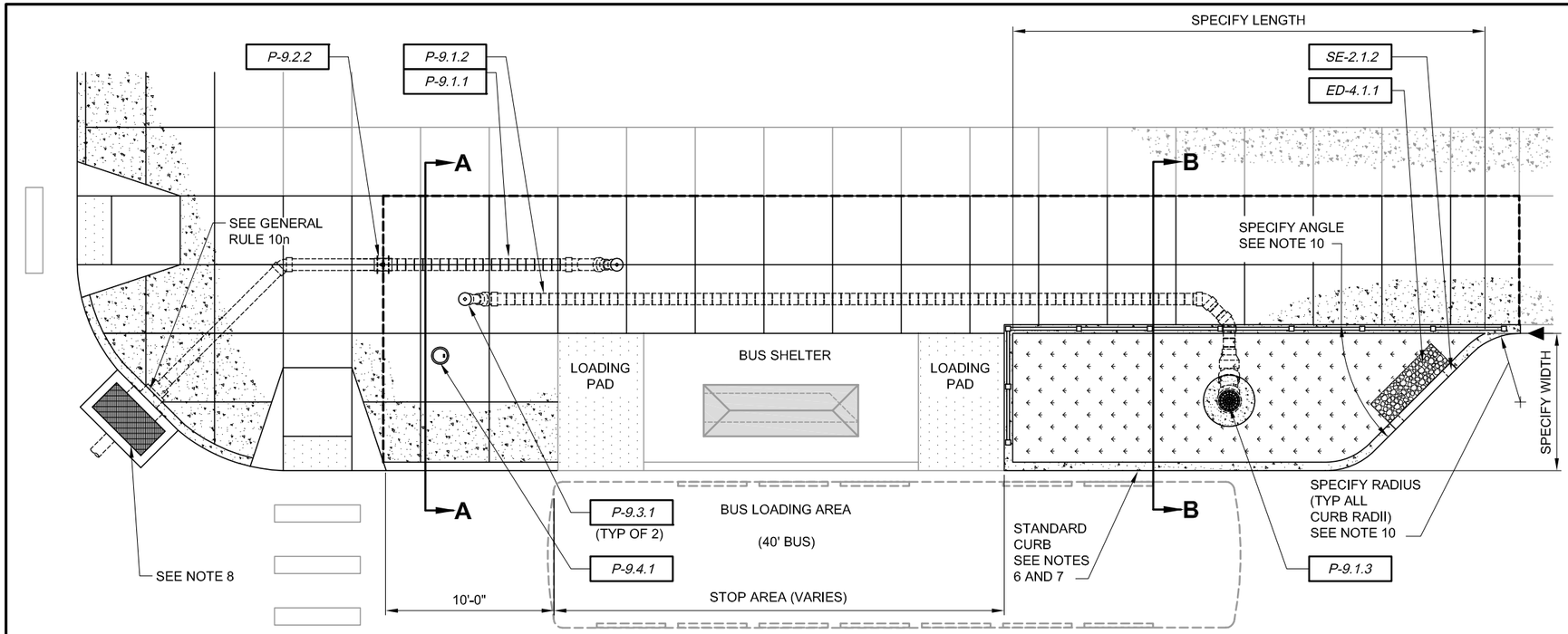
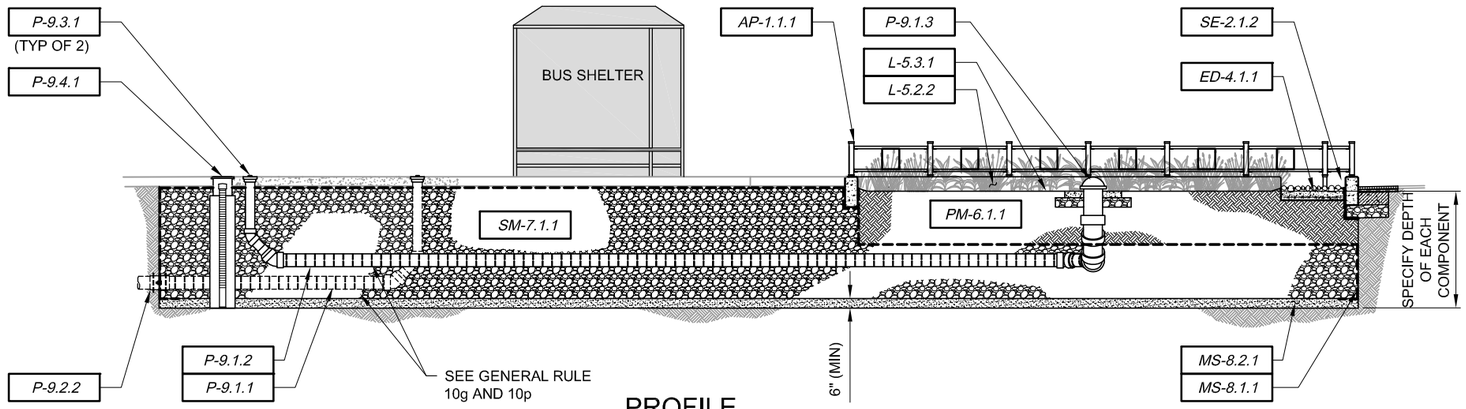
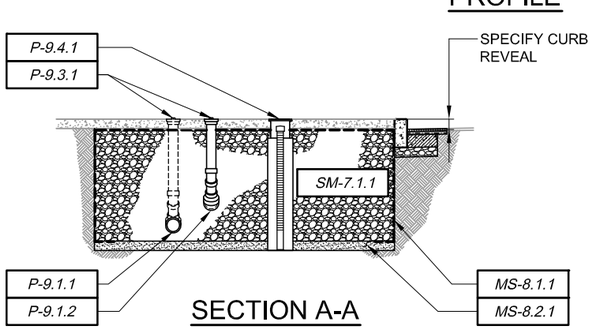


