

DEVELOPMENT PROCESS MANUAL

Chapter 6: Parks and Trails Design



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6. Parks and Trails Design

6.1 Introduction

Parks, trails, and recreation facilities are a source of community connections and greatly enhance quality of life. They allow residents to engage in their community and the natural environment while increasing the value of neighborhoods and subdivisions in both quantitative and qualitative ways.

The City of Rio Rancho works to ensure the community's current and future parks and recreation needs are met. The Department of Parks, Recreation and Community Services (PRCS Department) work with the development sector to create and maintain quality spaces and activities that grow a greater sense of community and enhance the quality of life in the City of Rio Rancho. The PRCS Department has used the Master Planning process to better identify the wants and needs of the community and has reflected these community priorities through the Design Guidelines that follow.

6.2 Applicability

1. Any park equal to or less than 3 acres in size must be owned and maintained by a Homeowners Association (HOA).
2. Private parks must submit a park permit application outlined in Section 2.6.B of Chapter 2 Development Procedures.
3. Privately owned and maintained parks, trails, and recreation facilities should be coordinated with the City PRCS Department and are subject to the minimum safety requirements of International Play Equipment Manufacturers Association (IPEMA), Consumer Product Safety Commission's (CPSC), and the Americans with Disabilities Act (ADA).
4. The design standards of this chapter apply to all parks, trails, and recreation facilities owned or maintained by the City of Rio Rancho.
5. The design review and approval of public parks and recreation facilities shall follow the requirements and process outlined in Section 2.6.B. of Chapter 2 Development Procedures.
6. Inspections of completed parks shall follow the requirements and process outlined in Section 2.6.B of Chapter 2 Development Procedures.

6.2.A Definitions

Activity Element- Refers to a feature designed for active recreation, such as playgrounds, splash pads, sport courts, skate parks, exercise equipment, or active sport systems like disc golf, aimed at promoting physical activity and engagement.

Developed Area - The developed area is the portion of park land designated for active recreational use. Specifically designed and maintained to support various recreational activities, this area includes amenities such as sports fields, playgrounds, picnic areas, trails, and other facilities intended for public enjoyment and physical activity.

Elevated Play Component - A play component that is approached above or below grade and that is part of a composite play structure consisting of two or more play components attached or functionally linked to create an integrated unit providing more than one play activity.

Community Park (CP) - The Rio Rancho Parks and Recreation Master Plan defines community parks as larger than neighborhood parks, serving a broader purpose with multiple facilities. They typically range from 10 to 20 acres, although size can vary based on location and functionality. The optimal service area is within a 10-minute drive, with a recommended service level of one facility per 20,000 people.

HOA Pocket Park – A parks three acres or less in size that is owned and maintained by a Homeowners Association.

Maintenance Access - Vehicle access to park elements necessary for on-going maintenance. Maintenance access areas must be free of obstacles.

Multi-Purpose Recreation Center (RC) - Defined by the Rio Rancho Parks and Recreation Master Plan as structures designed to accommodate a variety of recreational activities and events. These centers typically feature spaces such as general-use auditoriums, gymnasiums, and specialized facilities like swimming pools. They serve an optimal area within a 10-minute drive, with a service level of one facility per 20,000 people.

Neighborhood Park (NP) - The Rio Rancho Parks and Recreation Master Plan defines neighborhood parks as the basic unit of the park system and serve as the recreational and social focus of the neighborhood. Typically ranging from three to ten acres, these parks have a service area of a 10-minute walking distance, with a recommended service level of one facility per 20,000 people.

Nonfunctional Turf - Turf areas that are less than 10 feet wide, smaller than 100 sf, exceed a slope of 3%, and not functionally sized for unorganized or organized play or recreation.

Open Space / Natural Resource Area (NRA) - The Rio Rancho Parks and Recreation Master Plan defines natural resource areas are lands set aside for the preservation of significant natural resources, remnant landscapes, open space, and visual aesthetics/buffering. These can range in size depending on the resource and location. Major Natural Resource Areas (greater than 20 acres) have a service area of a 20-minute drive or less and have a level of service of 5 acres per 1000 people.

Parks, Recreation and Community Services (PRCS) – City of Rio Rancho Parks, Recreation and Community Services department.

Picnic Shelter - A structure that is partially or fully open-sided, equipped with picnic tables.

Shade Structure - A structure with a temporary or permanent roof or covering design to provide shelter from the heat or glare of the sun.

Special Use Park (SUP) - The Rio Rancho Parks and Recreation Master Plan defines special use classification to cover a broad range of parks and recreation facilities oriented towards single-purpose use with the area being determined by the use, for example from dog parks, skate parks and pools less than 1 acre to balloon parks and RV parks greater than 20 acres. The optimal service area for these facilities should be 20-minute drive or less with a level of service at 1 facility per 30,000 people.

Sports Complex (SC) - The Rio Rancho Parks and Recreation Master Plan defines these facilities as consolidating heavily programmed athletic fields and associated facilities at larger and fewer sites strategically located throughout the community. The minimum size is 40 acres, with 80 to 150 acres

being optimal, with a 10-minute drive as the optimal service area. Level of service for Sports Complex is 1 facility per 30,000 people.

Passive Area - The undeveloped area is the portion of park land preserved in its natural state for conservation, wildlife habitat, and educational purposes. It encompasses features like forests, wetlands, open spaces, and other natural landscapes protected from active development. This acreage serves as a resource for environmental conservation, ecological study, and passive recreation.

Usable space or area - Areas specifically designed or designated to support functions that enhance visitor experiences, facilitating both passive (e.g., sitting, picnicking, enjoying views) and active (e.g., recreation, group activities, or pet-friendly engagement) interactions with the physical environment. These spaces are intended to be accessible and functional for a variety of activities that promote community use and enjoyment.

6.3 Design Standards

6.3.A General Standards

1. All commercial, municipal, and private parks, trails, and recreation facility projects shall be designed by a Landscape Architect licensed in the State of New Mexico who shall stamp the appropriate construction documents for the project.
2. It is the responsibility of the project Landscape Architect and/or Engineer, licensed in the State of New Mexico, to ensure that these Codes and any additional City of Rio Rancho adopted Codes, Ordinances, and Standards are followed in the design of parks and trails.
3. It is the responsibility of the Licensed Contractor to ensure these codes and standards are followed during construction, that all necessary permits are obtained, and that the project is inspected as required.
4. International Building Code and New Mexico Administrative Code requirements shall be followed for all design, construction, and improvements made to parks, trails, and related facilities.
5. The U.S. Access Board's Guide to Accessibility Standards, as well as any other applicable ADA standards, shall be followed.
 - a. All parks must ensure that internal park pathways are ADA compliant.
 - b. All parks must provide ADA compliant connections from adjacent sidewalks of the subdivision to the internal park pathways.
 - c. All parks must ensure that benches, picnic tables, and shade structures are ADA compliant, and APA compliant connections must be provided to these elements.
6. In order to meet City goals and objectives outlined in the Comprehensive Plan and Parks Master Plan, PRCS Department Staff may require additional standards and park elements.
7. Park developers shall work with PRCS Department staff to use optimal usable space and open space.
8. Parks over 3 acres in size shall provide 1 parking spot and 1 ADA spot for the first 3-4 acres and an additional 3 spots for **each additional acre** for parks greater than 4 acres, dependent on elements and programming.
9. All parks must have an area designated as maintenance access. PRCS Department staff will work with the park developer to determine the best location and construction criteria including a gate, roll curb, post and cable fence, and/or removable bollards for access.

10. Active usable space or areas shall be buffered from parking lots, adjacent roadways, and internal vehicular circulation routes using passive areas by a minimum 15' buffer that incorporate trails, natural vegetation, and landscaping features.
11. Disturbance to terrain and vegetation to undeveloped open space areas shall be minimized to the maximum extent practicable. Disturbed areas shall be reseeded or planted with low-water, low maintenance, native, or naturalized plant materials and irrigated and maintained for a minimum of 1 year or until the vegetation is established.
12. The park developer shall ensure that electrical power is provided to the future park property during subdivision or site development. At a minimum, this power supply must support the irrigation controller and heat tape for the irrigation system backflow preventer.

6.3.B Parks

6.3.B.I. PARK TYPOLOGY STANDARDS

The Rio Rancho Park system is classified into five distinct park typologies based on size, purpose, features, location, and service areas. The five typologies are listed in the table below.

Park Type	Size
HOA Pocket Park	0-3 acres
Neighborhood Park	3-10 acres
Community Park	10-20 acres
Regional Park	Minimum 10 acres
Special Use Facility	Determined by use
Recreational Open Space	Varies, typically larger than 20 acres

When planning a new park, the typology is determined in coordination with the PRCS Department based on park dedication requirements within the City of Rio Rancho Municipal Code and based on the park size, serviceable area, anticipated user groups, community needs, and location. The assigned typology dictates the elements and features included in the park. Within each typology defined in this section there is a defined purpose, serviceable area, size guidelines, location criteria, and elements:

1. The purpose statement outlines the intent of each typology which should be considered during design and development.
2. The serviceable area is the area defined by the residential population anticipated to use a particular facility.
3. The location criteria defines the desired location for each typology to ensure adequate access, appropriate level of visibility, and desired function.
4. The elements are the amenities to be included in the park design and are categorized as basic elements and optional elements. Basic elements are required, and optional elements may be provided at the discretion of the developer and the PRCS Department.

Parks less than three acres in size are anticipated to be pocket parks that serve smaller geographic areas and must be owned and maintained by an HOA. The design and construction of these parks should be coordinated with PRCS Department staff to ensure minimum safety standards are utilized.

6.3.B.1.a. Neighborhood Park

6.3.B.1.a.i. Purpose

1. Provides a space for informal recreation and social needs of the surrounding neighborhood.
2. Promotes a sense of neighborhood and a sense of community.
3. Is connected via pedestrian and bicycle network.

6.3.B.1.a.ii. Service Area

Neighborhood parks aim to provide recreational spaces within a 10-minute walking distance or 1/2 mile of most homes within the neighborhood.

6.3.B.1.a.iii. Size Guidelines

3 to 10 acres.

6.3.B.1.a.iv. Location Guidelines

1. Located as centrally as possible to the neighborhood it serves.
2. Conveniently accessible within a half mile.
3. Located along bikeway and trail connections.
4. Located on at least one public road.
5. In close proximity to schools.

6.3.B.1.a.v. Elements

The typical amenities of a neighborhood park include a grass area, activity elements (which include playgrounds, splash pads, sports courts, skate parks, exercise equipment, active sport systems such as disc golf), shade structure, picnic tables, benches, and sport courts as laid out in the Comprehensive Plan. The basic required elements and optional elements for Community Parks are laid out in Table 6.2: Neighborhood Park Elements. If park dedication results in parks less than 3 acre, required elements may be waived by PRCS Department staff. To meet City goals and objectives outlined in the Comprehensive Plan and Parks Master Plan, PRCS Department Staff may require additional park elements or vary required elements.

