CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT
9611 SE 36TH STREET | MERCER ISLAND, WA 98040
PHONE: 206.275.7605 | www.mercergov.org

ENGINEERING PLAN SUBMITTAL REQUIREMENTS

The following are engineering submittal requirements for Site/Utility plans for private development projects:

Existing Conditions

1. Property boundary with bearings and distances (e.g., dimensions)
2. Existing access to the residence from the nearest public roadway
3. Abutting streets, access roads, and shared driveways
4. Existing easements across and adjacent to the property
5. Existing public and private development including structures (e.g., buildings, carports, garages, decks, walls, rockeries), other hard surfaces (e.g., patios, driveways, sidewalks), and utilities (e.g., water, sewer, underground power, telephone, cable television [CATV]) on and adjacent to the site if publicly available
6. Approximate locations of existing stormwater system components (e.g., ditches, on-site stormwater management best management practices [BMPs], treatment facilities, and flow control facilities)
7. Storm drainage pipe location, size, type, and flow direction
8. Downspouts and building footing drain locations
9. Catch basin location, rim elevation, and invert elevation
10. Minor hydrologic features including seeps, springs, closed depression areas, and drainage swales
11. Major hydrologic features with a streams/watercourses, wetland, and water body survey and classification report showing wetland and buffer boundaries
12. Flood hazard areas on or adjacent to the site, if present
13. Geologic Hazard areas and associated buffer requirements
14. Aquifer and wellhead protection areas on or adjacent to the site, if present
15. Topographic features that may act as natural stormwater storage, infiltration, or conveyance
16. Direction and location of drainage entering and leaving the site from adjacent properties
17. Existing trees (greater than or equal to 10 inches in diameter) including size, species, and driplines
18. When required, soils report prepared by a professional soil scientist certified by the Soil Science Society of America (or an equivalent national program), a locally licensed on-site sewage designer, or by other suitably trained persons working under the supervision of a professional engineer, geologist, hydrogeologist, or engineering geologist registered in the State of Washington
19. If native soil and vegetation protection areas are proposed, provide a survey of existing native vegetation cover by a licensed architect, arborist, qualified biologist or project proponent identifying any forest areas on the site and a plan to protect those areas

Proposed Temporary Erosion and Sediment Control

Construction SWPPP Narrative

Submit a Construction Stormwater Pollution Plan (SWPPP) Narrative. Projects under 5,000 square feet of new plus replaced hard surfaces may be able to use the City's Small Project Construction SWPPP Narrative template (Worksheet B). The Construction SWPPP Narrative should always include the following:

1. Description of how each of the 13 Elements has been addressed
2. Type and location of BMPs used to satisfy each of the required elements
3. Total project area
4. Total proposed hard surface area
5. Total proposed area to be disturbed, including off-site borrow and fill areas
6. Total volume of proposed cut and fill
7. Net increase in impervious surface
8. Description of existing topography, vegetation, and drainage, and building structures
9. Description of downstream drainage path leading from the site to the receiving body of water
10. Description of on-site soils
11. Proposed construction schedule
12. Identification of property owner responsible for initiation of bonds and/or other financial securities

The Construction SWPPP Narrative should include the following when applicable:

1. Written justification identifying the reason an element is not applicable to the project
2. Description of adjacent areas, including streams, lakes, wetlands, residential areas, and roads that may be affected by the construction project
3. Description of critical areas that receive runoff from the site up to one-quarter mile away
4. Special requirements and provisions for working near or within critical areas
5. scription of how upstream drainage areas may affect the site
6. Description of potential erosion problems on site
7. Construction sequence and phasing (if proposed)
8. Engineering design calculations

Temporary Erosion and Sediment Control Plan

The temporary erosion and sediment control (TESC) plan prepared by a licensed civil engineer in the State of Washington should include the following:

1. Vicinity map
2. Applicable erosion and sediment control notes
3. Site plan
4. Locations for swales, interceptor trenches, or ditches
5. Locations of temporary and permanent drainage pipes, ditches, or cut-off trenches
6. Minimum slope and cover for all temporary pipes or call out pipe inverts
7. Grades, dimensions, and direction of flow in all ditches, swales, culverts, and pipes
8. Details for bypassing offsite runoff around disturbed areas
9. Locations and outlets of any dewatering systems
10. Location of detention BMPs
11. Locations, dimensions, section views, and storage of sediment trap(s), pond(s), pipes, and structures
12. Typical details of gravel cone and standpipe, and/or other filtering devices
13. Stabilization techniques for outlet/inlet
14. Location and details for control/restrictor device
15. Specifications for mulch and/or recommended cover of berms and slopes
16. Specifications, spacing, front and side sections, and detail(s) for rock check dam(s)
17. Locations, details, and specifications for proposed silt fence
18. Location and detail for the proposed Stabilized Construction Entrance
19. Location of BMPs to be used for the control of pollutants other than sediment, e.g., concrete wash water

20. Clearing and grading limits
21. Stockpile/staging areas
22. Trees (greater than or equal to 10 inches in diameter) to remain with the dripline and tree protection fencing designated

Site Layout

1. All proposed structures (e.g., buildings, carports, garages, decks, walls, rockeries)
2. Existing impervious surfaces that will be removed and/or restored
3. Driveway layout (dimension and materials) on the private property and right-of-way
4. Other proposed hard surfaces (e.g., patios, sidewalks)
5. Trees proposed to be removed including size, species, and driplines

