

# City of Defiance Bio-Tree Trench Case Study and Lessons Learned

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Ohio Stormwater Conference – May 2019

Chad Boyer

# City of Defiance College Place Improvements





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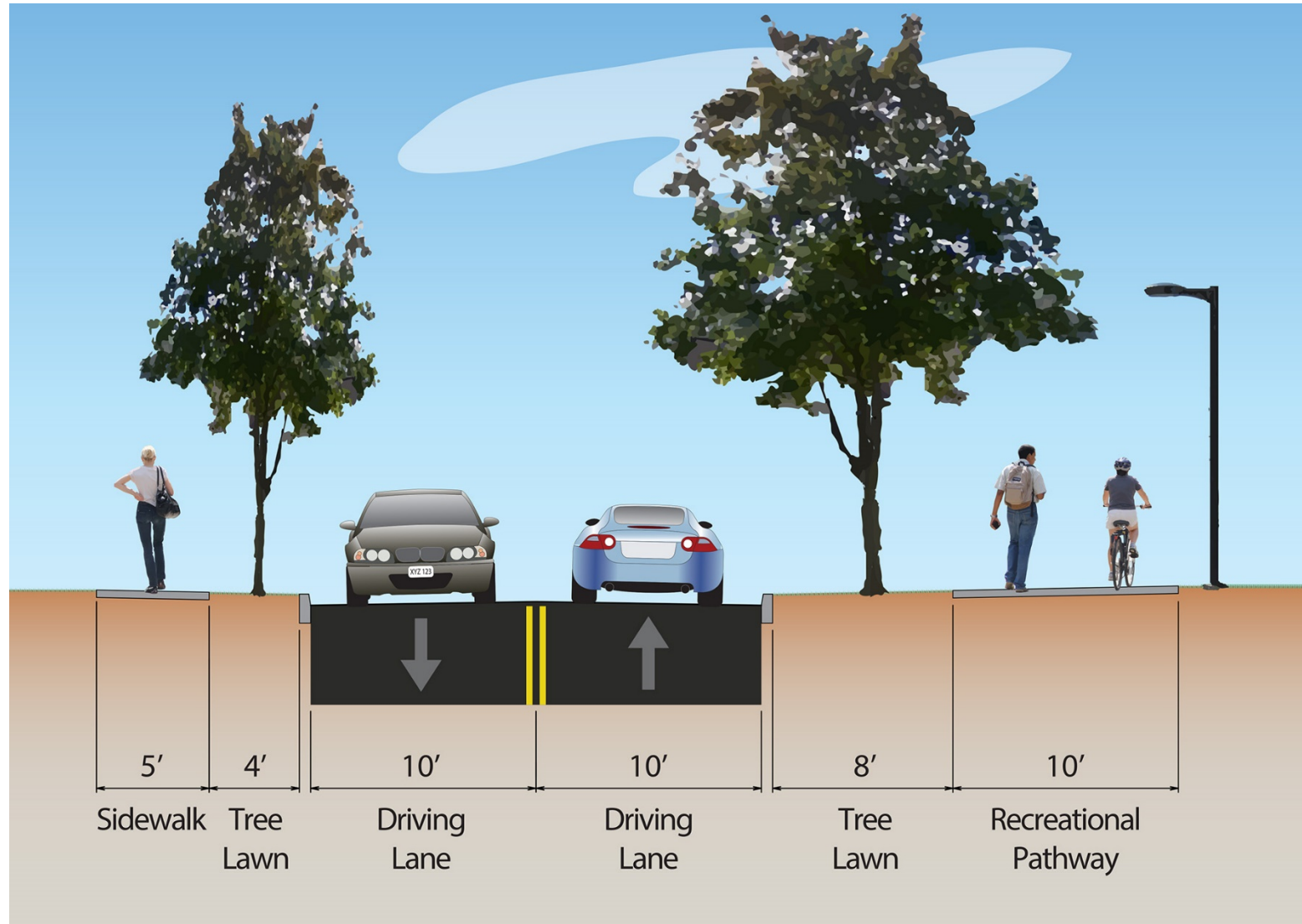