Table 6.2: Neighborhood Park Elements	
Required Elements*	Optional Elements
Activity element	Sports courts
2 benches per acre	Bicycle racks
3 tables per acre	Fenced Dog Park
2 trash receptacles per park unit at a min. More depending on activities supported by the park per the Parks, Recreation and Community Services Director's discretion.	Picnic shelter
1 dog waste station in conjunction with trash receptacles	Basketball court with a minimum of 1 goal
Minimum shade structure area of 400 sf per park unit,	Drinking fountain
8 trees per acre	Splash pad
3 shrubs per required tree	

Table 6.2: Neighborhood Park Elements	
Required Elements*	Optional Elements
Park rules sign	
Maintenance access	
Quick coupler hose connection per parts list located centrally and near the play and shade structures.	
Irrigated Turf Area a minimum 1 acre for a 3-acre sized park.	
Parking lot. Parks over 3 acres in size shall provide 1 parking spot and 1 ADA spot for the first 3-4 acres and an additional 3 spots for each additional acre for parks greater than 4 acres, dependent on elements and programming	
*At least 1 of the required components must be ADA accessible	

6.3.B.1.b. Community Park

6.3.B.1.b.i. Purpose

1. Provides space for recreational activities that serve a wider population than the adjacent neighborhood.
2. Provides opportunities for a wide array of passive and active recreation activities.
3. Accommodates facilities and activities that require greater amounts of land, attract a high number of people, and requires off-street parking.

6.3.B.1.b.ii. Service Area

Community parks aim to provide recreational spaces within a 10-minute drive of most homes within the neighborhood.

6.3.B.1.b.iii. Size Guidelines

10 to 20 acres.

6.3.B.1.b.iv. Location Guidelines

1. Located centrally to the area it serves.
2. Located with visibility and access from arterial streets.
3. Sports fields separated or buffered from residential uses.
4. Subjected to the existence and availability of historic or cultural resources.
5. Collocated in proximity to middle schools, high schools, and community centers.

6.3.B.1.b.v. Elements

The typical amenities of a community park include grass area, activity elements, shade structure, picnic tables, benches, multiple sport courts, skate park, parking lot, and paths as laid out in the Comprehensive Plan. The basic required elements and optional elements for Community Parks are laid out in Table 6.3:

Community Park Elements. To meet City goals and objectives outlined in the Comprehensive Plan and Parks Master Plan, PRCS Department Staff may require additional park elements or vary required elements.

Table 6.2: Community Park Elements	
Required Elements*	Optional Elements
Play / activity equipment	Skate park
2 benches per acre	Disc golf
3 tables per acre	Fenced Dog Park
2 trash receptacles per park unit at a min. More depending on activities supported by the park per the Parks, Recreation and Community Services Directors' discretion	Sport courts
1 dog waste station min, in conjunction with the trash receptacles	Picnic shelter
Minimum Shade structure area of 500 sf per park unit	Basketball court with a minimum of 2 goals
Drinking fountain	Splash pad
Turf play area to accommodate athletic competitions	
8 trees per acre	
3 shrubs per required tree	
Quick coupler hose connection per parts list located centrally and near the play and shade structures	
Parking lot. Required spaces for parks over 3 acres in size parking lots is 1 spot and one ADA spot for the first 3-4 acres and an additional 3 plus spots for each additional acre for parks greater than 4 acres, dependent on elements and programming	
Park rules sign	
Maintenance access	
*At least 1 of the required components must be ADA accessible	

6.3.B.1.c. Regional Park

6.3.B.1.c.i. Purpose

1. Provides space for recreational activities that serve the entire community.
2. Provides opportunities for a wide array of passive and active recreation activities.
3. Accommodates facilities and activities that require greater amounts of land, attract a high number of people, and require off-street parking.

6.3.B.1.c.ii. Service Area

Regional parks aim to serve the entire community.

6.3.B.1.c.iii. Size Guidelines

Minimum size is 10 acres.

6.3.B.1.c.iv. Location Guidelines

1. Located with direct vehicular access from a major arterial.
2. Located with access to public transit.
3. Connected to bikeways, trails, and pedestrian circulation networks.
4. Located centrally to conveniently serve the entire community.

6.3.B.1.c.v. Elements

The City of Rio Rancho will provide a specific program for expected uses of regional parks. Uses will be intended to maximize recreation activities while optimizing water use. Generally, a regional park will contain all elements of a neighborhood park plus a minimum of 2 acres of playing fields or courts for organized sports. Regional parks will also have appropriate parking lot and field or court lighting to support organized sports. The basic required elements and optional elements for Regional Parks are laid out in Table 6.4: Regional Park Elements. To meet City goals and objectives outlined in the Comprehensive Plan and Parks Master Plan, PRCS Department Staff may require additional park elements or vary required elements.

Table 6.4: Regional Park Elements	
Required Elements*	Optional Elements
Play equipment	Softball and Baseball fields
2 benches per acre	Fenced Dog Park
3 tables per acre	Disc Golf Courses
Trash receptacles	Horseshoe pits
Dog waste station	Tennis/ Pickleball
Shade structure a cumulative total of 600 sf coverage	Racquetball
Drinking fountain	Volleyball
Play area	Cricket
12 trees per acre	Bocce Courts
3 shrubs per required tree	Basketball court with minimum of 1 goal
Quick coupler hose connection per parts list located centrally and near the play and shade structures.	Splash Pad
Parking lot. Required spaces for parking lots is 1 spot and one ADA spot for 3-4 acres and 3 plus spots for parks greater than 4 acres dependent on elements and programming	
Park rules sign	
Maintenance access	
*At least 1 of the required components must be ADA accessible	

6.3.B.1.d. Special Use Facility

6.3.B.1.d.i. Purpose

1. Provides recreation facilities oriented towards single-purpose use, such as dog parks, skate park, stages and amphitheaters, Class I arboretums, pools, multi-purpose recreation centers, senior centers, and balloon parks.
2. Provides opportunities for a sense of place, community, and identity to form through providing a gathering, recreation, and meeting place.

6.3.B.1.d.ii. Service Area

Special use complexes aim to serve the entire community.

6.3.B.1.d.iii. Size Guidelines

Determined by the use.

6.3.B.1.d.iv. Location Guidelines

1. Located with direct vehicular and public transit access from a major arterial.
2. Connected to community bikeway, trail, and pedestrian circulation networks.
3. Depending on the identified need and the specific use, special use complexes may be strategically located to serve specific geographic segments of the community.

6.3.B.1.d.v. Elements

The City of Rio Rancho will provide a specific program based on the targeted use of the special use facility.

6.3.B.1.e. Recreational Open Space

6.3.B.1.e.i. Purpose

1. Preserves significant natural resources, remnant landscapes, and open space.
2. Provides buffering.
3. Provides passive recreation, wildlife habitat, and stormwater management.
4. Accommodates sustainable landscape treatments and water use reduction.
5. Provide educational experiences.

6.3.B.1.e.ii. Service Area

Recreational open spaces aim to provide recreational spaces within a 20-minute drive of most homes within the community.

6.3.B.1.e.iii. Size Guidelines

Facilities range in size depending on the resource and location and are typically larger than 20 acres.

6.3.B.I.e.iv. Location Guidelines

1. Located in natural areas, such as the Bosque and along the Rio Grande.
2. Located along right-of-way corridors when significant natural resources are present.
3. Connected to bicycle, pedestrian, and trail networks.

6.3.B.I.e.v. Elements

Open space elements should be identified in collaboration with the PRCS Department. Typical amenities within an open space should include undisturbed natural resources and associated buffer land.

6.3.B.II. PARK ELEMENT STANDARDS

6.3.B.II.a. General Standards

1. The park element standards listed below apply to elements within all park typologies.
2. All provided amenities shall be installed per manufacturer's instructions or as described in the Drawings.
3. The PRCS Department and the Parks and Recreation Commission reserve the right to require additional elements in the design of the park.
4. Review of park elements will follow the procedures of Section 2.6.B. Park Permits.

6.3.B.II.b. Paving

1. Work under this section consists of preparing all paved areas for parking lots, sidewalks/paths, courts, and skate parks according to the specifications.
2. Paved surfaces shall follow all applicable codes and the paving standards of the Department of Public Works.
3. Asphalt surfaces including parking lots, walkways, and sport courts, shall follow the City Standard for "paved pedestrian trail or parking lot" through the Department of Public Work's standard sheet "Pavement Sections– DWG. No. PS-01."
4. Concrete surfaces such as sidewalks and concrete pads shall follow the City Standard for sidewalks through the Department of Public Work's standard sheet "Sidewalk and Residential Driveway – DWG. NO – DW-01." Note that additional standard sheets related to driveways, curb and gutter and other improvements may apply.
5. Grading and sub grade preparations for all paved surfaces shall follow the Public Works standard specifications for concrete sidewalks and asphalt paving.
6. All paved surfaces shall be designed to ensure that surface ponding is negligible. Park developer will submit concrete pads, courts, and skate parks to a ponding test where water will be sprayed on the surface and runoff and/or ponding observed.

6.3.B.II.b.i. Parking Lot Standards

1. Paved parking lots shall follow the City Standard for "paved pedestrian trail or parking lot" through the Department of Public Work's standard sheet "Pavement Sections – DWG. No. PS-01."
2. Permeable paving may be used within onsite parking lots. Low Impact Development parking lots shall follow the SSACFCA standard specifications and construction details, as specified by staff.

3. Accessible parking shall be provided as required by the federal Americans with Disabilities Act Guidelines for Buildings and Facilities (ADAAG), the New Mexico Statutes Annotated, and the Rio Rancho Municipal Code.
4. Required spaces for parking lots is 1 spot and one ADA spot for 3-4 acres and 3 plus spots for parks greater than 4 acres dependent on elements and programming.

6.3.B.II.b.ii. Paving Guarantee

All asphalt and concrete paved surfaces shall be in compliance with City specifications and found free of any safety hazards or defects for twelve months following the date of final acceptance by the City.

6.3.B.II.c. Lighting

Lighting of park elements can provide a sense of safety. Lighting of sports facilities can be utilized to extend usable hours.

6.3.B.II.c.i. Lighting Standards

1. The preferred lighting and form of lighting control (timer, light sensor, etc.) shall be selected in collaboration with the PRCS Department.
2. Lighting systems and materials shall be designed and constructed in accordance with all local codes.
3. If lighting is required per PRCS Department, a complete site lighting plan including the locations of all transformers, lighting fixtures, fixture descriptions, lamp type and wattage, and lighting coverage or photometric plan shall be prepared and stamped by a licensed engineer.
4. Lighting shall comply with the maximum height, wattage, and shielding requirements for fixtures as stated in Rio Rancho Municipal Code Chapter 159 Outdoor Lighting.

6.3.B.II.c.ii. Parking Lot Lighting

1. Parking lot lighting should promote a safe environment and increase visibility for pedestrians and motorists using the facility during evening and night hours.
2. Parking lots shall be lit uniformly to an average brightness of 1 foot-candle.

6.3.B.II.c.iii. Sport Facility Lighting

1. Playing fields and sport courts shall follow the approved national lighting standards required for rules for evening or lighted play for the adult and/or youth sport or sports intended to utilize the fields or facility (including but not limited to Little League, softball, baseball, soccer, flag football, YAFL, cricket).

6.3.B.II.c.iv. Lighting Guarantee

The lighting system shall be in compliance with City specifications and local codes and found free of any safety hazards or defects for twelve months following the date of final acceptance by the City. Materials replaced due to workmanship or mechanical failure shall be replaced by the developer's contractor with material of the same brand and quality as that which is being replaced.

