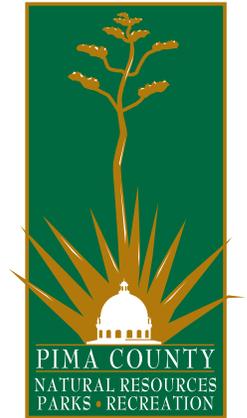


Pima County Natural Resources, Parks and Recreation Department Recreation Area Design Manual



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Recreation Area Design Manual

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1. Introduction

The Pima County Natural Resources, Parks and Recreation Department's Recreation Area Design Manual was created to assist the development community in meeting the requirements established by Pima County Ordinance 2003-16, the Pima County *Recreation Areas in Subdivisions* Ordinance, and Chapter 18.69 of the of the Pima County Code. The Recreation Area Design Manual provides the information necessary for developers and their consultants to determine the combination of developed recreation area and/or fees suitable for their project, and to produce a Recreation Area Plan (RAP) that meets demographic profile of their development and satisfies the requirements of the Ordinance.

Summary of Important Requirements. Project principals, project managers, planners, architects, designers, engineers, landscape architects and other related professionals are reminded to be aware of the following important requirements of the Recreation Areas in Subdivisions Ordinance as they proceed with their projects:

- Every residential subdivision development project must prepare a Recreation Area Plan (RAP). Please see Section 3 (page 9) for a description of the RAP and the RAP process. Exceptions to the requirement to design a recreation area for a given project are allowed for subdivision projects of 65 units or less, which may elect to pay an in-lieu fee of \$1,500 per unit, or subdivisions of any size located within .75 mile of an existing county park with sufficient capacity (with "sufficient capacity" to be determined by Pima County) to accommodate the residents of the subdivision, which may also elect to pay the full in-lieu fee. Other exceptions are explained in the Ordinance in 18.69(C), and in this manual.
- Project planners are required to meet with the planning staff of the Pima County Natural Resources, Parks and Recreation Department prior to the preparation of the RAP to ensure that the requirements of the ordinance are properly understood.
- If a design for a recreation area is prepared, the design shall be included in the tentative plat or development plan submittal package.
- The approval of the RAP by Pima County Natural Resources, Parks and Recreation Department planning staff is required before the project's tentative plat can be approved.
- Developed recreation space shall be provided in accordance with the Residential Recreation Area Matrix set forth in the ordinance (unless the project is eligible for the full in-lieu fee option). A description of the Matrix can be found in Section 2 of this manual (page 6). The minimum amount of developed recreation space required to be provided in residential development projects of 66 units or more is 436 square feet per residential unit. Golf courses do not count against the recreation area requirement. Recommended features for recreation areas of various sizes can be found in Sections 5 and 6 of the Design Manual.
- All fees shall be paid to the Pima County Natural Resources, Parks and Recreation Department prior to final plat approval, or as otherwise set forth in the ordinance. The amount of the per-unit fee to be paid must be clearly noted on the plat.
- Recreation Areas intended to be dedicated to Pima County after they are constructed must meet the requirements set forth in Section 7 of this manual, which mandates that construction documents for the subject recreation area shall be submitted for Pima County Natural Resources, Parks and Recreation Department staff review at the 30%, 60%, 90%, and 100% plans stages,

and that a final set of as-built plans be submitted to Pima County Natural Resources, Parks and Recreation Department after the recreation area is constructed. The as-builts are an element of the final assurances for all projects to be transferred to Pima County.

- Segments of Eastern Pima County Trail System Master Plan-listed trails that cross the subject project site or are located adjacent to the site must be constructed as a part of the subject project, and should be included in an appropriate manner on the project's plat and described in the project's RAP. The same requirement applies to any segment of the Pima County Regional Greenway System (River Parks, Greenways, etc.). Construction of trails and/or linear park or greenway segments may be credited against the ordinance's standard requirements.
- All recreation area improvements must be complete and fully functional by the subdivision project's 75% permit stage.