# City of Defiance College Place Improvements

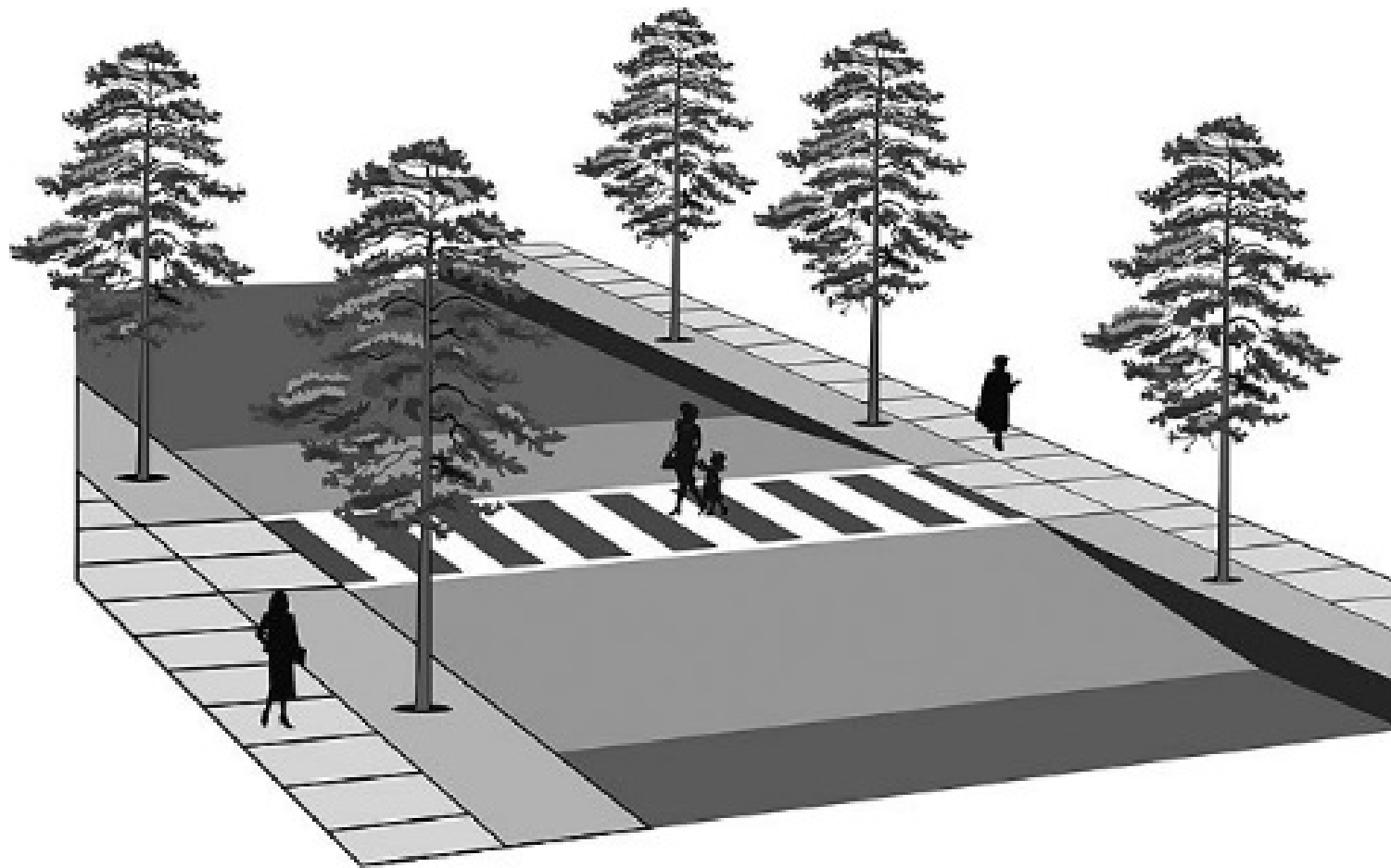


# College Place Roadway