SU UTILITIES – WATER SERVICES AND CIVIL INFRASTRUCTURE GROUP
DRAINAGE DESIGN GUIDELINES

The following criteria have been established by Stanford University Utilities Division to guide consulting engineers in preparing studies, reports, and design documents for capital improvement and maintenance projects. Conformance to these Standards is required, and these criteria should be considered as minimum requirements.

Stanford University Utilities Division operates the campus storm drain system and has analyzed the hydraulics of this system as well as 100-year storm flow paths for the campus. These standards apply to the design and construction of new buildings and storm drain system elements.

General Requirements and Process

1. Project team’s civil engineer shall schedule an initial meeting with Stanford Utilities to review project utility requirements and applicable design guidelines prior to preparing and submitting plans for budgeting or outside regulatory review.
3. The storm drain system layout and all new connections shall be approved by Stanford Utilities.
4. Building finished floor elevations shall be set by at least one foot above the 100-year water surface elevation; 100-year water surface elevations will be provided by Stanford Utilities.
5. All existing and proposed storm drain pipes, system elements and drainage barriers shall be shown on the drawings and coordinated with all other proposed utilities and improvements and proposed landscaping. All components shall be accessible for operation & maintenance and eventual replacement.
6. Calculations or computer modeling are required for new buildings or other projects that increase impervious surface area, for sizing storm drain systems and for evaluating the impact of site development on existing drainage patterns and facilities.
7. Existing and proposed impervious area calculations shall be provided to determine detention requirements.
8. Projects shall address storm water treatment (C3) requirements on site.
9. Projects shall make all practicable efforts to minimize post project impervious areas and impacts to campus-wide detention facilities.
Alignment

1. Minimum pipe and structure clearances shall be 5 feet horizontal and 1 foot vertical clearance (outside surfaces) from any other underground pipe or conduit. The minimum criteria shall take into account the requirements of other local agencies and/or public utilities.
2. Minimum cover shall be 30 inches from finished grade to top of pipe, or two feet below subgrade, whichever is greater.
3. Breaks in grade or alignment, or changes in pipe material, shall only occur at catch basins or manholes.
4. Minimum velocity of 2.6 ft/s is required for the 2-year return period storm.

Materials

1. Pipeline materials for mains larger than 12” shall be RCP or HDPE conforming to Stanford’s technical specifications in the FDG.
2. Pipeline materials for drains smaller than 12” may be PVC conforming to Stanford’s technical specifications.

Maintenance Requirements

1. Stanford Utilities will maintain storm drain mains and catch basins from downstream of the first manhole located in a public street or parking lot and continuing downstream
2. The building owner/steward shall maintain storm drains, catch basins and drainage elements upstream of the first manhole located in a public (Stanford) street or parking lot.

References

2. Stanford University Facility Design Guidelines
3. California Regional Water Quality Control Board Municipal Regional Stormwater NPDES Permit. NPDES Permit No. CAS612008 (October 14, 2009. Amended per R2-2011-0083 on November 28, 2011)