

Chapter 5: Drainage

The City of Fontana has adopted a Master Storm Drainage Plan that was prepared by the County of San Bernardino. The drainage plan for South Fontana provides for drainage to a 120-inch-diameter pipe serving the Specific Plan area and adjacent tributary areas.

The watershed that the West Specific Plan area is located within is bordered by Tamarind Avenue to the west and the ridge line adjacent to Larch Avenue to the east. Existing topographic relief consists of relatively flat contours bordered by hilly terrain on the west, with the existing site drainage generally sheet flowing in an easterly direction. Presently, this area drains to a borrow pit that is located northeast of the intersection between El Rivino Road and Cedar Avenue. The borrow pit currently functions as a retention basin.

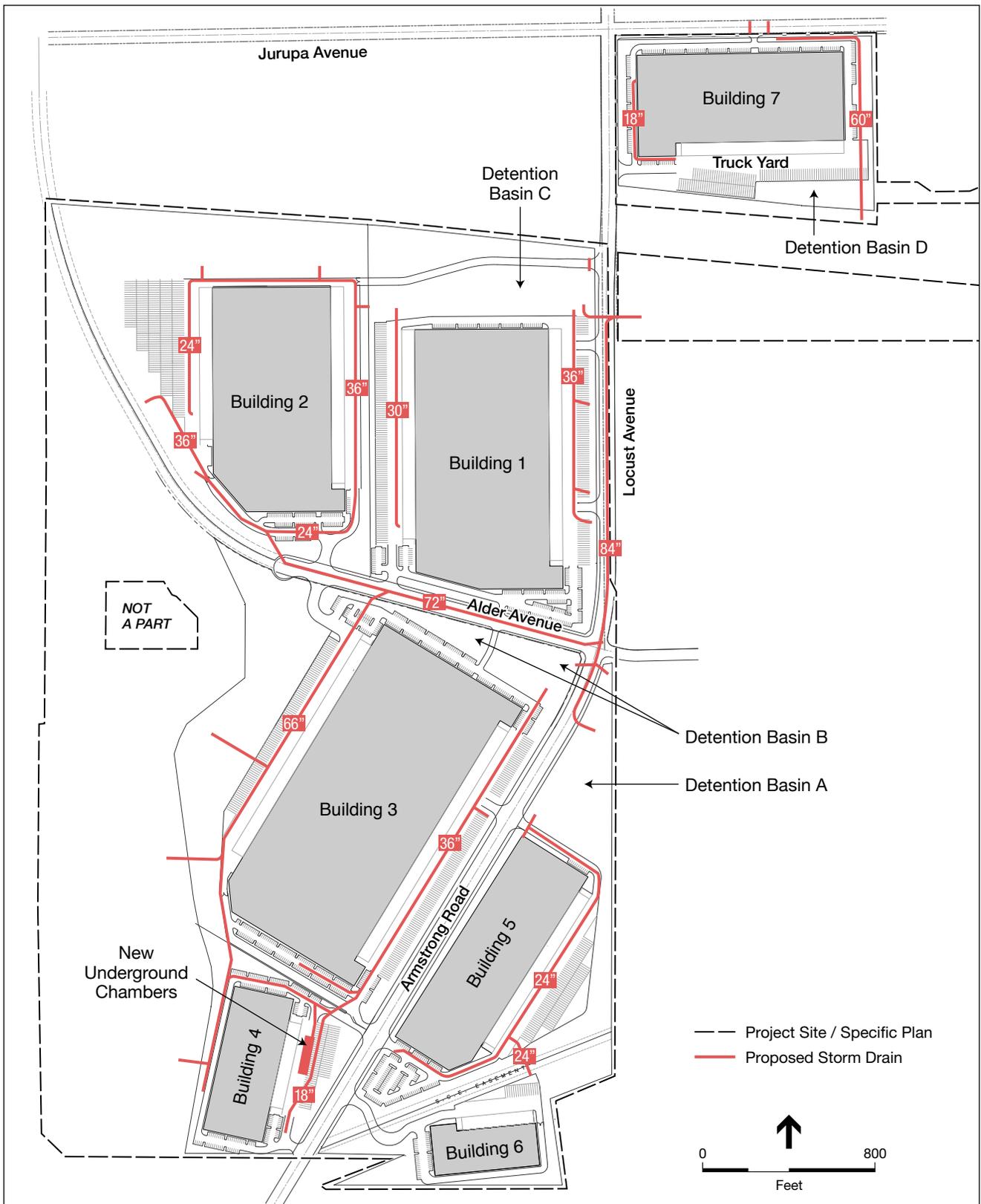
Runoff from the site will be intercepted and conveyed via surface flow and a proposed storm drain system to existing and proposed onsite water quality/detention basins (see Figure 5-1).