Improvements





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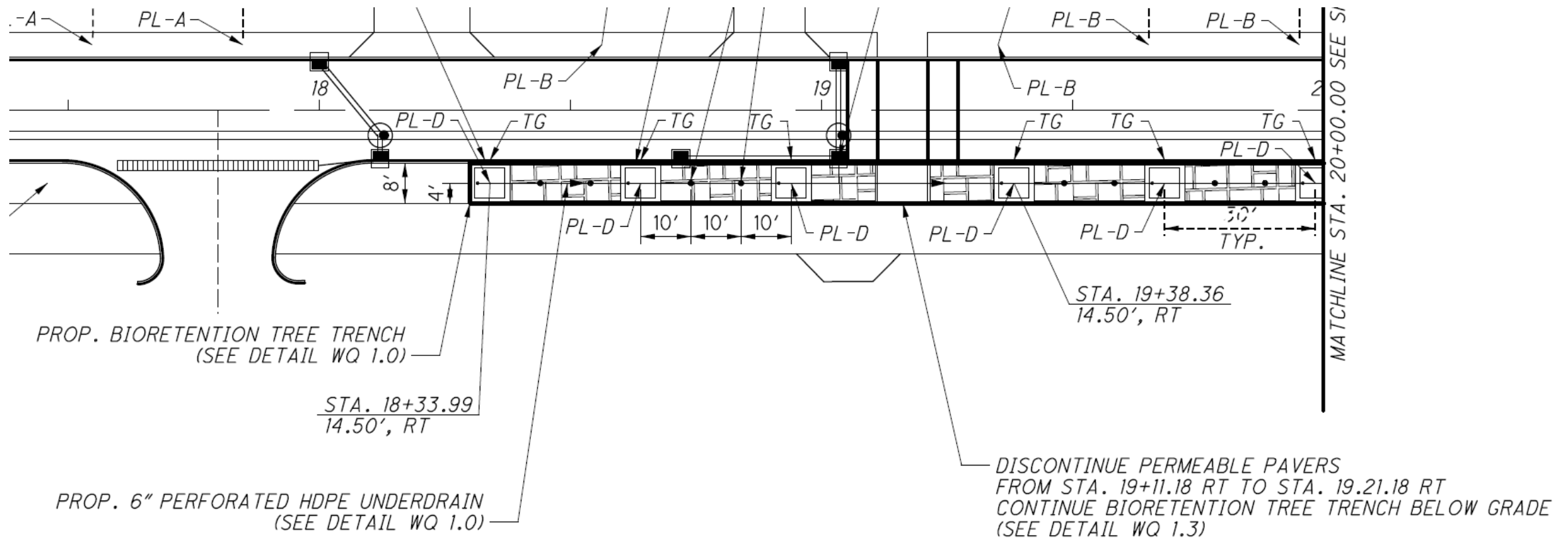