2. The Pima County Recreation Areas in Subdivisions Ordinance

The Pima County Recreation Areas in Subdivisions Ordinance (Pima County Ordinance #2003-16) was created to help ensure that the recreation needs of Pima County residents are met as the community continues to grow. When parks and recreation facilities are not constructed as new neighborhoods are established, residents of new neighborhoods are forced to wait for a considerable period of time—up to five years or more—until Pima County can pass a bond program to provide the funding needed to develop or enhance parks and recreation facilities in their area. The relative infrequency of such bond elections means that new recreational demand will remain unsatisfied for many years to come, forcing children to play in the streets and families to drive considerable distances to already overburdened existing parks. Safety, traffic congestion, air quality, public health and neighborhood social interaction all suffer when recreation facilities are inadequate to meet community needs. Creating facilities as the community develops will save money, because the cost of land and facility development will increase as time passes. In addition, the possibility that land will not be available in some areas for parks and recreation facilities will be avoided.

Key Elements of the Ordinance:

The Residential Recreation Area Matrix

The principal element of the Recreation Areas in Subdivisions Ordinance is the *Residential Recreation Area Matrix*. The Matrix is a flexible tool that provides developers with an opportunity to determine the proper combination of developed park space and fees for their project. The minimum amount of developed park space that must be provided is 436 square feet per lot. Please be aware that the Matrix's square footage requirement relates to *developed* park space, not simply raw land. The minimum features for recreation areas of various sizes can be found in Sections 5 and 6 of the Design Manual.

Table C.1 Residential Recreation Area Matrix

Acres/Money Ratio	Recreation Acreage per 1,000 people	Square Feet Lot	% Recreation Area in Acreage	In-Lieu Fee per Lot in Dollars	% Recreation Area in Dollars
100/0%	8	871	100%	\$0	0%
	7.2	784	90%	\$120.00	10%
	6.4	697	80%	\$240.00	20%
	5.6	610	70%	\$360.00	30%
	4.8	523	60%	\$480.00	40%
50/50%	4	436	50%	\$600.00	50%
	3.2	348	40%	\$720.00	60%
	2.4	261	30%	\$840.00	70%
	1.6	174	20%	\$960.00	80%
	0.8	87	10%	\$1080.00	90%
1%	0.08	8.7	1%	\$1188.00	99%

Important Provisions Related to the Matrix

1. The minimum amount of developed recreation space that must be provided by a given subdivision project is 436 square feet per residential unit. Subdivisions of 65 units or less have the option of paying the full in-lieu fee amount of \$1,500 per unit instead of providing developed recreation space *and* paying a fractional fee.
2. Subdivisions larger than 65 lots may elect to utilize the full in-lieu fee option if the subject project is within approximately .75 mile of an existing recreation area that has room to accommodate additional demand and has undeveloped capacity, or can be expanded through the acquisition and improvement of adjacent land. Determination as to whether an existing recreation area within .75 mile of a proposed subdivision has sufficient capacity to accommodate the residents of the new project is to be made by Natural Resources, Parks and Recreation Department.
3. Two additional options are available in meeting the requirements of the Ordinance:
 - Subdividers may elect to provide a minimum of 10 acres of land within the subdivision’s “region” as defined in the Ordinance, and improve the property consistent with the requirements set forth in the Recreation Area Design Manual.
 - Subdividers may elect to dedicate a parcel of land to Pima County that is in the subdivision’s “region” as defined in the Ordinance, is adjacent to a district or regional park, and is of a value equal to or greater than the value of the standard requirements (park development and/or fee).
4. Fees shall be paid to the Pima County Natural Resources, Parks and Recreation Department prior to final plat approval, or as otherwise provided in the Ordinance.

