

SECTION 3

STORM DRAINAGE

3.1 Stormwater Management

In compliance with the State and Federal regulations regarding storm water management during construction, no waste materials or pollutants will be allowed to enter the storm drainage system. In addition to reducing downstream erosion and sedimentation, keeping pollutants and other debris out of storm drains reduces the direct discharge of materials and wastes to local creeks and San Francisco Bay.

Stormwater management shall be in accordance with Caltrans standards and specifications and Town of Los Gatos Engineering Design Standards.

A. *Minimum Control Requirements*

1. When required by the Town, developments, clearing, or grading and excavating projects shall provide stormwater control and stormwater management measures that maintain the post-development peak discharge from the projects site for the specified design storms at a level that is equal to or less than the pre-development peak discharge for the same design storm, through stormwater management facilities that control the volume, timing, and rate of flows(detention/retention).
2. Applicant shall provide sufficient stormwater management water quality controls to ensure that the stream or receiving water incurs the minimum possible adverse impacts. These measures shall include specific temporary facilities to function during construction, and additional facilities for permanent operation. The design of the system shall be per requirements of Section 1.
3. Any proposed drainage easements must be endorsed by the affected property owners and be recorded prior to approval of the proposed project engineering plan.

B. *Stormwater Site Plan*

Applicants for new development and redevelopment of sites must prepare a Stormwater Site Plan (SSP). The SSP must demonstrate compliance with the minimum requirements of the Town's NPDES permit. All SSPs must include an "Erosion and Sediment Control Plan" which addresses control of pollution generated during the clearing, grading, construction and site stabilization phases. An offsite analysis and mitigation plan shall be prepared to ensure that future impacts from the project (i.e. reduced flood plain storage, etc.) will be controlled and/or existing impacts will not be aggravated by the project.

The SSP must be stamped by a professional civil engineer licensed in the State of California. The Stormwater Site Plan must be a comprehensive report containing all technical information and analysis necessary to evaluate the proposed stormwater

facilities. The report shall describe clearly, concisely, and in a logical manner the development of the stormwater plan and include all plans, tributary area maps, assumptions, variables, data, results. In addition, the Stormwater Site Plan must provide the necessary information to prepare final construction plans, profiles, details, notes and specifications for all stormwater facilities. It should be prepared such that a technical person unfamiliar with the project and area can easily follow and verify the development of the stormwater plans and calculations. Additional information may be required if the proposed development impacts water quality sensitive areas.

The applicant shall certify that all clearing, grading, drainage, construction, and development shall be conducted in strict accordance with the plan. The SSP shall not be considered approved without the inclusion of the signature and date of signature of the Town Engineer on the plan.

C. Construction

1. Erosion and sediment control facilities shall be in place before any land is disturbed. See **Standard Plan # 250-257**.
2. Erosion and sediment control facilities shall be regularly inspected by the Applicant and maintained as needed.
3. Failure of said facilities to be in place or failure due to insufficient maintenance is grounds for revocation.
4. Fencing is required at the maximum water surface elevation, or higher, when a pond slope is steeper than 3:1. The Town may also require appropriate fencing as an additional safety requirement.
5. Access roads are required when detention/retention ponds do not abut public right-of-way. Access roads shall extend around the entire pond perimeter.

D. *Inspection*

Retention and detention structures shall be inspected by the Design Engineer at the following stages:

1. Upon completion of excavation to subfoundation and where required, installation of structural supports or reinforcement for structures, including but not limited to:
 - a. Core trenches for structural embankments
 - b. Inlet-outlet structures and anti-seep structures, watertight connectors on pipes
 - c. Trenches for enclosed storm drainage facilities
 - d. Slope stabilization

2. During placement of structural fill, concrete, and installation of piping and catch basins
3. During backfill of foundations and trenches
4. During embankment construction
5. Maintenance.
 - a. The maintenance and protection of buffers, including erosion control, care of vegetation, and removal of trash and obstructions, shall be the responsibility of the property owner or an association of property owners unless specifically agreed to be accepted by the Town.
 - b. The owner of the property on which work has been done for private storm drainage systems, or any other person or agent in control of such property, shall maintain in good condition and promptly repair and restore all graded surfaces, walls, drains, dams and structures, vegetation, erosion and sediment control measures, and other protective devices.
 - c. A maintenance schedule shall be developed for the life of any storm drainage system element which shall state the maintenance to be completed, the time period for completion, and who shall perform the maintenance. This maintenance schedule shall be printed on the project construction plan.