# City of Defiance College Place Improvements





# Bio-Tree Trench Layout

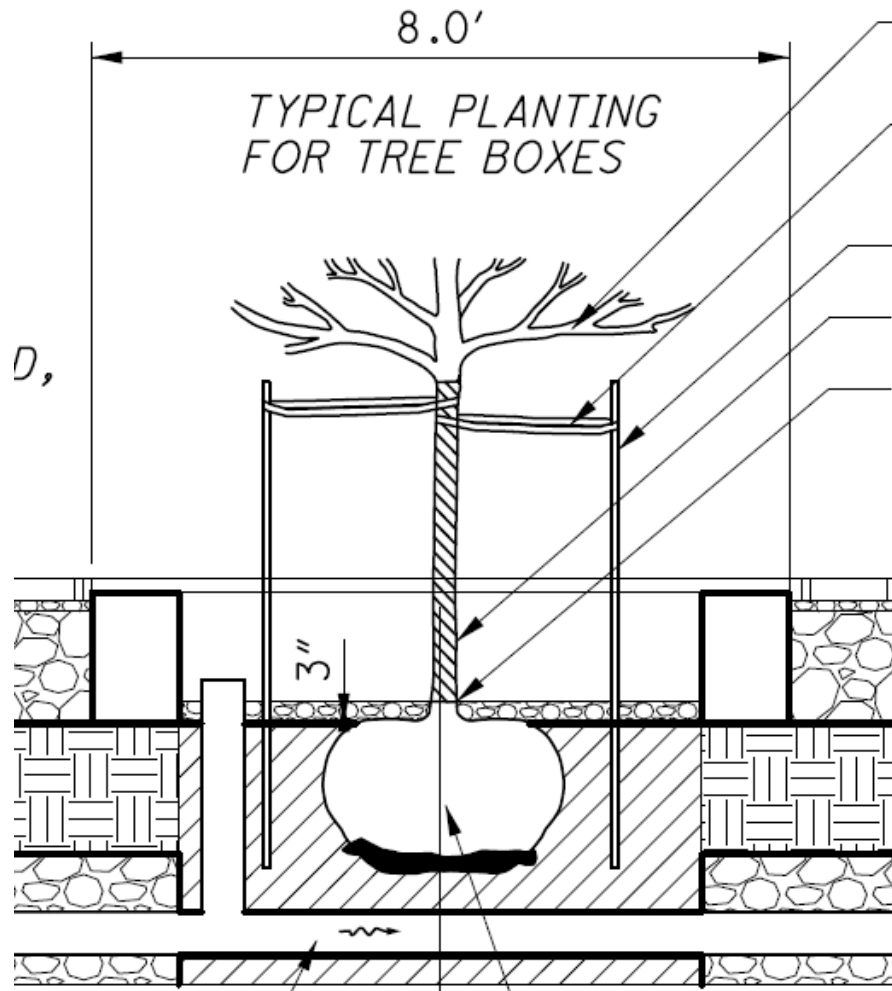


# Bio-Tree Trench Design



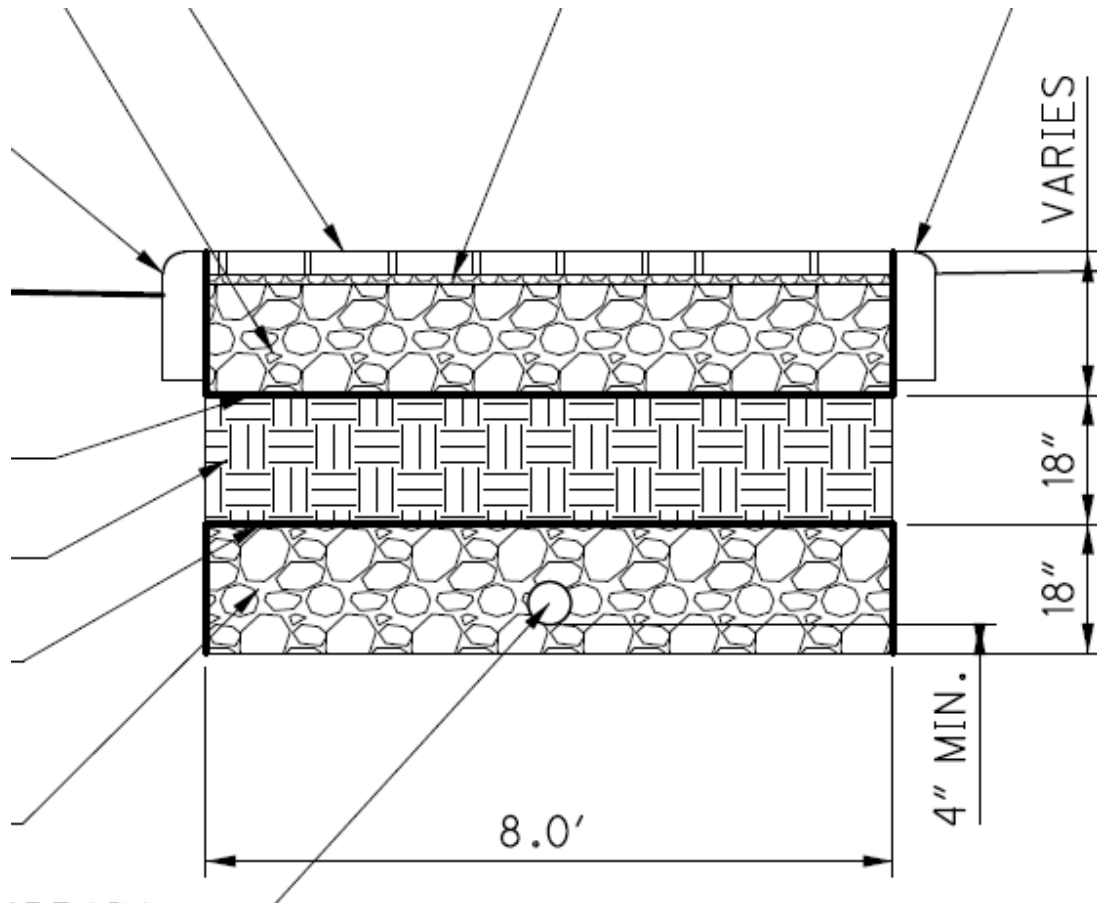


# Bio-Tree Trench Design



- Components:
  - Bioretention Media
  - Permeable Pavers
  - Tree Boxes and Grates
  - Underdrains
  - Curb Inlets
  - Plantings