6.3.B.II.d. Fencing

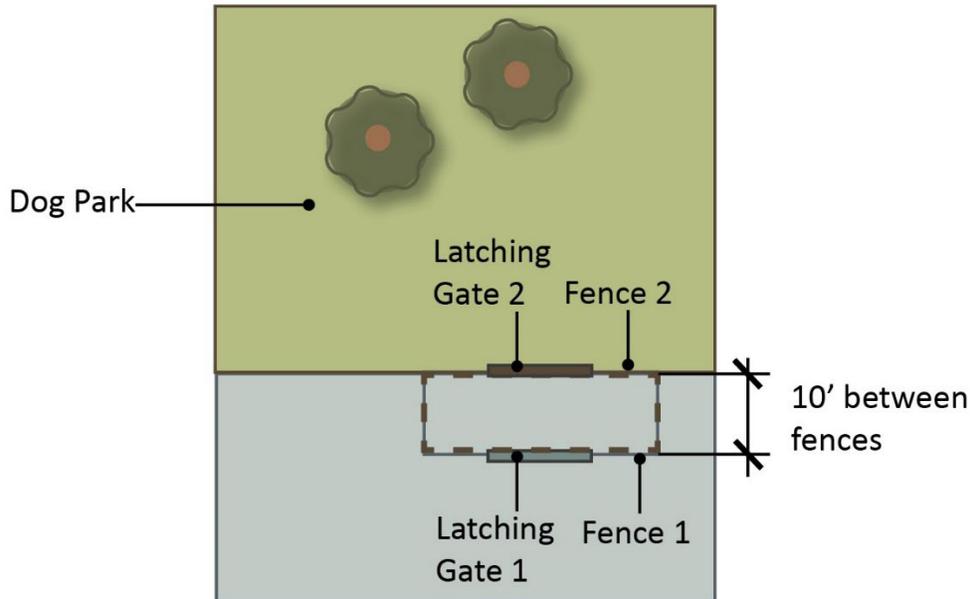
Fencing serves to provide access control, security, and screening. The following standards apply to fencing that will be constructed by the City or constructed by others and dedicated to the City.

6.3.B.II.d.i. Fencing Standards

1. The following specifications are the minimum requirements. Fencing with greater aesthetic or structural attributes may be required by the PRCS Department on a case-by-case basis.
2. Where ponds are part of a park facility and are required to be fenced, SSCAFCA and the Public Works Department must review and approve any proposed fencing.
3. Chain link fences shall follow the City standard for “chain link fences” through the PRCS Department’s standard sheet “10 CHAIN LINK FENCE”.
4. Chain link gates shall follow the City standard for “chain link gates” through the PRCS Department’s standard sheet “11 CHAIN LINK GATE”.
5. Fences shall meet the standards of Table 6.5 Fence Requirements. Fence design will vary in height and detailing per the specific site uses and requirements.

Table 6.5 Fence Requirements					
Fence Typology	Minimum Height	Fence Materials	Post	Entry Points	Other Requirements
Dog Park Fencing	4 ft	Vinyl coated chain link with a bottom rail	Steel posts with caps, anchored in a concrete footing.	Double gated with latching gates with a minimum separation of 10 ft.	Large and small dog areas shall be separated by 4 ft chain link fence with a bottom rail. A minimum 8 ft wide hinged or rolling maintenance gate, shall be provided.
Post and Cable Fencing	Determined on a site-by-site basis		Metal posts with caps, anchored in a concrete footing.	Locked “drop” section where the cable has been cut, looped and terminated to allow for a lock	
Drainage Pond and Open Space Fencing	4 ft	5 strands of barbless wire fencing	4”x4” wooden or metal posts set at least 3’ in the ground	A pipe maintenance gate at least 8’ wide.	

Figure 1 Dog Park Fencing



6.3.B.II.d.ii. Fencing Guarantee

Fencing shall be in compliance with City specifications and found free of any safety hazards or defects for 12 months following the date of final acceptance by the City. Materials replaced during the 12-month period due to workmanship or material failure shall be replaced with material of the same brand, type and quality as that which is being replaced.

6.3.B.II.e. Playgrounds

Playground structures provide opportunities for children to interact, learn, and play. These promote muscle development, motor coordination, social interaction, creativity, exploration, and a variety of different types of skills. Playground structures and play elements may be tailored to serve a specific subset of the community and should be unique to each site. All playground structures and elements must meet the following standards to promote inclusive access and safety.

6.3.B.II.e.i. Playground Standards

1. Play equipment and surfacing shall be International Play Equipment Manufacturers Association (IPEMA) certified to meet all requirements of American Society for Testing and Materials (ASTM), Consumer Product Safety Commission’s (CPSC), and Americans with Disabilities Act (ADA).
2. Playgrounds shall include equipment and features that provide a variety of play opportunities for both the 2–5-year-old and 5–12-year-old age ranges. Play equipment for these disparate age ranges shall be separated into two or more distinct areas to minimize conflict. The PRCS Department may consider installation of combined 2–12-year-old play equipment at its discretion.
3. Playground elements shall include equipment to build gross and fine motor skills, enhance core strength, and develop body awareness. Elements may include sensory play components, music

features, sounds and lights, tactile play elements, swings, spinning elements, slides, climbing elements, and elements that encourage social and imaginative play.

4. Play areas shall be signed appropriately for intended age ranges. Age-appropriate playground signs from the manufacturer of the playground equipment shall be installed.
5. All equipment shall be installed according to the manufacturer's instructions, by a certified NPSI and Manufacturer-Certified Installer. The Park developer shall provide the City with a letter attesting to this. Any constructed playground must have and pass a third-party playground audit. The Park developer shall provide the City with a letter and backup documentation attesting to this and stating compliance with ASTM, IPEMA, ADA, and CPSC.
6. Play structures must be approved by PRCS Department, installed according to manufacturer's instructions, and carry a minimum 5-year warranty.
7. Play structures and play elements must be placed over playground surfacing as required and dictated by their safety zones.
8. Shade shall be incorporated into the play area. Freestanding shade structures shall comply with the standards of this chapter.
9. Seating shall be incorporated directly adjacent to play areas.

6.3.B.II.e.ii. Prohibited Playground Equipment

The following materials and play elements are prohibited for use in City of Rio Rancho parks.

1. Mirror or window panels.
2. Bulb panels.
3. Wooden structures.
4. Steel and tube slides.
5. Tile Safety Surfacing.
6. Expanded Metal Decks.
7. Decks with holes larger than 3/8".
8. Structures with decks that do not use a clamping system.
9. Structures with decks higher than 48" with posts smaller than 5".
10. Rotationally molded plastic panels.
11. Products that do not conform to ASTM and CPSC Standards.

6.3.B.II.e.iii. Playground Surfacing Standards

1. Surfacing shall be selected and coordinated with the PRCS Department.
2. Depth of surfacing required is dependent on fall heights associated with the play equipment selected and shall be coordinated with the playground equipment manufacturer.
3. Final installation details shall conform to the manufacturer's recommendations.
4. Playground surfacing shall be bordered by a concrete turndown edge, concrete header curb, or standard concrete sidewalk perimeter, installed flush to the concrete ADA accessible ramp and path associated with the playground area, as defined by ASTM and CPSC. Alternatively, the PRCS Department will consider the use of Playground Manufacturer's borders on a site-by-site basis. The depth of this border shall be coordinated with the depth of the playground surfacing.
5. Playground surfacing must be playground certified manufactured wood fiber and/or poured in place rubber surfacing.

6.3.B.II.e.iv. Playground Guarantee

1. All equipment shall be in compliance with a playground audit and found free of any safety hazards or defects for twelve months following the date of final acceptance by the City.
2. The following warranties (manufacturer or otherwise) shall be provided for specified equipment unless stated otherwise herein. Letters or warranty certificates for installed equipment shall be provided to the City for the following minimum periods of time, at the time of final acceptance of the facility.
 - a. Posts – 25-year warranty.
 - b. Plastic and Steel Components – 15-year warranty.
 - c. Play Equipment Coatings – 15-year warranty.
 - d. Moving Parts – 3-year warranty.
3. The Park developer shall obtain and provide Certificates of Liability Insurance for the following amounts, to the City to be placed on file, prior to the start of work.
 - a. Playground Manufacturer - \$1,000,000.
 - b. Playground Sales Representative/Distributor - \$1,000,000.
 - c. Playground Installer - \$1,000,000.

6.3.B.II.f. Site Amenities

6.3.B.II.f.i. Furniture

1. Benches, trash receptacles, and picnic tables shall be made of vinyl coated steel, powder-coated steel, perforated metal, concrete, or recycled plastic. Wood material is not acceptable.
2. Site furniture colors shall be selected in coordination with PRCS Department.
3. Picnic Tables with a single pedestal or central support will not be accepted by the PRCS Department.
4. Picnic tables, benches and trash receptacles shall be in-ground mounted in hardscape or paved surface, or vandal proof surface mounted when located on concrete pads.
5. Site furniture shall not be placed within turf areas.
6. At new parks, benches, tables, and trash receptacles shall be of the same aesthetics for continuity in appearance.
7. Concrete pads for picnic tables, benches, trash receptacles, and shade structures shall follow the concrete paving standards of the City's Public Works Department.

6.3.B.II.f.i.1. Trash Receptacles

1. Trash receptacles shall be located where most park activities are intended to occur (such as a gathering areas with shade structures, tables, or at playgrounds) and/or near the parking lot.
2. Trash receptacles shall have dome lids with closing doors unless otherwise approved.
3. The PRCS Department will not accept trash receptacles with locking doors.
4. Trash receptacles shall be placed at locations easily accessible for regular maintenance and outside of the public right-of-way.

6.3.B.II.f.i.2. Dog Waste Stations

1. Dog waste station shall have a unit(s) for waste bags and imbedded waste collection. The unit shall be able to dispense bags that are 8" x 13" on rolls, and the waste collection receptacle shall accommodate a 10-gallon bag or larger and have a lid.

6.3.B.II.f.i.3. Fitness Stations

1. Fitness stations shall be purchased from certified manufacturers.
2. Stations must be highly durable and intended for outdoor use.
3. All stations shall be installed per the manufacturer's recommendations.
4. Each station must be accompanied by instructional signage.
5. Surfacing associated with fitness stations shall be ADA accessible.

6.3.B.II.f.ii. Shade Structures

1. Shade structures shall be purchased from NPSI certified playground or shade structure manufacturers or their representative and shall be off-shelf products not custom assembly.
2. Shade structures are acceptable for construction if they can be justified for the region with an Evaluation Service Report or a registered, State of New Mexico Engineer's structural calculations.
3. Surfacing associated with shade structures shall be ADA accessible.
4. Engineered drawings are required for permitting and inspection of shade structures or similar structures 200 square feet or larger. These drawings shall include structural calculations.

6.3.B.II.f.iii. Drinking Fountains

1. Drinking fountains must be ADA accessible.
2. The manufacturer and model shall be reviewed and approved by the PRCS Department.
3. Dog fountains may be incorporated into the drinking fountain.
4. A drainage sump suited to accommodate the level of anticipated fountain use shall be installed per a detail on the plans.
5. Drinking fountain site preparations and installation shall follow local codes and ensure proper drainage if the fountain drain should be clogged and the trough overflow.
6. The concrete pad providing accessibility to the fountain shall follow the concrete paving standards of the City's Public Works Department. Any unpaved area surrounding the base of the drinking fountain not required for accessibility shall be filled with crusher fines or other permeable paving, at 3" depth and made level to adjacent concrete paving.