The following are minimum standards for the maintenance of stormwater facilities:

- (1) Facilities shall be inspected annually and cleared of debris, sediment, and vegetation when they affect the functioning and/or design capacity of the facility.
- (2) Grassy swales and other biofilters shall be inspected monthly and mowed or replaced as necessary. Clippings are to be removed and properly disposed of.
- d. The Town shall be responsible for the maintenance and operation of all public storm drainage facilities following the successful completion of the two-year maintenance period and the acceptance of such facilities by the Town. The applicant shall submit a surety bond guaranteeing maintenance until the system is accepted by the Town.

3.2 Other Permits and Plan Requirements

In addition to the Stormwater Site Plan requirements by the Town, other agencies may require a stormwater site plan to describe the proposed project's impact on surface,

ground and stormwater. These other agency requirements are separate and in addition to the Town's requirements. It is the responsibility of the Applicant to coordinate with the other agencies. Agency Permit/Approvals that may be necessary include, but are not limited to:

- A. Joint Aquatic Resource Permit Application (JARPA) - issued by State of California Department of Fish and Game and other agencies.

3.3 Storm Pipe Installation

- A. Lot drains shall be provided for lots in subdivisions as determined by project Geotechnical Engineer. This applicants engineer must design and obtain approval from the Town Engineer for the lot drain system.
- B. A pipe system shall be provided for curb street sections whenever the length of surface drainage on road grade extends either direction from crest vertical curves as follows:
 - 150 feet for grades 0.5% to 1.5%
 - 200 feet for grades 1.5% to 3.0%
 - 300 feet for grades 3.0% and greater
- C. Pipe for storm sewers shall be PVC pipe and shall conform to ASTM D3034-SDR 35 or corrugated polyethylene and shall conform to AASHTO M294-97 & ASTM D3212.
- D. Minimum pipe size for storm drain is twelve-(12) inch diameter. Runoff shall be computed and, if the flow requires it, larger pipe shall be used.
- E. Connections to the pipe system shall be made only at catchbasins or manholes.
- F. Storm drain gradients shall provide a minimum flowing full velocity of 3 ft/sec.
- G. Storm drain pipes shall have a minimum 30" of cover.
- H. Natural streams shall not be placed in pipes except for essential roadway crossings as determined by the Town and subject to review by the State of California Department of Fish and Game and other State and Federal Agencies which have jurisdiction.
- I. Trench and pipe bedding details are shown in **Standard Plan #305 and #306**.
- J. Mark end of storm lot drains with pressure treated 2 X 4 painted white marked "STORM". Depth to stub as measured from ground to be placed on marker.

3.4 Catch Basins and Manholes

- A. Catch Basin structures shall be provided as follows:
 - 1. Maximum spacing of catch basins are as follows:
 - 150 feet for grades 0.5% to 1.5%
 - 200 feet for grades 1.5% to 3.0%
 - 300 feet for grades 3.0% and greater
 - Additional catch basins shall be installed as needed to confine drainage to the gutter and prevent street drainage from sheet flowing across roadways or intersections.
 - 2. At all intersections. Valley gutters on public roadway is not permitted.
 - 3. At junctions of dissimilar materials (PVC, concrete, metal) or dissimilar sizes.
 - 4. Change in horizontal or vertical alignment.
 - 5. Catch basins shall have through curb installation. See **Standard Plan #301 #302, and # 303.**
- B. Pipes connecting single inlets to main storm sewer by structure such as catch basins, shall be 12-inch diameter minimum, and single inlets shall be catch basins with sumps.
- C. Where a structure is needed for access or for juncture of storm sewers, but not for catchment of silt, the structure shall be manhole.

With approval of the Town Engineer, a pre-cast cone may be substituted for the top slab. Manholes shall be a minimum of five feet deep to the invert of pipe. Joints on manhole sections shall be rubber gasket type. In addition, all joints shall be grouted.
- D. **Standard Plans #307-313** are for Typical Treatment facilities. Each projects design will be reviewed on a case by case basis by the Town Engineer.