# Bio-Tree Trench Design

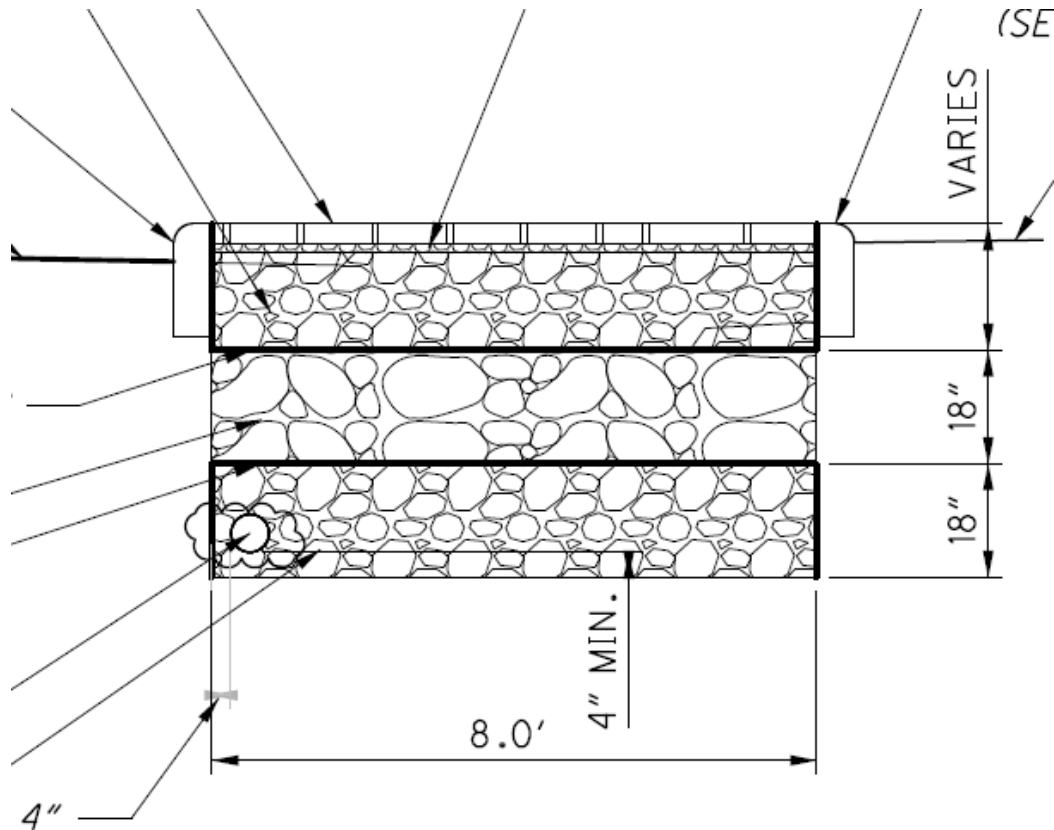


- Initial Permeable Paver Sections:

- Permeable Pavers
- Double Washed Aggregate
- Geotextile Fabric
- Native Soil
- Geotextile Fabric
- Double Washed Aggregate
- Underdrain



