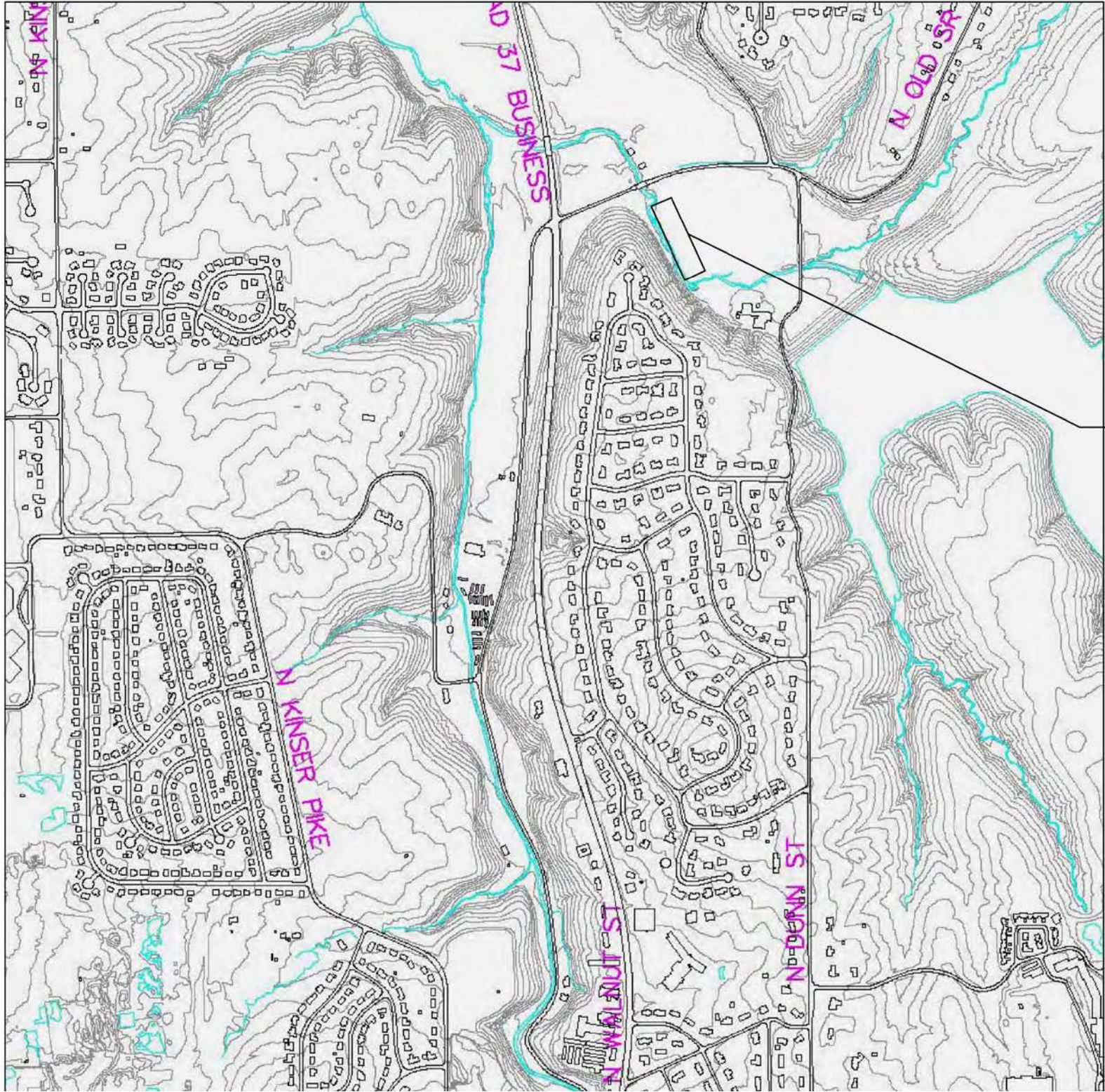
Streambank work to be completed from the road or the creek itself in order to protect the trees.

Wall work ends at the existing Arch bridge, which is to remain and be available throughout construction





# Impacts – Tree Plantings



**SECONDARY  
TREE PLANTING AREA**

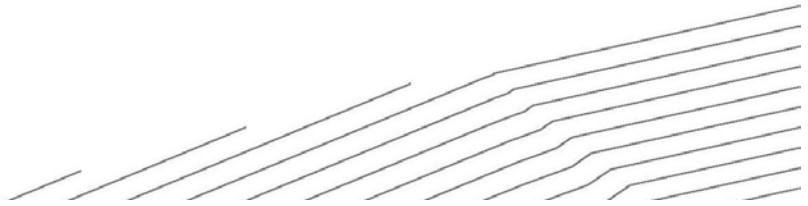




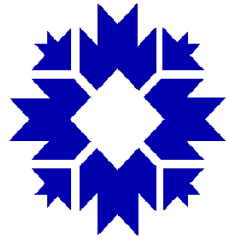
# Impacts – Tree Plantings

PLANT SCHEDULE				
Key	Scientific Name	Common Name	Size	Notes
<i>Shade Trees</i>				
AS	Acer saccharum	Sugar Maple	2.5" Cal.	B&B, Full top
SH	Carya ovata	Shagbark Hickory	2.5" Cal.	B&B, Full top
LT	Liriodendron tulipifera	Tulip	2.5" Cal.	B&B, Full top
NS	Nyssa sylvatica	Black Gum	2.5 Cal.	B&B, Full top
QB	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B, Full top
QM	Quercus macrocarpa	Bur Oak	2.5" Cal.	B&B, Full top
QS	Quercus shumardii	Shumard	2.5" Cal.	B&B, Full top
<i>Understory Trees</i>				
AC	Amelanchier canadensis	Serviceberry	2" Cal.	B&B, Single stem, Full top
AG	Aesculus glabra	Ohio Buckeye	2" Cal.	B&B, Full top
CP	Carpinus caroliniana	Carpinus caroliniana	2" Cal.	B&B, Full top
CC	Cersis canadensis	Eastern Redbud	2" Cal.	B&B, Full top
CF	Cornus florida	White Dogwood	2" Cal.	B&B, Full top
OV	Ostrya virginiana	American Hophornbeam	2" Cal.	B&B, Full top

TOTAL TREE SUMMARY		
	SHADE TREES	UNDERSTORY TREES
<b>PROJECT AREA</b>	35	25
<b>SECONDARY AREA</b>	44	11
<b>TOTALS</b>	<b>79</b>	<b>36</b>
<b>TOTAL TREES = 115 TREES (EXCEEDS 5:3 RATIO)</b>		





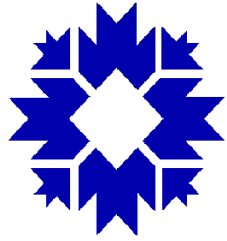


## Approximate Project Schedule

- **Primary Design Underway**
- **Right of Way Acquisition - None Required**
- **Coordination with Urban Forester - Underway**
- **Permitting Coordination** (IDNR, IDEM, and Corps of Engineers all are reviewing and will issue Individual Level Permits once satisfied) – Underway
- **Final Permit Approvals** – Dec 2020-Jan 2021
- **Complete the Design** - January 2021
- **Bidding** - January 2021
- **Construction** – Feb – Sep 2021

*Tree Removal would be the first activity due to timing restrictions from permits*





## **Contact Information**



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**Parks and Recreation Dept.**

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