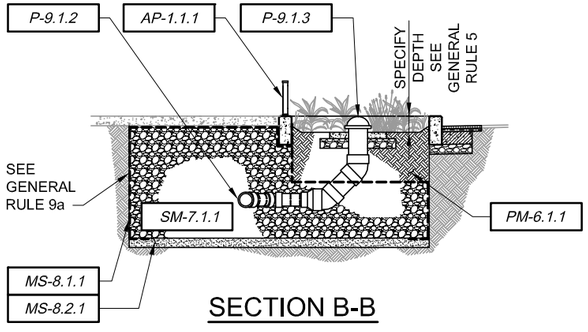
PLAN



PROFILE



SECTION A-A



SECTION B-B

NOTES TO DESIGNER:

1. This design detail should be adapted to the specific engineered design of a respective installation.
2. The lowest planting media surface in stormwater bump-outs should be level along the alignment of the street. A mild slope no greater than 1 percent is acceptable but a level surface is recommended. If surrounding slopes are steep, impermeable barriers such as surface check dams can help maintain a level surface. Note this does not apply to the cross-grading, if used, from the perimeter of the bump-out down to the lowest planting media surface.
3. Designer should consider the height of vegetation both at installation and anticipated maturity. Both heights should be considered in the context of the stormwater bump-out's plan dimensions, depth, and surrounding area protection and vegetation selected accordingly. Note that with the exception of trees, maximum vegetation height at maturity should be no greater than 36-inches above the surrounding sidewalk elevation. Also, plant selection and placement should be done to prevent encroachment of plants outside of the limits of the stormwater bump-out and in consideration of maintaining adequate sight lines based on the placement of the stormwater bump-out.
4. The ponding depth of water in the stormwater bump-outs is correlated to a variety of site specific factors such as surrounding grades, offsets between stormwater entrance elevations and top of planting media, offsets between stormwater entrance and overflow elevations, desired freeboard, the vegetation selected for the stormwater bump-out, and the design depth of the stormwater bump-out. The designer should evaluate site specific conditions such as those mentioned in order to set the design ponding depth in the stormwater bump-out. As a point of reference, ponding depths for PWD's Green Street stormwater bump-outs have typically been between 2-inches to 6-inches.
5. Although not shown, extending the vegetated area into the limits of the sidewalk is permitted. However, any requirements/guidelines for other SMPs located in the sidewalk, such as stormwater planters, would apply.
6. Curbs around stormwater bump-outs on City Streets will follow the same requirements as normal curbs and shall be within a height range of 4" to 8". Designer will select a height within that range based on applicable site conditions and the curb height shall be consistent along the length of the bump-out.
7. Curb height around stormwater bump-outs shall be maximized at corner bump-outs as much as possible and be a consistent height between ADA ramps.
8. When installing corner stormwater bump-outs, gutter flow must be maintained to an existing downstream inlet or a new inlet must be installed along the new curb line as required. Location of new inlet shown can vary and must be evaluated on a case by case basis.
9. Opening size and placement to be determined by designer. Openings along outside edge of bump-out, if used, must include a wheel guard.
10. Designer should determine the appropriate geometry for bump-outs based on good engineering practice and judgment of the site. This includes the angle of curb that is cross to the travel lane and all curb radii. A typical bump-out geometry that is often used and approved in Philadelphia includes a curb at a 45 degree angle to the travel lane. All curb wrapping corners shall follow guidance on curb/corner radii included in the city of *Philadelphia Complete Streets Design Handbook.*
11. Refer to *Septa Bus Stop Design Guidelines* for minimum requirements for loading pads, waiting areas, pedestrian paths, and clear areas.
12. Although not shown here, delineators should be placed along the bump-out curb parallel to the travel lane on snow emergency routes.

APPLICABLE DESIGN COMPONENTS

(AP) Area Protection
- ☑ 1.1.1 Fencing

(ED) Energy Dissipation
- ☑ 4.1.1 Splash Pad

(L) Landscaping
- ☑ 5.2.2 Plants, Grasses, and Shrubs
- ☑ 5.3.1 Mulch

(MS) Media Separation
- ☑ 8.1.1 Geotextile
- ☑ 8.2.1 Sand Filter

(P) Piping
- ☑ 9.1.1 Underdrain
- ☑ 9.1.2 Distribution Pipe
- ☑ 9.1.3 Domed Riser
- ☑ 9.2.2 Anti-seep Collar
- ☑ 9.3.1 Cleanout
- ☑ 9.4.1 Observation Well

(PM) Planting Media
- ☑ 6.1.1 Engineered Soil

(SE) Stormwater Entrance
- ☑ 2.1.2 Depressed Curb

(SM) Storage Media
- ☑ 7.1.1 Stone