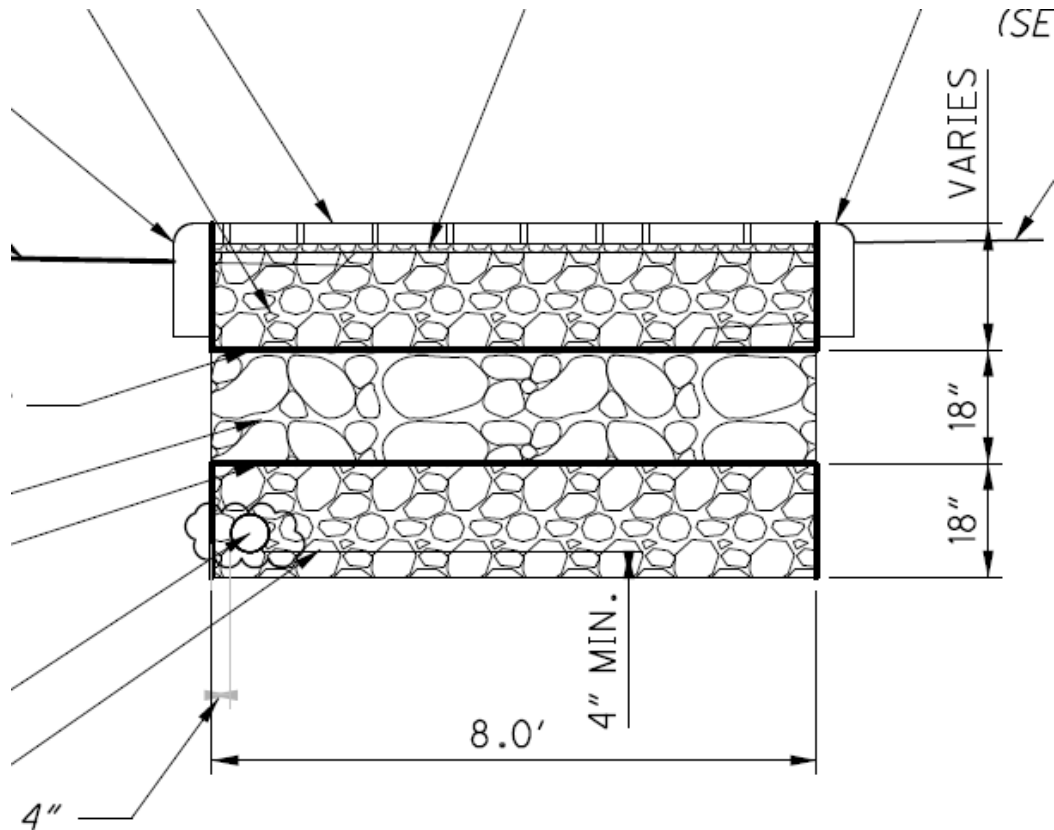
# Bio-Tree Trench Design



## • Revised Permeable Paver Sections:

- Permeable Pavers
- Double Washed Aggregate
- Geotextile Fabric
- Double Washed Large Aggregate
- Geotextile Fabric
- Double Washed Small Aggregate
- Underdrain