Calculating Fees Based on the Matrix

To calculate fees based on the standard expressed in the Matrix, divide the square footage of developed recreation space to be provided per residential unit by 871. This calculation will give you a percent of 100. Multiply the remaining percentage by \$1,200 to determine the in-lieu fee. For example:

- 436 square feet of developed park space to be provided per unit, divided by 871 = .50 or 50%.
- 50% to be provided in developed park space, remaining 50% to be paid in cash.
- 50% of the \$1,200 base fee = \$600. Fee to be paid is \$600 per lot.
- Mutiply \$600 by the total number of lots to determine the total in-lieu fee.

NOTE: If the subject project is 65 units or less and the developer elects to pay the full in-lieu fee and “cash out” of the requirements and not utilize the matrix, then the fee to be paid is \$1,500.

Use of Fees Generated by the Recreation Area in Subdivisions Ordinance & Region System

Funding generated through the provision of fees will be used for recreation area land acquisition, recreation area development, the planning and design of the county’s park and recreation system and specific recreation areas, and related expenses. Funding will be expended in the region in which the subject residential project is located. For purposes of the ordinance, the Pima County area has been divided into five regions. The regions are identified as follows:

- Far West Region (Ajo area): west of Range 6E
- Northeast Region: east of Range 13E and north of Township 14S
- Southeast Region: east of Range 13E and south of Township 13S
- Southwest Region: west of Range 14E and to Range 5E, and south of T13S
- Northwest Region: west of Range 14E to Range 5E and north of T14S

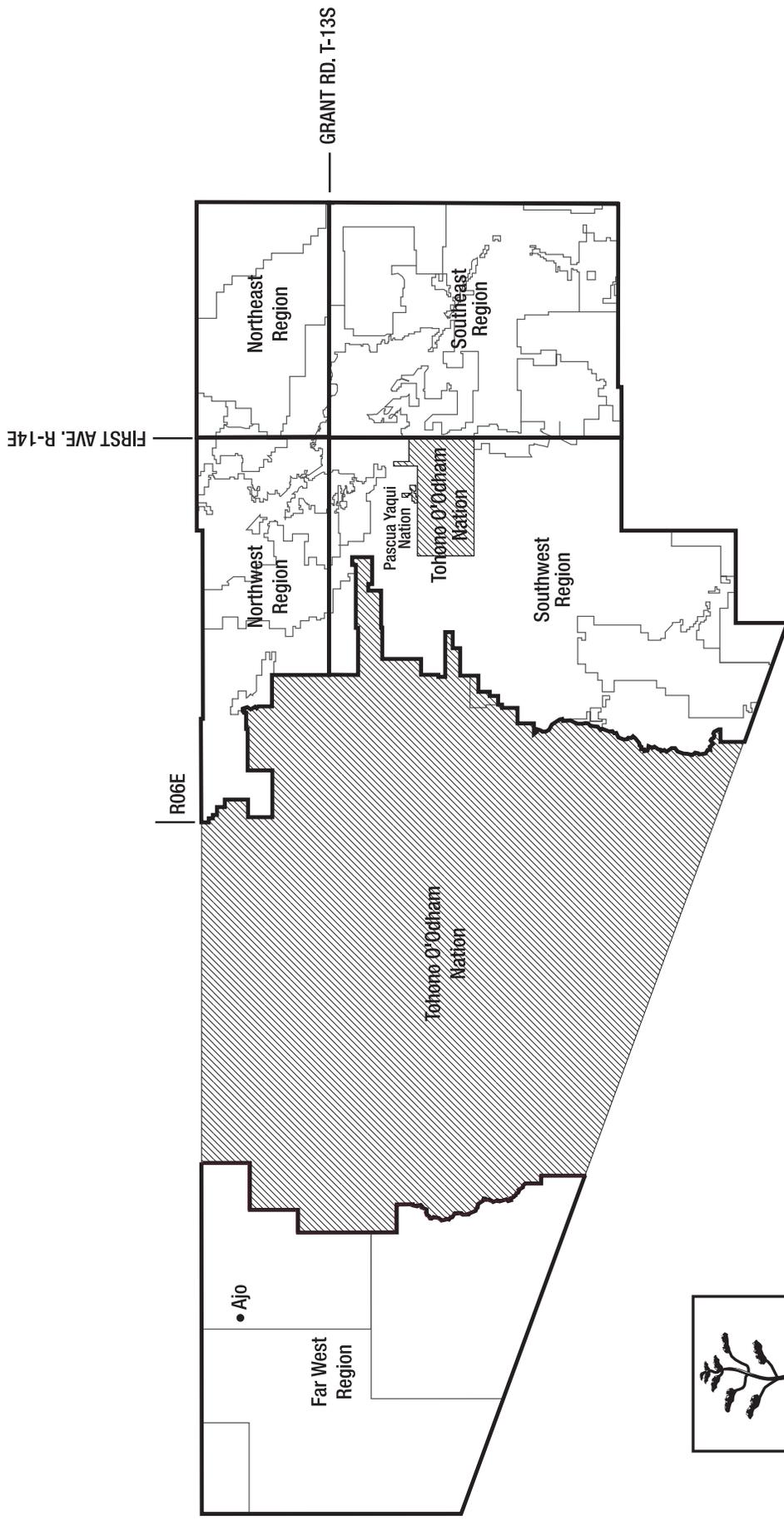
Each of the regions described above extends to the county boundaries. A map depicting these regions appears on page 8.