Runoff from Buildings 1-6 will drain into a proposed public storm drain system to be constructed as part of the project in Locust Avenue. This storm drain will discharge runoff into a proposed water quality/detention basin located at the northeast corner of 11th Street and Locust Avenue. The majority of the drainage will be detained in an existing basin located north of 11th Street, to which the Specific Plan will provide upgrades.

Water quality/detention basins will be constructed within the Specific Plan area to treat and limit runoff from the Specific Plan area to less than occurs under existing conditions. The hillside areas in the western portion of the Specific Plan area will remain natural, and do not, therefore, require detention.

Detention sizing for the Specific Plan area will meet San Bernardino County requirements that 100-year peak flows be reduced to 90 percent of the 25-year peak flow rate for existing conditions. Detention basins within the Specific Plan area will be designed such that the lower elevations of the basins are used for water quality purposes. The higher elevations of the basins will be used to limit the difference between pre- and post-development peak flow rates. For Building 4, water quality treatment will be achieved within the Parcel 4 (via underground storage), and not in a detention basin.

The County of San Bernardino and the City of Fontana adopted development standards to minimize the detrimental effects of development projects on receiving waters through implementation of site designs that reduce runoff and pollutant transport. This is accomplished by minimizing impervious surfaces and maximizing on-site infiltration. Additionally, source-control Best Management Practices (BMPs), on-site structural treatment control BMPs, and/or participation in regional or watershed-based structural



SOURCE: Thienes Engineering, Inc.

West Valley Logistics Center . 211220

Figure 5-1
Backbone Drainage System
Improvements

treatment control BMPs are to be used. The goal of these methods is to create a project that mimics the predevelopment hydrologic regime by detaining on-site the difference between the five-year developed and the five-year undeveloped storm events.

A project-wide water quality management plan will be submitted to the City of Fontana and approved prior to initiating grading operations. Site Design BMPs for Water Quality Management, which include Low Impact Development standards (LIDs), permitted by the water quality management plan for the Specific Plan area may include, but are not limited to, the following:

- Maximize permeable areas (pervious open space) of the site by reducing the amount of pavement, decreasing the project's footprint or by utilizing alternative paving materials in select areas.
- Drain rooftops into pervious, swaled landscaped areas prior to discharge of overflow into storm drain. (See Figure 5-2)
- Construct streets, sidewalks, and parking lot aisles to the minimum width necessary.
- Construct walkways, parking stalls, overflow parking lots, and other low-traffic areas with open-jointed paving materials.
- Use pervious drainage channels (rock or grass lines systems) for conveying parking lot runoff into storm drain overflows. (See Figure 5-3)
- Use perforated pipe, gravel infiltration pits and drywells for low-flow infiltration following treatment by an acceptable method.
- Construct on-site vegetated ponding areas and swaled landscaping (not mounded) that drain within 72 hours to prevent the development of vector-breeding areas.
- Provide curb cutouts, curb cores, or concrete mow strips and wheel stops to allow stormwater runoff to flow into swaled landscaped areas.
- Where soil conditions are suitable, construct vegetated infiltration trenches in paved parking lot areas to infiltrate and filter stormwater runoff.
- Other site design options that are comparable and equally effective.



Figure 5-2. On-site storm water capture system.



Figure 5-3. On-site storm water capture through landscaped swales.

Detailed hydraulic studies are required to address on-site drainage conditions and increased runoff flows associated with the project. These studies are to be submitted to and approved by the Fontana Public Works Director prior to recordation of the proposed Parcel Map for the Specific Plan area. Drainage facilities within the public road right-of-

ways, drainage easements, and the drainage basins are proposed to be maintained by the City of Fontana.