6.3.B.II.f.iv. Tennis and Pickleball Courts

1. Pickleball court total surface area should be sized 34' x 64' with a playing surface of 30' x 60'.
2. Tennis courts total playing area is 27' x 78' for a singles court and 36' x 78' for a doubles court.
3. Tennis and Pickleball courts should be oriented in a north-south orientation to minimize sun glare wherever possible.
4. At a minimum, courts shall be paved with asphalt. If a court is constructed of concrete, it shall follow the specifications for concrete and asphalt courts below.
 - a. Asphalt courts: Hot mixed asphalt shall be 4" thick with two lifts, the first a lower layer with $\frac{3}{4}$ inch to $\frac{1}{2}$ inch minimum aggregate size, gradations No. 3 or 4 to a compacted thickness of not less than 2-1/4 inches or 1-3/4", with an upper layer installed for a smooth surface with fine-graded mixture of a maximum aggregate size of $\frac{1}{2}$ inch to 3/8", gradations No. 4 or 5 to a compacted thickness of 1-3/4 inch or 1-1/4 inch. Surface shall be leveled, smoothed and finished to prevent ponding of water. Asphalt shall be laid over an aggregate base course layer of 4 inches compacted to 95% and six-inch prepared sub grade compacted to 95%.

- b. Concrete courts: Concrete poured in place shall be 5" thick, 4000 psi with post-tension reinforcement, medium broom finish, over 95% compacted sub grade.
- 5. 100% acrylic coating are recommended for surfacing courts. Colors to comply with USAPA.
- 6. Layout of lines and colors to comply with USAPA. Lines should be white with the boundary line to be contrasting from the court's surface color.
- 7. Court shall have a max of 1% slope or cross-slope.
- 8. Finish grade of either asphalt or concrete shall match finish grade of surrounding area.
- 9. Tennis and Pickleball Courts shall be made ADA accessible via pathways to the parking lot and to neighborhood sidewalks wherever possible.
- 10. A permanent net should be installed with appropriate footings and removable posts with sleeves. The net can be made of any mesh material that will not allow a ball to pass through. It should be at least 21 feet 9 inches long, stretching from post to post; from the bottom edge to the top, it should be at least 30 inches wide. The posts should be 22 feet apart, and no more than 3 inches in diameter. Once the net is suspended from the posts across the center of the court, it should be 36 inches tall at the sidelines, and 34 inches tall in the center. The top edge of the net should have a cord or cable, and it should be covered with a 2-inch tape.

6.3.B.II.f.v. Basketball Courts

- 1. Courts shall be sized and striped to meet High School or College court dimensions.
- 2. Basketball goals and courts shall be oriented as a half court if one goal is required and oriented as a full court if two goals are required.
- 3. At a minimum, basketball courts shall be paved with asphalt. If a basketball court is constructed of concrete, it shall follow the specifications for Concrete basketball and asphalt courts below.
 - a. Asphalt basketball courts: Asphalt shall be 2" thick with a smooth finish. Surface shall be leveled, smoothed and finished to prevent ponding of water. Asphalt shall be laid over a prime coat applied over six-inch prepared sub grade compacted to 95%.
 - b. Concrete basketball court pads shall be 4" thick, 4000 psi with 6" x 6" welded wire mesh (WWM). WWM to be supported by keyway joints or 2" high chairs and tied at all intersections, over 95% compacted sub grade.
- 4. Courts shall have a max of 2% slope or cross-slope.
- 5. Finish grade of either asphalt or concrete shall match finish grade of surrounding area.
- 6. Basketball Courts shall be made ADA accessible via pathways to the parking lot and to neighborhood sidewalks wherever possible.

6.3.B.II.f.vi. Skate and Bike Parks

- 1. Skate parks shall include a minimum of eight (8) elements and a minimum surface area of 10,000 square feet.
- 2. Modular Skate Park elements and signs shall be installed by Manufacturer or certified installer. The Park developer shall provide the City a letter attesting to this.
- 3. Skate & Bike park elements may be concrete or modular. All elements must be constructed for weather, UV radiation, and other conditions of outdoor use without a cover. Modular elements should have metal frames and metal panels. The City will consider use of recycled plastic panels. Actual elements should be chosen with the PRCS Department.
- 4. Anti-vandal hardware is required, and anti-vandal surfacing is preferred wherever possible.

5. Skate Park Rules sign is required. Sign text shall have name of park, hours of operation, required protective equipment, prohibited activities, and “Skate at your own risk” statement. The PRCS Department will work with the Park designer to determine appropriate sign language on a site by site and manufacturer basis.
6. All Skate Parks will have a concrete skate pad per the following specifications:
 - a. The concrete pad shall be 4” thick, 4000 psi with 6” x 6” welded wire mesh (WWM). WWM to be supported by 2” high chairs and tied at all intersections, over 95% compacted sub grade.
 - b. The 4000-psi concrete will have a hard trowel finish (12 passes), with no broom finish, unless otherwise directed by the PRCS Department.
 - c. Saw cut joints shall be 1/8” wide by ½” deep and shall be located as shown on the Drawings.
 - d. Expansion joints shall be placed where they will not impede skate wheels. Joints between pours in the middle of a slab shall be keyed or doweled cold joints.
 - e. Finish surface shall not have deviations greater than 1/8” as measured with a 10’ long straight edge. Grading is not acceptable for remedying deviations.
7. Skate Parks shall be made ADA accessible via pathways to the parking lot and to neighborhood sidewalks.

6.3.B.II.f.vii. Site Amenity Guarantee

1. All equipment shall be in compliance with a playground audit where applicable, and all equipment shall be found free of any safety hazards or defects for twelve months following the date of final acceptance by the City.
2. The following warranties (manufacturer or otherwise) shall be provided for specified equipment unless stated otherwise herein. Letters or warranty certificates for installed equipment shall be provided to the City for the following minimum periods of time, at the time of final acceptance of the facility.
 - a. Skate Park modular components and hardware – 15-year warranty.
 - b. Tables, benches and trash cans – 15-year warranty.
 - c. Steel shade structure – 10-year warranty.
 - d. Steel frame and cloth topper shade structure – 10-year warranty steel frame, 5-year warranty on fabric.
3. The Park developer shall obtain and provide Certificates of Liability Insurance for the following amounts, to the City to be placed on file, prior to the start of work.
 - a. Manufacturer - \$1,000,000.
 - b. Sales Representative/Distributor - \$1,000,000.
 - c. Installer - \$1,000,000.

6.3.B.II.g. Landscape and Plantings

Landscape plantings enhance the quality of parks and recreational facilities and provide services such as habitat, sense of place, heat reduction, and carbon sequestration. Plantings can also enhance stormwater retention and infiltration.

6.3.B.II.g.i. Landscape and Planting Standards

1. Landscape areas shall be designed for passive water harvesting and stormwater infiltration.
2. Species of trees, shrubs, and ground cover shall follow the list of approved and prohibited species found in the City’s Landscape Ordinance and or Vision 2020 Plan with emphasis on native or naturalized well adapted species. Exceptions to this list may occur at the direction or approval of the

PRCS Department. The preferred tree species are listed within the City of Rio Rancho Administrative Policies and Procedures Tree Preservation and Maintenance Policy.

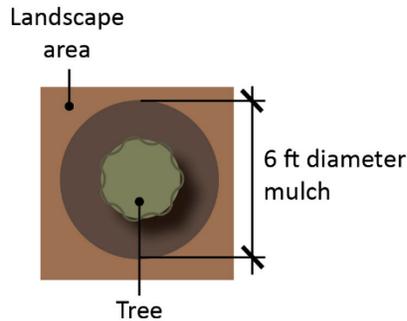
3. All trees, shrubs, ground covers, seeded turf, and sodded turf shall be planted in amended soil and irrigated by automated underground irrigation system unless otherwise approved by the PRCS Department.
4. Irrigation system shall be designed to prevent off-site run-off or overspray of irrigation water and so that there is no fugitive water from the irrigation over-spray.
5. All trees shall be 2" caliper or larger.
6. The following trees and shrubs shall not be planted in City Park property:

Table 6.6: Prohibited Trees and Shrubs	
Common Name	Scientific Name
Green Ash	Fraxinus Pennsylvanica
White Ash	Fraxinus Americana
Siberian Elms all species, varieties, or cultivars of the genus except Dioecious Ulmus parviflora	Ulmus Species
Hackberry	Celtis Occidentalis
Black Locust	Robinia Pseudoacacia
Sugar Maple	Acer Saccharum
Silver Maple	Acer Saccharinum
Box Elder	Acer Negundo
Poplars, including aspens and the female cottonwood	Most Populus species
Spruces	Picea species
Weeping Willow	Salix Sepulcralis
Globe Willows	Salix Matsudana
Russian Olives	Elaeagnus Angustifolia
Pyracantha	Most Pyracantha species
Ponderosa Pine	Pinus Ponderosa
Fruiting Trees	
Cypress	Genus Cupressus
Juniper and Cedar all species, varieties, or cultivars of the genus except male plants that do not exceed two (2) feet tall when mature and any size plant that is female.	
Mulberry	Genus Morus
Cottonwoods and Poplars all species, varieties or cultivars of the genus except Populus fremontii variety Wislizenii	Genus Populus

7. Plant material quality, size, and condition shall be in accordance with American Standard for Nursery Stock, 1980, as published by the Committee on Horticultural Standards of the American Association of Nurserymen, Inc.
8. All plants shall be typical of their species or variety. All plants shall have normal, well-developed branches and vigorous root systems. They shall be sound, healthy, vigorous, and free from defects, disfiguring knots, abrasions of the bark, sunscale injuries, plant diseases, insect eggs, borers, and all other forms of infections.

9. Unless otherwise stated on the landscape plan or approved by PRCS Department, all plants shall be nursery grown and shall be tagged with nursery labels indicating species and variety. Nursery tags should be removed at planting.
10. Container grown plant material shall have been grown in its delivery container for not less than six (6) months, but for not more than two (2) years. Any root-bound material will not be accepted.
11. Balled and burlapped plant material shall have a solid ball of earth of minimum specified size and held in place securely by burlap and a stout twine or rope. Broken or loose balls will not be accepted. When inspecting trees, the PRCS Department staff shall check for girdling roots by removing soil from top of root ball. The Park developer will also verify that all metal wire and burlap has been removed from the root ball prior to planting.
12. Unless specifically noted on the landscape plan, all trees shall have a single trunk that is strait and free of “dog legs”, “crooks”, “Y-crotches”, or other disfiguring shapes. The central leader of all trees shall not have been pruned. Trees with double leaders are not acceptable.
13. All plant material shall have a uniform shape around its complete circumference. Plant material with irregular branching patterns or with branching patterns more highly developed on one side than on the other sides shall not be accepted.
14. Bark mulch, if used as a ground cover, shall be a shredded mixture of wood cambium and bark nuggets, be free of other materials, and shall be free of obvious pests.
15. Soil analysis for all landscape and plantings shall be submitted showing pH, soil texture analysis, soluble salts, and sodium. An interpretation of the soil test and recommendation on soil amendments by a professional soil scientist certified by A.R.C.P.A.C.S shall be submitted to the PRCS Department.
16. Planting shall meet the following requirements:
 - a. The Contractor shall take care when backfilling planters to provide adequate compaction of the fill material in order to prevent settling.
 - b. Prepare all planting holes and install plants as shown on the PRCS Department’s standard sheets “14 SHRUB PLANTING DETAIL” and “15 TREE PLANTING DETAIL”. Plants shall be set plumb and straight.
 - c. Backfill for planting holes shall be positioned in the hole and backfilled. The backfilling shall be completed, and materials tamped. When hole is nearly filled, water thoroughly and allow water to soak away. If settling of backfill occurs after watering, add more backfill to bring to finish grade.
 - d. All trees shall have tree wells unless otherwise directed by the PRCS Department. Trees within parks shall not be planted within a hard surface with a narrow pedestrian corridor. Tree wells located within hardscapes (i.e. concrete pad) shall have a minimum interior area of 6’ x 6’ of covered bark mulch. Tree wells located within soft (i.e. Turf Area) surface areas shall have a 6’ diameter tree ring with bark mulch. The purpose of such is to keep mowers, trimmers, and small equipment from coming in contact with the tree’s base or root system.