# Bio-Tree Trench Design

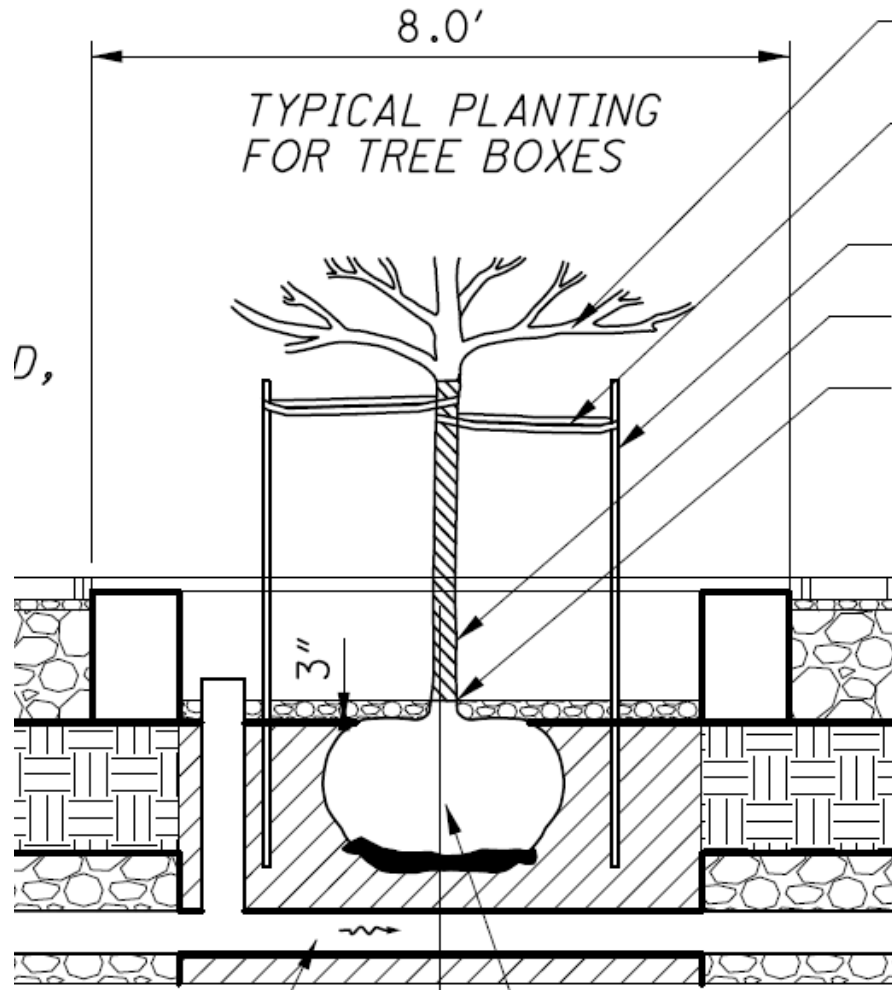


## • Potential Permeable Paver Sections:

- Permeable Pavers
- Double Washed Aggregate
- Geotextile Fabric
- CU-Structural Soil
- Geotextile Fabric
- Double Washed Small Aggregate
- Underdrain

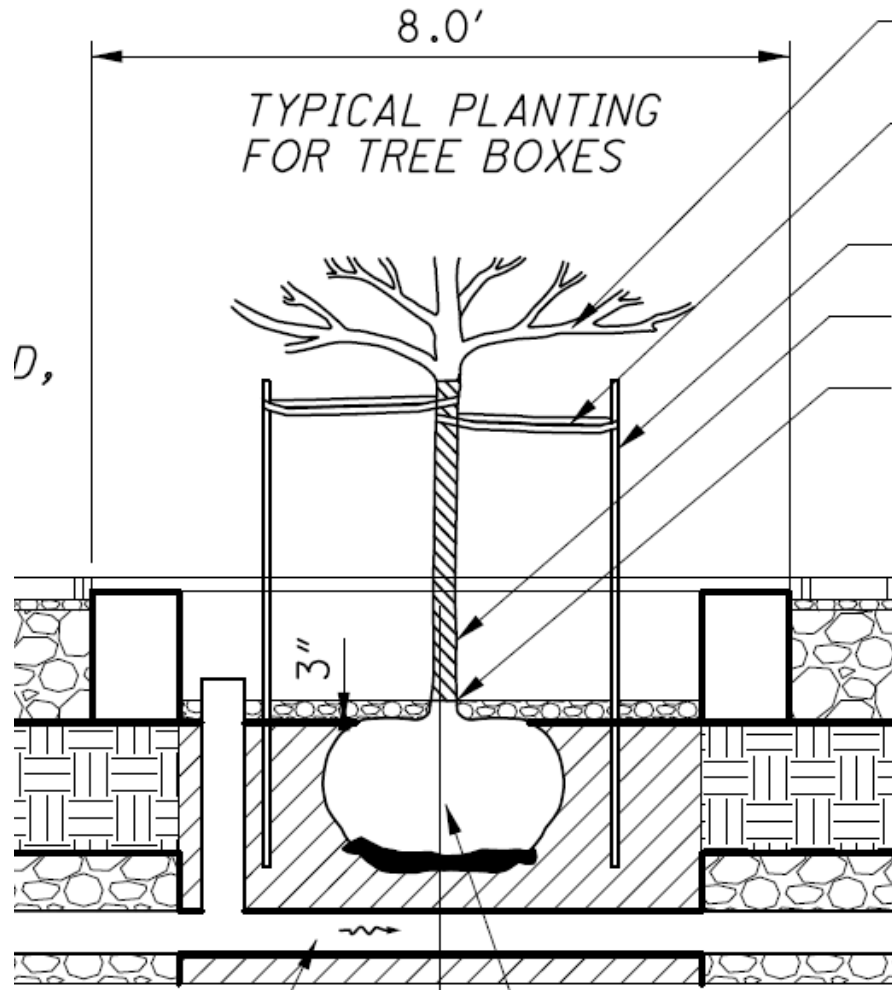


# Tree Specifications



- 1-1/2" Caliper, Acer Campestre
- Common Name: Hedge Maple
- Height?
- Planting Depth?
- Root Ball Depth?
- Water Tolerance?
- Underdrain Location?

# Tree Specifications



- 1-1/2" Caliper, Acer Campestre
- Common Name: Hedge Maple
- Specify a height as well as caliper
- Take the lowered height into account when setting the height.
- If the root ball will be within the water storage zone make sure it is water tolerant.
- Offset the underdrain from the center of the tree box.

# Questions?

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