

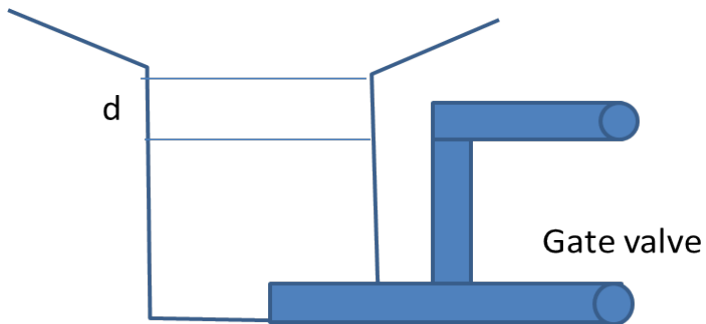
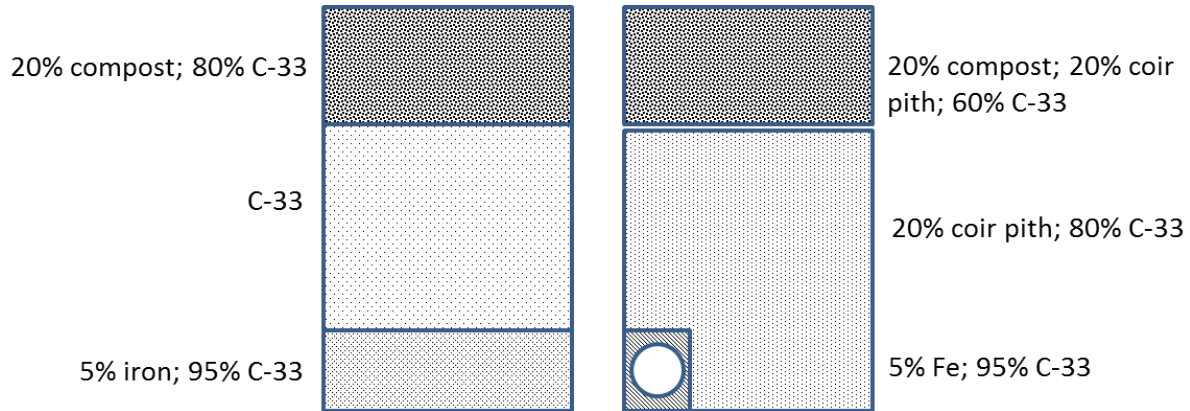
Bioretention workshop – February 26-27

- Infiltration rates
 - D soil goes to 0.06 in/hr, consistent with the MIDS calculator
 - SM goes to 0.3 in/hr
 - Rest of the table stays the same
 - Use most restrictive layer within 3 feet of the bottom of the system – changed from 5 feet (contingent on Mike F. review of Wisconsin information)
 - Permeable pavement should have a different set of values
 - For A,B,C/D soils (seasonal high water table) – use D soil rate

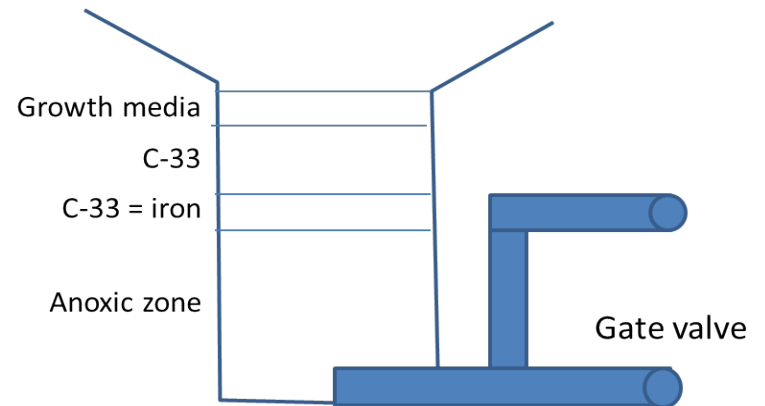
Other - bioretention

- 18 max depth for bioretention
- 4 feet max depth for infiltration system
- Recommend 5 acres or less for contributing area
- Mixes – issue of P output and corresponding credit
- Vegetation type affects volume credit, but not included in calculator
- Safety factors still being discussed – possibly 2
- Max infiltration rate = 8 in/hr

Bioretention design options



D = 12" min for A/B
D = 18" min for C/D



Other

- Permeable pavement – separate infiltration table
- Permeable pavement – safety factor greater than that for bioretention; possibly 2.5
- Green roofs – questionable P credit

Kestrel contract – urban forestry (trees)

Task 2 – general information

- Urban forestry concepts
- Benefits of urban forestry
- Constraints
- BMP variants
- Types of trees appropriate as BMPs
- Factors affecting tree performance

Task 3 – tree species

- Name
- Type
- Native or not
- Appropriate locations for MN
- Canopy coverage
- Tolerance (e.g. salt, drought)
- Additional benefits

Task 4 – design specs

- Tree quality
- Soil characteristics
- Tree planting

- Drawings as appropriate

Task 5 – construction specs

- Identify construction considerations (e.g. soil, cold climate, groundwater)
- Identify cover considerations (e.g. compost, ripping)
- Drawings as appropriate
- Guidelines or specs?

Task 6 – construction adjacent to existing trees

- Identify practices that may adversely impact trees
- Best practices for minimizing impacts from construction activities
- Post construction compaction
- Mitigation practices

Task 7 – maintenance guidelines

- Identify existing maintenance guidelines
- Identify maintenance considerations (e.g. soil suitability, cold climate)
- Maintenance checklist/inspection form

Task 8 – monitoring (assessment)

- Identify information that should be in a tree inventory/assessment

Task 9 - certification

- Need to discuss with Contractor

Task 10 – street sweeping

- Identify existing street sweeping guidance for mitigation of P impacts associated with seasonal tree debris
- Recommend sweeping practices

Task 11 – fact sheet

- Overview of the BMP
- Summary of design criteria
- Benefits
- Limitations or constraints
- General description
- Management suitability
- Mechanisms
- Pollutant removal (phosphorus, and total suspended solids)
- Site factors
- Illustrations

Task 12 – case studies

Task 13 - credits

The Contractor will prepare a report summarizing design criteria and associated volume reduction stormwater credits for trees including an executive summary, recommendations, specific discussion, and conclusion. The report shall include credits for water volume, phosphorus, and total suspended solids. The discussion of credits shall be consistent with credits provided in the most recent version of the MIDS calculator and include graphics used in the MIDS calculator.