Figure 2 Tree Wells



- e. After completion of planting, all trees shall be pruned at the direction of the PRCS Department.
 - f. Trees other than those less than thirty (30) feet in height at maturity shall not be planted within ten (10) lateral feet of any utility lines, within 10 feet of fire department equipment (i.e., fire hydrants, Fire Department Connections (FDC), and gate valves), or within 10 feet of water and sewer main lines.
17. Mulching shall be completed as indicated on the Drawings or at the direction of the PRCS Department. Bark mulch shall be used, unless otherwise approved.
 18. All disturbed areas shall be covered in mulch.
 19. Trees shall be staked as indicated on the standards specifications. Tree stakes shall be removed within one growing season.

6.3.B.II.g.ii.Landscape Plans

1. Landscape plans are required for all parks and should be provided with preliminary construction plans. Conceptual plans provided during the Concept Planning stage, as described in Section 2.6.B. Parks and Recreational Facilities Development Procedures, should include conceptual landscape plans.
2. Complete plant list, including quantities, install sizes shall be included on the landscape plan.
3. The botanical and common names used for the plants called for on the landscape plan shall be generally in conformity with standardized plant names, or in conformity with the names accepted in the nursery trade.

6.3.B.II.g.iii. Plant Materials Guarantee

All plant materials shall be guaranteed to be in a live, healthy, and normal growing condition following the date of final acceptance by the City through one calendar year. Plant materials that are dead or in an unhealthy, impaired growth condition shall be removed and replaced by the Park developer as directed by the City at no additional cost after the end of growing season. Replacement material shall be of equal quality, size, and species as that which is being replaced and shall be approved by the City prior to planting. Any plants replaced after the first six months of the guarantee period shall also be under warranty for six months after the replanting date.

6.3.B.II.g.iv. Turf Grasses

Turf grasses are an integral component of play fields within parks. Turf grass fields provide opportunities for organized team sports and informal play. Turf fields may be designed as a multi-use field or striped to accommodate a specific sport. Standards for turf grasses ensure the proposed grasses are appropriate for the climate and growing conditions and easily maintained to create safe, play fields.

6.3.B.II.g.v. Turf Grass Standards

1. Turf play areas sized for athletic competition, shall have a slope of 1% minimum and 2% maximum. All developed play, field and activity areas must be leveled without significant holes or bumps. The grade of other turf areas within the park may vary only at the discretion of the PRCS Department.
2. Turf shall not be installed on slopes of 3% or greater.
3. All turf shall be irrigated with underground automated irrigation systems.
4. Turf with no intended active use is prohibited in City parks.
5. Turf areas shall have full head-to-head irrigation coverage, designed per the standards of Section 6.3.B.II.h. Irrigation.
6. If seed is used to establish turf for a playfield or an athletic field, the turf area shall be fenced off until sufficient establishment is achieved. The PRCS Department may withhold final approval/acceptance of a park until seeded fields are established.
7. No turf grass shall be planted within 8'-0" of the back of any street curbs.
8. A concrete mow curb or sidewalk shall be installed at the edge of all turf grass. Concrete mow curbs shall follow the PRCS Department's standard sheet "#8 CONCRETE MOW CURB".
9. Drought-tolerant grass mix for seed and for sod areas shall be approved by the PRCS Department prior to completion of project design. Grass mixes shall be specified on the Drawings based on soil test results and not in the Specifications. Cool weather grasses and Bermuda grasses are prohibited.
10. The Contractor shall include PRCS Department staff in project inspections, reviews for substantial completion and final completion.
11. Soil bed preparation shall meet the following requirements:
 - a. Prior to soil preparation, all finish grades shall be established and approved per the grading plan. The finish grade of the area to be seeded or sodded shall be free of irregularities, humps, ridges, depressions, or low areas.
 - b. Apply a uniform 2" layer of organic amendment and 4lbs. of starter fertilizer per each 1,000 square feet to the entire area to be seeded or sodded. After application of organic amendment and starter fertilizer all areas to be seeded or sodded shall be ripped to a depth of twelve inches and thoroughly rototilled to a minimum depth of 6 inches. After rototilling is complete at cross directions, drag to an even grade, then roll for firmness.
 - c. After applying amendments and before seeding or sodding, the finish grade shall be brought to a firm, even surface, free from stones or lumps, in excess of one-inch diameter, and shaped to provide drainage.
 - d. Fertilizer shall be a granular form starter fertilizer with a guaranteed analysis of 18-24-16, unless otherwise directed by the PRCS Department.
 - e. Park developer shall submit soil analysis showing pH, soil texture analysis, soluble salts, and sodium. Provide an interpretation of the soil test and recommendation of improvements or changes to the soil by a professional soil scientist certified by A.R.C.P.A.C.S.
12. Sodding shall meet the following requirements:

- a. The ASPA (American Sod Producers Association) Guideline Specifications to Sodding are recommended as guidelines for turf grass sodding.
- b. The City reserves the right to require that a sample of sod and a written submittal of the seed mix shall be submitted a minimum of fifteen (15) days prior to laying sod or placing seed.
- c. Sod shall be vigorous, well-rooted healthy turf free from disease, insect pests, weeds, other grasses, stones and other harmful or deleterious matter.
- d. Sod shall be cut by an approved mechanical sod cutter to a thickness of not more than 1" or less than ½". Sod pieces shall be cut a maximum of 18" wide. Handling of sod shall be done in a manner that will prevent tearing, breaking, drying or any other damage. Sod shall be installed in place on the site not more than 24 hours after cutting.
- e. Sod shall have no more than ½" of loose thatch. The sod shall be dense enough so that an entire strip can be lifted by the top 10% without breaking.
- f. Lay sod over moistened soil, lightly raking the soil ahead of each sod strip. Sod shall be laid parallel to the direction of slope and shall have staggered joints. Pieces shall be fitted together tightly so that no joint is visible, and sod tamped firmly and evenly by hand. Stake as required on slopes.
- g. Water all sodded areas immediately after final rolling with fine spray to a depth of 4". Irrigate by means of the automatic underground irrigation system all sodded areas as often as necessary to promote healthy grass growth.
- h. Mowing during the maintenance period will be scheduled so that the grass is maintained at a height no shorter than two (2) inches and no greater than three (3) inches.

13. Seeding shall meet the following requirements:

- a. All soil areas, which have been prepared prior to the seeding season, shall be observed for effects of weather that have affected the quality of soil preparation. If the soil areas are unaffected, they will be seeded immediately after the opening of the current seeding season. If they have been affected, the PRCS Department and Park developer shall identify the steps in Soil Bed Preparation that may need to be repeated prior to seeding.
- b. All areas, which are prepared during the seeding season, shall be seeded that same season.
- c. Seed mix shall be as specified on the drawings.
- d. Each bag of seed shall be sealed and labeled by the seed dealer in accordance with Federal Seed Laws and New Mexico Department of Agriculture Labeling Laws. This includes variety, kind of seed, lot number, purity, germination, percent crop, percent inert, percent weed (including noxious weeds), origin test date and net weight. Federal Seed Laws require that analysis shall be no older than 9 months for seed shipped intra-state.
- e. Wetting agent shall be Hydro-wet-RTA as manufactured by KALO, Inc., 4550 W 109th Street, Overland Park, KS 66211, 1(800) 255-5196, or an approved equivalent wetting agent having the same characteristics and performance abilities as Hydro-wet. Apply at a rate of 5 gallons liquid product per acre.
- f. The seed mix and rate shall be as specified herein or as shown on the drawings. The prescribed mix and rate shall be uniformly applied over the area to be seeded.
- g. Park developer's vehicles and other equipment shall not travel over the seeded areas. If, as determined by PRCS Department staff, rain or some other factor occurs over prepared surfaces prior to seeding which prevents seeding to the proper depth, the Park developer shall again prepare the seed bed without additional compensation.
- h. Unless otherwise directed by the PRCS Department, turf grass seeding shall only be accomplished in the spring from April 1 through May 30 or in the fall from August 15 through

September 15. “Low water use grass” seeding shall only be accomplished in the spring from April 15 through June 1. If seeding is not accomplished during the “time of seeding” the Park developer shall accomplish the seeding at the “time of seeding” during the next calendar year. Park developer extension of the “time of seeding” shall be accomplished at no additional cost.

- i. All seed shall be drilled in cross directions, where practical, with 50% of the seed applied in each direction. The second pass of the seeder when seeding in cross directions shall be across the slope. In areas where seeding in cross directions is impractical, seeding shall be accomplished by drilling and shall be across the slope. Seed shall be planted approximately ¼” inch deep, with a maximum depth of ½” inch unless otherwise specified on the Drawings. The distance between the drilled furrows or slits shall not be more than 2 inches. Seeding shall be done with grass seeding equipment in good working order double disc openers, depth bands, drop tubes, packer wheels or drag chains, rate control attachments, and seed boxes with agitators for trashy seed.
- j. Watering of the seed will be the responsibility of the Park developer. All seeded areas shall be watered immediately after completion of seeding, keeping the top two inches of evenly moist until seed has uniformly germinated and grown to a height of two inches. In instances where the irrigation system is metered separately, the Park developer shall be responsible for the cost of water during seeding and maintenance of seeded turf until final acceptance.
- k. After the seed has germinated and the grass has reached an approximate height of one-half inch, the wetting agent shall be applied in accordance with the manufacturer's recommendations.

6.3.B.II.g.vi. Turf Grass Guarantee

Sod and seeded turf shall be guaranteed to be in a live, healthy, and normal growing condition following the date of final acceptance by the City through one twelve month growing season. Sod that is dead or in an unhealthy, impaired growth condition shall be removed and replaced, or top dressed and seeded by the Park developer as directed by the City at no additional cost. Replacement seed or sod shall be of equal quality and species mix as that which is being replaced and shall be approved by the City prior to planting.

6.3.B.II.h. Irrigation Systems

Irrigation is necessary to allow plants to survive and thrive. Irrigation is essential in planting beds, turf fields, and for tree establishment. Irrigation standards ensure adequate watering while prioritizing water conservation. PRCS can provide irrigation standard details to the Developer and/or their Design Professional after the initial park planning meeting between the City/PRCS and Developer.

6.3.B.II.h.i. Standards

1. Only approved irrigation products as specified in Appendix 6.5.B Irrigation Products and Execution are permitted. Rainbird Products are required unless none is available or unless otherwise approved.
2. Irrigation Plans and Record Drawings shall be prepared in accordance with the standards of Appendix 6.4.A.
3. 6.4.A Irrigation Design to prevent fugitive water.
4. All existing utilities to be coordinated with during design phase.

