

ATTACHMENT C
Requirements for
Civil/Land Development Elements

The following project elements shall be part of the civil consulting engineer's services:

- Bicycle and pedestrian pathway as shown on documents furnished by owner
- Bicycle parking facility and transit station for (UD/DART/Newark)
- Stormwater facilities for management of quality, quantity, and volume
- Stream bank stabilization for problem area defined on documents furnished by owner
- Wastewater pumping station for problem area defined by documents furnished by owner
- Preliminary Construction plans to support Environmental, Structural and Transportation disciplines to include:
 - Existing conditions and demolition plan (if necessary)
 - Site Grading / General Development Plans
 - Stormwater Management Plan and Details
 - Utility Improvement Plans (if necessary)
 - Erosion and Sediment Control Plan
 - Maintenance of traffic

Project elements need to be designed in accordance with industry standard.

At a minimum, the design firm will provide the following:

1. Identification of approvals and permits required to construct all elements of the project including treatment facilities, as well as presentation of the projected schedule to acquire all permits and an assessment of the likelihood of obtaining these permits.
2. Identification and discussion of required regulatory project approvals (which are not permits) such as flood plain encroachment, wetland impact, and riparian buffer impact. This discussion should, at a minimum, include a list of approving agencies, schedules for obtaining (critical path) approvals, difficulties likely to be faced, and likelihood of obtaining all needed approvals.

3. Construction plans with notes and details to a 50% level of completion, and supporting reports/computations of preliminary design effort. The construction package shall include civil/site engineering for:
 - Environmental Elements such as stormwater, wetland, stream and wastewater facilities;
 - Structural Elements such as pedestrian bridge, retaining wall, and observation tower; and
 - Transportation Elements.
4. Evaluation, analysis and the preliminary design of a new/expanded stormwater handling facilities for quality, quantity and volume. The location(s) of stormwater management facility(ies) should be restricted to areas where sufficient civil/site development data is available. At a minimum design efforts shall include analyses of capacity, function, outlet structure, outlet conveyance, design assumptions, required permits and approvals, impacts to regulated wetlands, and the conveyance system from the project elements to the storm water management facility.
5. Wastewater pumping station design (50% design effort) to mitigate sewer burden and support environmental group in addressing regional sewer issues. At a minimum, the civil group will use surplus daily flow and peak rate information provided by the environmental group, and design a facility to deliver the waste to an existing or new system. Deliverable will consist of design computations supporting forcemain sizing, horizontal and vertical planning, and static and dynamic energy loss calculations. This is an individual assignment and is due at 6pm on November 12, 2007.
6. Hydraulic and hydrologic improvements to Paul Run. The deliverable will be a team-discipline assignment, and consist of plan view, profiles (if necessary), cross sections, details and supporting computations. This assignment will be prepared with cooperation of the associated team's environmental consultants. The assignment is due at 6pm on December 3, 2007.
7. Since the new bicycle/pedestrian pathway will promote multimodal transportation to the central business district of Newark, a new bicycle parking area is required adjacent to Main Street. A minimum of 24 spaces shall be provided. Additionally, this area shall serve as a new transit station for (UD/DART and Newark) and shall provide a partially enclosed structure for waiting multi-modal transients.
8. Estimates of probable cost for construction materials and labor to meet project need.