Grading

1. Existing and proposed contours wherever cut or fill will exceed 2 feet in height
   A. 2-foot intervals for up to 10 percent slopes
   B. 5-foot intervals for over 10 percent to less than 20 percent slopes
   C. 10-foot intervals for 20 percent or greater slopes
2. Spot elevations, slope arrows and percent slope around the building and for all proposed new driveways
3. Top and bottom elevations of all proposed rock and retaining walls
4. Estimate of earthwork quantities
5. Stabilization of disturbed areas
6. Existing trees (greater than or equal to 10 inches in diameter) including size, species, and driplines, clearly noting trees to be saved/removed

Storm Drainage, Sewer, and Water

Drainage Report

Submit a full drainage report prepared by a licensed civil engineer in the State of Washington. Projects under 5,000 square feet of new plus replaced hard surfaces may be able to use the City's Small Project Stormwater Report template (Worksheet A). The drainage report shall include the following:

1. Total of new pollution-generating hard surface
2. Total of replaced pollution-generating hard surface
3. Total of effective impervious surfaces
4. Total of converted vegetated areas
5. Total area of native vegetation retained
6. General description of the proposed project
7. Summary of predeveloped and developed conditions of the site
8. Lot area and square footage of the improvements
9. Pre- and post-developed stormwater runoff conditions
10. Summary of difficult site parameters, the natural drainage system, and drainage to and from adjacent properties, including bypass flows
11. Summary of how the proposed project complies with the applicable Minimum Requirements.
12. If using List #1 or List #2 to comply with Minimum Requirement #5, provide written justification including citation of site conditions identified in a soils report or the City's infiltration infeasibility map, for any On- Site Stormwater Management BMPs that are determined to be "infeasible" for the project site using the City's Infeasibility Criteria worksheet (Worksheet C)

13. If using the LID Performance Standard to comply with Minimum Requirement #5, or sizing stormwater facilities to meet treatment and/or flow control requirements (Minimum Requirements #6 and #7), provide a complete computer model report including input and output files, calculations, equations, references, storage/volume tables, and graphs as necessary
14. Projects taking an impervious surface reduction credit for newly planted or retained trees must provide those calculations
15. Projects using full dispersion or full downspout infiltration BMPs must provide information to confirm conformance with design requirements that allow removal of the associated drainage areas from computer model input
16. Summary of proposed public or private ownership of On-Site Stormwater Management BMPs and areas serving a stormwater function within the project site both during and after construction
17. Offsite analysis per MIMC 15.09.050
18. Operation and Maintenance Manual for flow control and treatment facilities
19. Maintenance instructions for on-site stormwater management BMPs

Drainage Plan

Submit a full drainage plan prepared by a licensed civil engineer in the State of Washington that includes the following:

1. Vicinity map
2. Site plan
3. Acreage and outlines of drainage basins
4. Existing stormwater drainage to and from the site
5. Routes of existing, construction, and future flows from all discharge points
6. Length of travel from the farthest upstream end of a proposed drainage system to any proposed flow control or treatment facility
7. Plan, profile and details of on-site stormwater management BMPs, treatment facilities, flow control/detention facilities, and stormwater conveyance system (if applicable to the project)
8. Area of disturbed soils to be amended using BMP T5.13 – Post-Construction Soil Quality and Depth
9. Retained trees (greater than or equal to 10 inches in diameter) and newly planted trees for which impervious surface reduction credits are claimed
10. Layout of proposed storm pipe around the buildings to each proposed downspout connection or downspout BMP with the pipe material type, slope and diameter labeled
11. Layout of pipe connecting building foundation drains and retaining wall/rockery drains to the other stormwater conveyance piping on site
12. On-site water quality catch basin using a downturned elbow/tee to capture any stormwater runoff from new driveways that is not infiltrated or dispersed on-site
13. Storm pipes (material type, slope and diameter) from the site to point of discharge
14. Rim and invert elevations of all proposed catch basins, yard drains and structures, and point of discharge/connection
15. Invert elevations for all site storm piping to adequately demonstrate that connection to off-site storm systems are feasible
16. Location of all proposed storm pipes shall be aligned to avoid all tree protection setbacks established by the City Arborist to the maximum extent practicable
17. Location of soil borings and infiltration tests (when applicable)
18. Applicable notes and details

Sewer Plan

1. Layout of the proposed side sewer including material, slope, cleanouts, invert elevations, point of connection, and setbacks to the existing trees
2. Location of the existing side sewer
3. The location of all proposed sewer pipes shall be aligned to avoid all tree protection setbacks established by the City Arborist to the maximum extent practicable
4. Applicable notes and details

Water Plan

1. Abandonment of the existing water meter and service (at the main) if applicable
2. Proposed location for a new water meter within the public right-of-way (or sometimes within an existing easement) and a new service line from that meter to the existing water main. Add note: "Contractor to coordinate exact location of the new water meter with the City Water Department during construction."
3. Applicable notes and details
4. Location of all proposed water pipes shall be aligned to avoid all tree protection setbacks established by the City Arborist to the maximum extent practicable

Other Required Submittal Items

1. A bond or assignment of funds in the amount of the cost of the stormwater facilities and final stabilization/restoration may be required prior to the issuance of a permit to begin construction
2. A right-of-way use permit will be required prior to construction if construction will occur in right-of-way
3. A Declaration of Covenant and Grant of Easement is required to ensure future maintenance and access for inspection