5. Manual drain valves shall be the size and type as indicated and at locations as shown on the Drawings. These valves shall be in a bed of ¾" gravel for drainage.
6. In areas where shade structures or picnic / seating areas are present, a quick coupler shall be located within 10 feet of the structure or area.
7. Materials noted on irrigation plan shall be materials installed.
8. Irrigation zones shall be designated by application type. Mix application, combining drip, bubbler, sub surface, or spray, is prohibited.
9. Triangulated Head-to-head coverage is mandatory.
10. Irrigation system to be designed to apply 2" of spray irrigation to high uses turf and 1" to low uses turf. (Appendix 6.5.B).
11. Spray irrigation on a sloped landscape shall be isolated with top and bottom only zones to minimize sheet erosion.
12. All parks with turf areas greater than 1 acre shall be audited by an irrigation association Certified Landscape Irrigation Auditor (CLIA) professional.
13. Utilities must approve the following:
 - a. Febco 825 Y on 2" and less water meters.
 - b. Febco 880 on 2.5" and greater water meters.
 - c. Meters must be treated and registered per Rio Rancho Municipal Code Chapter 154.
14. Backflow enclosure to be heated.
15. Irrigation systems with lines over 2.5" will require thrust blocks and joint restraints.
16. Controller must be GFI protected.
17. Controller and backflow enclosure to be on individual breakers.
18. Central controller computer monitoring capabilities are mandatory. Rainbird ESP or an equivalent shall be provided.
19. A flow meter shall be installed before the Master Valve assembly and before the Backflow preventer. The flow meter shall be a Master Meter.
20. Flow sensors and master valves are mandatory.
21. All materials shall be new and without flaws or defects of any type.
22. Rainbird products are preferred.
23. Products shall meet the standards of Appendix 6.4.A.
24. All PVC piping to be sch 40 for mainline and 6.5" lateral lines.
25. Crossing pipes is prohibited unless otherwise approved by PRCS Department staff.
26. No Saddle tapping of main line.
27. No pipe stacking in trenches.
28. All PVC fittings to be sch 40.
29. Galvanized nipples- sch 40.
30. PVC nipples- sch 80.
31. PVC true union ball valve on upstream and PVC union on Downstream pipe mandatory.
32. Rainbird Rotors (impacts not acceptable).
33. Rainbird 1800 series spray heads.
34. Rainbird 1400 series bubblers (pressure compensating).
35. Rainbird 44-LRC quick coupling.
36. Bubbler to be installed on flex risers.
37. Teflon tape to be used on all PVC thread connections and PVC thread to galvanized connection.
38. Pipe thread compound for galvanized to galvanized connections.
39. Pipe dope to connect valves is prohibited.

40. PVC Cement must be NSSF approved and meet ASTM D 2564 requirements.
41. Expansion coils in valve box to be 36”.
42. 120 volt- wiring shall be solid copper (or stranded copper in larger wire sizes), underground feeder for direct burial and PVC insulated. Size of wire shall be #12 AWG.
43. 24 volt- wiring shall be solid copper wire, PVC insulated, UL approved underground feeder wire for direct burial in ground. Common wires shall be #12, white, unless otherwise noted on Drawings. The control wires shall be #14 of any color other than white unless otherwise indicated on the Drawings.
44. Sleeving pipe- PVC calls 200(2x sleeved pipe size).
45. No crossing sleeves.
46. Trench depths shall be 24” deep and sufficient to provide the specified pipe cover as described elsewhere in these specifications.
47. In rocky areas the trenching depth shall be 6” below normal trench depth to allow for pipe bedding as described in other portions of these specifications.
48. In areas where trees are present, trench lines will be adjusted on the site to eliminate any damage to tree roots.
49. All backfill material shall be subject to approval by the City. Backfill material shall be free from rock, large stones, brush, sod, frozen material, or other unsuitable substance that may damage pipe during the backfilling operations.

6.3.B.II.h.ii. Irrigation System Execution

Execution shall generally be conducted using the following process. Appendix 6.5 B Irrigation Products and Execution provides process details.

1. Product handling.
2. Excavation and trenching.
3. Pipe and fitting installation.
4. Solvent welding procedure.
5. Backfilling.
6. Sprinkler head installation.
7. Controller installation.
8. Automatic valve installation.
9. 24-volt control valve wiring.
10. 120-volt controller wiring.
11. Testing.
12. Adjusting system.
13. Irrigation audit.
14. Clean up.
15. Protection of existing utilities.
16. Rock.
17. Final acceptance.
18. Operational instruction.
19. Guarantee.

6.3.C Trails and Multi-Use Paths

6.3.C.I.a. Purpose

1. Provides a safe and convenient alternative to automobile transportation.

2. Provides connections to amenities throughout the community including parks, schools, and natural areas.
3. Provides recreational opportunities.

6.3.C.I.b. Service Area

Trails and multi-use paths aim to serve the entire community and provide connections to surrounding areas.

6.3.C.I.c. Location Guidelines

1. Located along existing streets and roadways.
2. Located along arroyos.
3. Located along utility rights-of-way and other public properties or easements.
4. Connected to other trails, sidewalk, or bike facilities.
5. Connected to schools and recreation facilities.
6. Oriented to minimize trail grade changes.

6.3.C.I.d. Trail and Multi-Use Path Elements

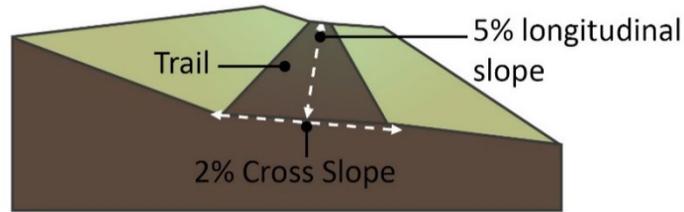
Trail and multi-use path elements should be selected in coordination with the PRCS Department. Trails and multi-use paths should be designed in compliance with the standards of this chapter. Suggested trail elements include seating every half mile, signage at key access points and intersections, and trash receptacles with dog waste station every half mile.

6.3.C.II. TRAILS AND PATH DESIGN STANDARDS

1. Trails and paths within the public right-of-way shall comply with the standards of Chapter 4 Transportation.
2. This section addresses the construction of a variety of trails and paths that may or may not be included as an improvement in a park project. These trail specifications are applicable to trails and paths that will be constructed by the City or constructed by others and dedicated to the City.
3. Park features shall be made ADA accessible via pathways to the parking lot and surrounding neighborhood sidewalks wherever possible.
4. Park trails and paths shall comply with the requirements of Table 6.7 Park Trail and Path Standards.

Table 6.7 Park Trail and Path Standards				
Trail Typology	Minimum Width	Materials	Longitudinal Slope	Cross Slope
Paved trails within parks	5 ft	Asphalt or concrete	5% max	2% max
Crusher fine trails	5 ft	Stabilized crusher fines	5% max	2% max

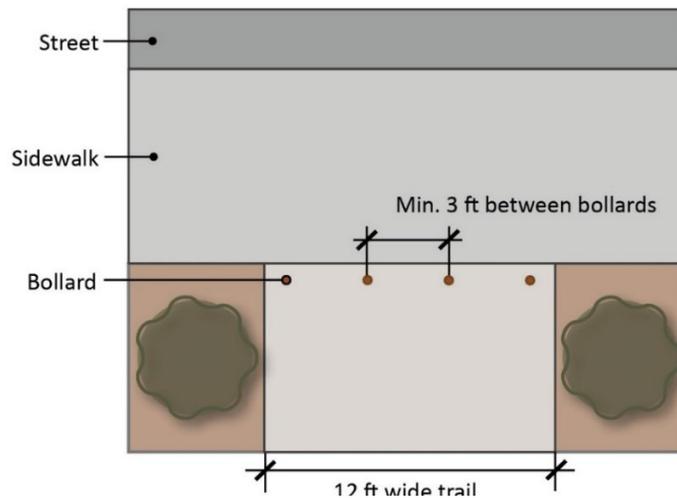
Figure 3 Cross-Slope and Longitudinal Slope of Trails



6.3.C.II.a. Paved trails

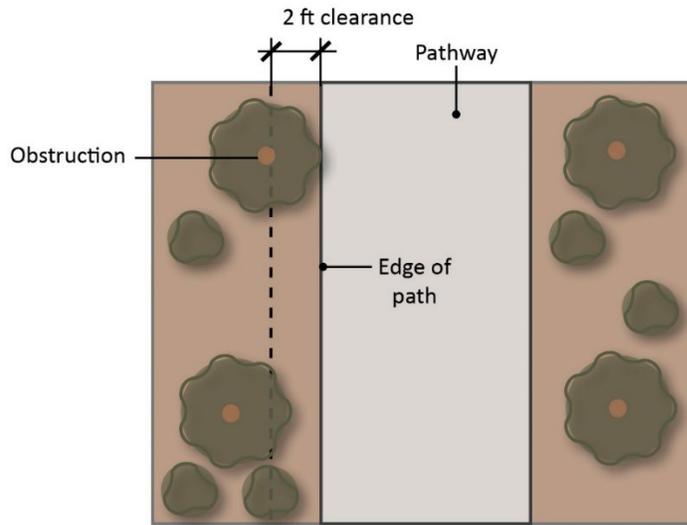
1. Paved trails within parks (not including sidewalks) and multi-purpose trails within subdivisions shall follow the City Standard for “paved pedestrian trail or parking lot” through the Department of Public Work’s standard sheet “Pavement Sections – DWG. No. PS-01.”
2. Paved trails shall meet minimum ADA accessibility requirements.
3. To prevent motorized vehicles from using the trails, barriers such as boulders, gates or bollards, may be placed appropriately at trail entrances. Fixed barriers, such as boulders or bollards, if used, should be a minimum of 3 ft apart to allow ADA access where appropriate.

Figure 4 Barrier Placement



- a. A minimum of 2 feet of clearance between the edge of the path and any obstructions, such as shrubs, trees, signs or fences shall be maintained.

Figure 5 Path Clearance



- b. Accessible pathways leading to play structures, tables, basketball courts, etc. and neighborhood sidewalks shall be provided.

6.3.C.II.b. Crusher fine trails

1. Crusher fine trails shall be comprised of crusher fines mixed with a binding product approved by PRCS Department staff, at 4-inch depth, placed on a 95% compacted subgrade. The binding product shall be applied per the City’s or the manufacturer’s direction.
2. Trails shall have a uniform surface free of voids, depressions, or raised areas greater than 1/2”. Crusher fine paths in or adjacent to turf areas shall have 6 inch wide and 6-inch-deep concrete mow curb between the path and turf.

6.3.C.II.c. Open Space Trails

1. Open space trails are defined as trails or foot paths that are in a natural setting or mostly unimproved state and may or may not be ADA accessible.
2. Trail design and width shall be selected in consultation with the PRCS Department.
3. Open space trails shall meet the standards of Table 6.8 Open Space Trail Standards.

Table 6.8 Open Space Trail Standards		
Open Space Trail Typology	Minimum Width	Materials
Improved multi-purpose open space trail	8 ft	Crusher fine
Improved multi-purpose open space trail as commuter connection	8 ft	Asphalt

Table 6.8 Open Space Trail Standards		
Open Space Trail Typology	Minimum Width	Materials
Improved open space trail	8 ft	Compacted native material or stabilized crusher fines
Open space foot paths	4 ft	Compacted or uncompacted native material

- a. Construction should be carried out in a way that minimizes disturbance of the native vegetation or habitat. All disturbed areas outside of the expanse of the trail shall be returned to natural conditions through native reseeding, as specified in the City’s Standard in the NPDES standard General Notes for Construction Plan Sets, or other methods approved by the PRCS Department.
- b. The PRCS Department may require up to 2 feet on either side of the constructed trail width required within Table 6.8, be cleared, mowed, or otherwise kept free of vegetative growth.

