City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 891-5016 • FAX (505) 891-7272

DEPARTMENT OF
PUBLIC WORKS

GRADING AND DRAINAGE DESIGN REQUIREMENTS AND POLICIES FOR LAND DEVELOPMENT IN RIO RANCHO (Revised 3-18-93)

1. All Grading and Drainage design for land development in Rio Rancho shall conform to the applicable requirements of the following City Ordinances:
   Chapter 8, Article 4, "Flood and Erosion Control"
   Chapter 8, Article 7, "Storm Drainage Requirements"
   Chapter 9, Article 2, "Subdivisions"
   and to the applicable provisions of the "Drainage Policy" of the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) and to the applicable requirements and policies listed hereinafter.

2. Minimum criteria for hydrology and hydraulic calculations and design shall be as described in Volume 2, Development Process Manual, City of Albuquerque, latest revision, or the AHYMO version of the ARS HYMO Computer Program. Calculations shall accompany design submittals.

3. Calculations shall be furnished for historic flows and developed flows for the 10 year and 100 year 6 hour storms. Calculations shall be furnished for sizing all conveyances and storage ponds on site as well as downstream infrastructure, if pertinent. Calculations should also address depth of flows in streets as required in Ordinance 8-7-7.

4. Soil classifications may be obtained from USDA Soil Conservation Service maps or investigations performed by Geotechnical engineers, if necessary.

5. Unless restricted by specific infrastructure limitations, maximum discharge permitted from a developed property in the event of a 100 year 6 hour storm shall be the amount of the historic or pre-developed runoff in all watersheds of the city. Due to infrastructure limitations, developed properties in the watershed area intercepted by the 7 – Bar Channel adjacent to NM 528 south of High Resort Boulevard shall have discharge limited to 0.5 cfs per acre. Discharge limitations shall apply to all development projects except for single family residential projects under 5 lots or 5 acres total.

6. Detention Ponds or Retention Ponds shall not be constructed in public street right-of-way. Discharge from the detention ponds shall be conveyed to public infrastructure such as streets and channels by approved means such as pipe or channels. It is recommended that pipe sizes less than 6" diameter not be used due

to maintenance concerns. To restrict flows, apertures in caps placed at the inlet end are suggested.

7. Detention Ponds shall be sized to provide 1 foot of Freeboard and to empty within 24 hours. Retention ponds shall be sized to contain twice the volume of the 100 year 6 hour storm for the area drained plus 1 foot Freeboard. Percolation tests may be required to address design requirements. Ponds designed for water depths of 18 inches or more shall be fenced to acceptable standards.

8. Surface drainage shall not be permitted to flow onto adjacent private property. Where drainage easements exist, underground pipelines may be permitted.

9. In residential subdivisions, on-site detention is not permitted on individual lots. Detention or retention shall be provided in locations otherwise provided for by the developer. Minimum grades for drainage in lots shall be 1 percent unless paved swales are provided. Maximum grades for slopes shall be restricted to 25 percent. Retaining walls should be provided where necessary to accommodate this goal. Retaining walls in excess of 5 feet high (footer to ground surface) should be avoided. Individual certification to the design and construction of retaining walls in excess of this parameter is required. All retaining walls should be designed to relieve potential hydrostatic pressure by providing weepholes where necessary.

10. All embankment in subdivisions shall be placed and compacted in lifts of maximum of 8 inches thick, wetted and compacted for 90% of optimum density per ASTM D1557 and 95% under all structures including driveways and parking lots. Slopes should be graded to a maximum of 4 to 1 when feasible. Access roads for maintenance shall be provided for drainage channels and adequate right-of-way shall be provided for the channels, maintenance roads and room for hiking-bikeway trails.

11. In projects affected by the 100 year flood plain, the proposed 100 year base flood line shall be delineated on the Grading and Drainage Improvement plans. If there is a change to the Flood Insurance Maps as produced by the Federal Emergency Management Agency (FEMA), a Letter of Map Amendment (LOMA) or a Letter of Map Revision (LOMR) and a physical map revision shall be filed with the agency and the City Engineer's office. All new structures and substantial improvements to structures shall have its lowest floor elevation a minimum of 1.0 foot above the basic flood elevation.

12. All submittal documents, maps, plans, calculations, designs, etc. shall be made in triplicate. Following approvals or for consideration for joint concurrence when required, one set will be forwarded to Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA).

13. Drainage plans are required for building permits, minor subdivisions, and site development plans for individual parcels for commercial, industrial, or multifamily projects and shall meet the following requirements:

(a) Furnish on 24" x 36" sheets with a minimum scale of 1" – 20". Show scale and north arrow.

(b) Show existing contour lines for predevelopment conditions and also for proposed development conditions. Vertical intervals shall not exceed 1 foot for slopes under 1 percent, 2 feet for slopes between 1 percent, and 5 feet for slopes in excess of 5 percent. Spot elevations shall be shown for pertinent items such as existing structures, curb and gutter, etc. Contours and elevations shall extend a minimum of 25 feet beyond project property lines.

(c) Show location and elevation of Bench Mark to mean sea level designation.

(d) Location map (smaller scale okay on same sheet or separate sheet).

(e) Watershed area including offsite if relevant (scale flexible).

(f) Soil type if pertinent.

(g) Legal description (including recording book and page).

(h) Rights of ways and easements.

(i) Description and location of relevant offsite drainage facilities.

(j) Professional Engineers stamp, signature and date.