6.3.C.II.d. Trail and Path Guarantee

All asphalt and trail surfaces shall be in compliance with City specifications and found free of any safety hazards or defects for twelve months following the date of final acceptance by the City. Replacement surfacing or City directed patching of trail sections from failure of materials or due to workmanship shall be with material of the same quality as that which is being replaced. Paved surfaces shall be in compliance with the Paving Guarantee requirements of this Chapter.

6.4 Park and Trail Appendices

6.4.A Irrigation Products and Execution

6.4.A.I. PRODUCTS

1. All materials shall be new and without flaws or defects of any type and shall be the best of their class and kind. All materials shall have a minimum guarantee of one year against material defects of defective workmanship.
2. All materials shall be the brands and types noted on the drawings or as specified herein or the approved equal.
3. The irrigation system will be designed around equipment manufactured by specific companies as a standard, typically Rainbird products unless otherwise specified. Approved equal equipment by other manufacturers may be used only with the approval of the City. Submission of irrigation sprinkler assembly for approval, as equal shall only be considered if submitted sprinkler assembly match the precipitation rate, gallons per minute and spacing of specified sprinkler assembly.
4. For City-built facilities, requests for approval of non-specified materials must be submitted to the City a minimum of seven (5) days prior to the opening of bids.
5. For facilities built as part of a subdivision by a Developer, the Park developer must indicate the use of non-specified materials prior to submission of conceptual site plan, or as part of the submission of construction plans through the Design Review Process.

6.4.A.I.a. Plastic Pipe and Fittings

1. Plastic Pipe: All mainline pipe, from the point of connection to the zone valve, shall be Schedule 40 PVC SDR 21; lateral line piping downstream of the zone valve which is $\frac{3}{4}$ " in diameter and greater shall be Schedule 40 PVC SDR 21 and shall conform to ASTM D 2241. Solvent shall meet ASTM L 2774 and D 2855 requirements. All PVC pipe shall be continuously marked with identification of the manufacturer, type, class, and size, and shall be free of holes, foreign material, blisters, wrinkles, dents, sunburn or other sun damage.
2. Location Tape: Irrigation line location tape shall be non-detectable water caution tape.
3. PVC Fittings: Fittings on PVC lines shall be Schedule 40 Molded PVC pipe. All galvanized nipples shall be Schedule 40 galvanized steel pipe.
4. Threaded Nipples: All threaded PVC nipples shall be Schedule 80 Machined PVC pipe. All galvanized nipples shall be Schedule 40 galvanized steel pipe.

6.4.A.I.b. Valves and Valve Boxes

1. Valves for use in electrically controlled automatic control systems shall be diaphragm actuated and hydraulically operated solenoid valves as specified on the Drawings, and wherever possible shall be pressure regulating valves.
2. Electric valves shall include true PVC union ball valve on upstream pipe and PVC union on downstream pipe.
3. The City prefers and may require the use of Rainbird PEB for 2 inch or smaller valve and Rainbird BPE for 3 inch and larger valve for both Master Valve and Automatic Valves.
4. Valve boxes shall be 17" x 30" in size, providing sufficient horizontal and vertical space to access all unions, valves, and related components. The box shall contain 6" of 1" washed gravel with a 2" clearance to the bottom of the valve assembly.
5. Note: A flow meter shall be installed before the Master Valve assembly and before the Backflow preventer. The flow meter shall be a Master Meter.

6.4.A.I.c. Sprinkler heads and Bubblers

1. Sprinklers heads and bubblers shall be as specified and installed as shown on the Drawings.

6.4.A.I.d. Controller

1. Controllers shall be as specified on the Drawings.
2. All irrigation systems shall utilize a controller capable of being connected to the City's Central Control System. The City will provide brand and model specifications to the Landscape Architect.
3. All controllers shall be installed in a locking, stainless steel controller enclosure or clock vault.

6.4.A.II. BACKFLOW PREVENTER

1. The backflow prevention device shall be as specified on the Drawings, and it shall be permitted and inspected by a Rio Rancho certified backflow tester to comply with the City of Rio Rancho Ordinance 51 "Water and Wastewater Rules and Rates. The backflow preventer shall also be installed as required by State Code".

2. The Department requires Febco 825Y for meters 2" or smaller, and Febco 880 for 2.5" and larger. Substitution with a pressure backflow preventer will depend on back flow preventer location, site grading and line placement.
3. The backflow preventer shall be located in a Hot Box insulated enclosure. Electric power shall be made available to the box for a heat source.

6.4.A.II.a. Cements, Cleaners / Primers and Joint Compounds

1. Cement shall be plastic pipe cement for use on all sizes and schedules of PVC pipe and fittings. Cement must be NSSF approved and meet ASTM D 2564 requirements.
2. Cleaner/primer shall be purple cleaner/primer.
3. All threaded connections between metal-to-metal, PVC to metal and PVC to PVC shall be made using Teflon tape. Pipe dope is prohibited. Thread sealing compound shall not be used on thread connections between sprinkler and nipple or bubbler and nipple.

6.4.A.II.b. Wiring

1. Wire for 120-volt wiring shall be solid copper (or stranded copper in larger wire sizes), underground feeder for direct burial and PVC insulated. Size of wire shall be #12 AWG.
2. Wire for 24-volt wiring shall be solid copper wire, PVC insulated, UL approved underground feeder wire for direct burial in ground. Common wires shall be #12, white, unless otherwise noted on Drawings. The control wires shall be #14 of any color other than white unless otherwise indicated on the Drawings.
3. Wire Splicing. Wire shall be laid in long runs with as few splices underground as possible. Where splices occur, they must be accessible in the valve box.
4. Wire Splicing Materials: All wire splices shall be made watertight using watertight connectors.

6.4.A.III. EXECUTION

This section includes installation specifications for all items installed as a part of the sprinkler irrigation system. Certain construction procedures may have been omitted from these specifications that are necessary for the proper installation of the system. In any case, all materials and equipment shall be installed in a neat and workmanlike manner according to manufacturer's recommendations and specifications, local and state codes, as shown on the Drawings and as specified herein.

6.4.A.III.a. Product Handling

The Park developer shall be responsible for correct procedures in loading, unloading, staking, transporting, and handling all materials to be used in the system. The Park developer shall avoid rough handling which could affect the useful life of equipment. Pipe shall be handled in accordance with the manufacturer's recommendations on loading, unloading and storage.

6.4.A.III.b. Excavation and Trenching

1. The Park developer shall stake out the location of each run of pipe and all sprinkler heads and valves prior to trenching. The City shall approve each run of trenches for the system before actual installation is started.

2. Excavation and trenching for pipelines shall be true and in line with the trench banks and as nearly vertical as practical. The width of the trenches shall not be greater than necessary to permit proper joining, tamping, backfilling, bedding or any other installation procedures that may be necessary. Trench widths shall also be wide enough so that there will be a minimum horizontal and vertical separation of 4" between pipes in the same trench.
3. Pipelines shall not be stacked, and every effort shall be made to ensure that pipelines will not cross, and verified by City review and acceptance of the Drawing. Additionally, zone design and lateral line layout should minimize the occurrence of multiple lines in the same trench.
4. In areas where trees are present, trench lines will be adjusted on the site to eliminate any damage to tree roots.
5. Trench depths shall be 24" deep and sufficient to provide the specified pipe cover as described elsewhere in these specifications or as noted on the Drawings. In rocky areas the trenching depth shall be 6" below normal trench depth to allow for pipe bedding as described in other portions of these specifications.
6. Depth of Bury: Minimum cover over mainline and lateral piping shall be filled and compacted so that when the trench area is compacted, it will be compacted to the same degree and level as the surrounding soil.

6.4.A.III.c. Pipe and Fitting Installation

1. Installation of plastic pipe and fittings shall be in accordance with the manufacturer's recommendations and procedures and as mentioned in the specifications. Manufacturer's recommended procedures for making solvent weld fitting shall be strictly adhered to. Only solvent cements, cleaners, and primers or lubricants recommended or supplied by the pipe manufacturer shall be used.
2. Caution shall be exercised by the Park developer in handling, loading, unloading and storing of PVC pipe and fittings. All PVC pipes shall be stored and transported in a vehicle with a bed long enough to allow the pipe to lie flat without subjecting it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged or in any other way found to be defective, either before or after lying shall be replaced with sound pipe without additional expense to the City.
3. Before installation, the inside of the pipe shall be cleaned of all dirt and foreign matter and shall be kept in a clean condition during and after laying of pipe. When work is not in progress, open ends of pipe and fitting shall be secured closed so that no trench water, earth or other foreign materials may enter the pipe or fitting until they have been connected to a valve or capped as directed on the irrigation system Drawings.
4. All PVC pipe and fittings shall be assembled pipe label facing up, and to permit the pipe or fittings to be jointed at the true parallel position of the fittings. Placement of pipe in curving trenches, which cause excessive bending and stress on pipe and fitting, will not be permitted. No excess piping or fittings shall be permitted in the installation of the system, which may increase pressure loss or potential blockage.
5. Before installing the pipe, all rubbish and large rocks shall be removed from the trenches. If the soil is extremely rocky, the trenches shall be bedded with dirt or sand as outlined in other portions of these specifications. The City shall approve material used for pipe bedding. The full length of each section of the pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate bells, joints, and couplings.

6. Pipe shall not be laid in water or when trench or weather conditions are unsuitable for the work. Any water, which may be encountered or may accumulate in the trenches shall be removed and trenches kept free and clear of water during the progress of the work. Pipe shall not be laid when the temperature is 32 F or below.
7. PVC pipe will expand or contract at the rate of 1" per 100' per 10 F change of temperature. Therefore, the pipe shall be installed in a manner so as to provide for expansion and contraction as recommended by the manufacturer.
8. The minimum horizontal and vertical clearance between lines in the same trench shall be 4". Pipelines shall not be stacked, and every effort shall be made to ensure that pipelines will not cross and verified by City review and acceptance of the Drawing. Additionally, zone design and lateral line layout should minimize the occurrence of multiple lines in the same trench.
9. After all sprinkler piping, risers, valves, etc., have been installed and partially backfilled as specified in other parts of these specifications, the control valve shall be opened, and a full head of water used to flush out the system. After the system is thoroughly flushed, risers shall be capped off and the system pressure tested in accordance with the testing section of these specifications. At the conclusion of the pressure test, the heads shall be installed and the backfill operation completed.

6.4.A.III.d. Solvent Welding Procedure

Pipes and fittings shall be welded as described below.

1. PVC plastic pipe shall be squarely cut utilizing a hacksaw or approved PVC pipe cutter.
2. Burrs left from cutting shall be wiped off with a clean dry cloth.
3. Utilizing a cleaner/primer, thoroughly clean the mating pipe end and the fitting socket with a clean, dry cloth.
4. Apply a uniform coat of primer to the outside of the pipe end with a non-synthetic brush or dauber.
5. In like manner, apply a light coat of primer to the inside of the fitting socket.
6. Apply a light coat of solvent cement to the pipe end and fitting socket, and quickly insert it into the fitting to the full depth of the fitting socket.
7. Rotate the pipe or fitting approximately $\frac{1}{4}$ turn to insure even distribution of the solvent cement.
8. Hold in position for approximately 30 seconds.
9. Wipe off any excess solvent cement that forms as a bead around the outer shoulder.
10. Care should be taken so as not to use an excess amount of solvent cement that could cause obstructions to form on the inside of the pipe joint.
11. Solvent weld joints shall be allowed to cure for at least 24 hours before pressure is applied to the system.

6.4.A.III.e. Backfilling

1. Upon completion of a particular section of the irrigation system, and after sufficient time has elapsed for the curing of solvent weld joints, partial backfilling can begin, leaving all joints, risers and connections exposed for visual inspection during the hydrostatic testing. Only upon successful testing and inspection for any one particular section, can that section then be completely backfilled.
2. In the event that the material from the excavation or trenching is found to be unsuitable for use in backfill by the City, it shall be removed from the site and properly disposed of by the Park developer and at his own expense. The Park developer shall then, at no additional cost to the City, arrange for, purchase, and furnish suitable backfill material consisting of earth, loam sandy clay, sand or other

approved materials free of large clods of earth or sharp stones and capable of attaining the same relative density of the surrounding ground.

3. In rocky areas, the trench depth shall be 6" below the 18" normal trench depth to allow for 6" of suitable backfill as padding for the pipe. In like manner there shall be at least 6" of padding on all sides of the pipe as padding against the rock wall of the trench.
4. All mainline piping shall have irrigation line location tape installed in the trench six (6") inches above the pipe.
5. Backfill shall be placed in horizontal layers not exceeding 6" in depth and shall be thoroughly tamped, or water compacted to near original density or so that no settling will result. Backfill shall be placed to the original ground level as previously described (Irrigation Systems 6.5.B.II.h.ii.49). If settlement of trenches occurs within one (1) year from date of completion, it shall be the Park developer's responsibility to refill trenches and re-seed or sod the repaired areas.

6.4.A.III.f. Sprinkler Head Installation

1. Sprinkler heads shall be of the type and make specified and shall be installed providing head-to-head coverage as will be shown on the Drawings. Sprinkler heads shall be installed with a 4" space between the edge of the sprinkler head and curbs, walls, driveways, buildings walls, etc. Heads shall be installed in the vertical position and backfilled compacted to near original density.
2. No popup sprinklers shall be located in turf areas larger than 1,00 square feet.
3. Sprinkler head spacing shall not exceed the spacing shown and shall be in the location and configuration as shown on the Drawings. Sprinkler heads shall be spaced to achieve uniform coverage.
4. After all piping and risers are in place and connected and before installation of the sprinkler heads, all control valves for a given section shall be fully opened and a full head of water shall be used to flush out the system. If water pressure without the heads installed is not sufficient to provide adequate water flow at end risers, the Park developer shall cap off enough heads closest to the water source to provide adequate flushing of the end riser assemblies.
5. Teflon tape shall be used on all sprinkler head connections.

6.4.A.III.g. Controller Installation

1. The Controller location shall be indicated on the Drawings. The Park developer shall familiarize himself with the requirements of making the power connections at the locations noted (120-volt supply to the Controller). 120-volt power shall be supplied to the Controller location by a licensed electrician. Park developer shall include this in the lump sum price for the sprinkler irrigation system.
2. The Controller shall be mounted and wired according to the manufacturer's recommended procedures and as specified herein and on the Drawings. The controller must be GFI protected.
3. For Controllers installed inside of vaults or other enclosures, the Park developer shall provide and install on the Controller, an electrical pigtail outlet that must be GFI protected.
4. When Controllers are mounted outside of any building, vault or enclosure, the Park developer shall direct wire the 120-volt power to the Controller.
5. Remote control valves shall be connected to Controller in the numerical sequences as shown on the Drawings or as directed by the City.
6. Valve box and spacing shall be large enough for maintenance to be performed.

6.4.A.III.h. Automatic Control Valve Installation

1. All automatic control valves shall be of the type and size as indicated on the Drawings. Installation shall be according to these specifications, the Drawings and the manufacturer's recommendations.
2. The valve boxes shall be of the size and type as shown in the detail drawings.
3. Valve wire splices shall be waterproofed using waterproof connectors, and the Park developer shall provide a 36" wire expansion coil to facilitate raising splices to ground level without cutting wires.
4. All connections for electric valves shall be made using Teflon tape.
5. Flow Meter shall be installed before the Master Valve assembly and after the backflow preventer.

6.4.A.III.i. 24 Volt Control Valve Wiring

1. All wire installation procedures as described herein shall be checked to conform to local codes.
2. The Park developer shall install the 24-volt control valve wiring in the same trench as the irrigation mainline. Only when it is not possible for the wires to be installed in the mainline trench, they shall be installed in the later pipe trench. All wires shall be laid loose in the trench and taped together at 10'- 0" intervals. When trenches used for piping are not appropriate for routing wire, Park developer shall install in a separate trench, 18" deep.
3. Wire splices, other than at valve box locations, shall be kept to a minimum and if needed shall be made only at common splice points and placed in a wire splice box as shown in the detail drawings. The location of these wire splice boxes shall be made waterproof using waterproof connectors.
4. At control wire splices, the Park developer shall provide a 36" wire expansion coil to facilitate raising splices to ground level without cutting wires.
5. All continual wire shall be one color and in no case shall wires of different colors be spliced together.
6. All 24-volt wiring shall be installed in PVC conduit when inside a building. All 24-volt wiring installed on exterior building walls shall be installed in metal conduit.

6.4.A.III.j. 120 Volt Controller Wiring

1. The Park developer shall familiarize himself with the work required to complete this portion of the installation. All 120-volt wiring shall be installed in accordance with local electrical codes.
2. 120-volt power shall be supplied to the Controller location by a licensed electrician.

6.4.A.III.k. Testing

1. Upon completion of the irrigation system's main line, the entire mainline shall be tested for a one-hour period at 100 psi, unless otherwise noted. Prior to testing, the mainline shall be partially backfilled, leaving all joints and connections exposed for visual inspection. All dirt shall be flushed from the system and the line filled with water to remove air. The mainline shall be brought to static pressure. A pressure gauge and temporary valve shall be installed at the end of the mainline to permit air pressure to be applied to the main. A pressure of 100 psi must be retained for a one-hour period. Any leaks resulting in the one-hour pressure test shall be repaired and the system retested until the system passes the test.
2. Upon completion of the lateral piping sections, each lateral system shall be pressure tested for one hour at 100 psi. On systems using flex risers, or swing joints, the lateral system shall be tested prior to installation of the flex risers or swing joints. Prior to testing, the lateral lines shall be partially backfilled leaving all joints and connections exposed for visual inspection. All air and dirt shall be

flushed from the system and all open fittings shall be capped. The testing procedure shall be the same as used for the main line. If after one hour no visual leakage has occurred and the 100-psi pressure has been retained, the heads shall be installed, and the backfill operation completed. Any leaks resulting from the hydrostatic test shall be repaired and the system retested until the system passes the test.

6.4.A.III.l. Adjusting of System

After completion of testing and installation, the Park developer shall adjust all valves for the proper operating pressure and adjust all sprinklers and bubblers for uniform coverage and even flow. Park developer shall wire the Controller (valve/station) as directed by the City, and the wires shall be numbered for each of the zones. The valve number will be indicated on the Controller panel for each station. Park developer will program Controller to provide optimum sprinkler system performance.

6.4.A.III.m. Irrigation Audit

If the landscape being watered by the irrigation system has a total turf area of one or more acres, the Park developer must have a Landscape Irrigation Audit performed in order to comply with the City of Rio Rancho, Water Conservation Ordinance 52. The audit of the system must be performed prior to the installation of turf or seed.

6.4.A.III.n. Clean up

The Park developer shall continuously keep a neat and orderly area in which he is installing the system. Disposal of rubbish and waste material resulting from the installation shall be continual. Upon completion of the system, the Park developer shall remove from the City's property at his own expense, all temporary structures, rubbish, waste material, tools and equipment resulting from or used in the installation of the system.

6.4.A.III.o. Protection of Existing Utilities

The Park developer shall be responsible for locating all cables, conduits, piping, and any other utilities or structures that may be encountered either above or below ground. All necessary precautions must be taken by the Park developer to prevent any damage to these existing utilities and improvements. In the event that such damage should occur from his operations, the Park developer shall repair or replace damaged utilities to their original condition at no additional expense to the City.

6.4.A.III.p. Rock

If the Park developer encounters rock or other unfavorable trenching conditions, no additional compensation will be paid. When material from the excavation or trenching is unsuitable for use as backfill, additional backfill material suitable for this purpose shall be brought in at the expenses of the Park developer. It shall also be the Park developer's responsibility to remove and dispose of all unsuitable materials removed from the trench that cannot be used in the backfill operation.

6.4.A.III.q. Final Acceptance

1. When the Park developer is satisfied that the system is operating properly, that it is balanced, adjusted, has passed an irrigation audit, and that all work and clean-up is completed, he shall notify the City's Representative by phone, a minimum of 48 hours in advance, for an inspection.
2. At that time the Park developer shall demonstrate the operation of each system in its entirety. In judging the work, no allowance for deviation from the original Drawings and Specifications will be made unless prior approval has been obtained.
3. Any inconsistency to the Specifications or the Drawings shall be noted by the City and a written copy of required corrections shall be given to the Park developer. Any work deemed not acceptable shall be re-worked to the complete satisfaction of the City.
4. When the completed work and the "RECORD" drawings, certification of backflow inspection, keys and maintenance manual have been reviewed and approved by the City, the irrigation system will be considered complete and landscape activities may begin.

6.4.A.III.r. Operational Instruction

1. After the system has been tested and accepted as complete, the Park developer shall instruct the City or the City's representative in the operation and maintenance of the system.
2. The Park developer shall provide the City with two (2) keys for the following:
 - a. Manual Straight Valves.
 - b. Manual Drain Valves.
 - c. Valve Boxes.
 - d. Valve Markers.
 - e. Controllers.
 - f. Hot Box.
 - g. Any locking assembly in need of key access.
3. The Park developer shall provide the City with two copies of a Maintenance Manual bound in a three-ring binder. The maintenance manual shall include copies of the approval Submittals, Controller operations manuals and manufacturers warranties on all irrigation products.

6.4.A.III.s. Guarantee

1. For a period of one (1) year from final acceptance of the facility, the Park developer will promptly furnish and install any damaged or inoperative materials or systems that are found to be damaged, defective, or inoperable due to manufacture defects, improper installation or workmanship, but not regular wear or operation of the system or facility. Damage due to irrigation system line breaks shall be repaired and brought to original condition by the Park developer at no expense to the City.
2. In the fall, at the City's request, the Park developer will drain the system, and otherwise prepare the system for winter. In the spring, at the City's request, the Park developer will reactivate the system, repair any defects or damage and adjust the system. As these services are performed, the Park developer will inform and instruct the City.
3. For a period of one (1) year from final acceptance of the facility, the Park developer shall repair any settlement of trenches by one of the following methods as directed by the City.
 - a. Bring to grade by top-dressing (raking topsoil into grass).
 - b. Bring to grade with amended topsoil and seed.

- c. Remove existing sod, fill depression with topsoil, and replace with new sod to match existing sod.
- d. Repair by any of the above methods must result in a smooth, level area. Maintenance of repaired areas shall be the responsibility of the City.