Apartment Projects

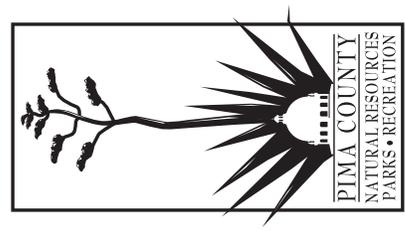
Residential apartment projects shall create recreation areas and provide developed recreational facilities at a level that meets or exceeds 460 square feet per unit, and must include recreational facilities and structures. Such recreation facilities and structures may include turfed areas, swimming pools, path systems, ramadas, recreation centers, exercise equipment, tot lots, and more. Consistent with the requirements of the ordinance, the developer shall depict the proposed recreational facilities on the project’s Recreation Area Plan (RAP). The square footage requirement for apartment projects is based on a multiplier of 1.62 people per residential unit. Single family residences typically house approximately 2.5 people per unit.

Commercial Developments

Per the Ordinance, commercial projects that encompass or abut trail corridors listed on the Eastern Pima County Trail System Master Plan (Pima County Ordinance #1996-75), are included in the Pima Regional Greenways Plan, or are identified as important and/or desirable linkages during the development review process by the staff of the Pima County Natural Resources, Parks and Recreation Department,



RECREATION REGIONS MAP



shall provide the corridor to accommodate the trail *and* construct the trail to the specifications set forth in the Recreation Area Design Manual. Example #1: The developer of a strip mall to be constructed along the bank of the Rillito River must provide a 100' corridor to accommodate the River Park, and construct the segment consistent with the River Park standards set forth in the Recreation Area Design Manual. Example #2: The developer of a shopping center along Houghton Road shall provide a 50' corridor along the front of the project to accommodate the Houghton Greenway, and shall construct the segment of the greenway that corresponds with the subject project consistent with the Divided Urban Pathway standard established by the Recreation Area Design Manual.

3. The Recreation Area Plan (RAP)

The purpose of the design requirement of the Recreation Area Plan (RAP) is to describe in sufficient detail the recreation facilities and/or trails to be constructed as requirements of the proposed residential project. The RAP is a separate stand-alone planning document, and will remain on file at the Pima County Natural Resources, Parks and Recreation Department. **NOTE:** Subdividers with projects of 65 units or less that elect to pay the \$1,500 per unit fee are not required to prepare a Recreation Area Plan.

To comply with the Recreation Areas in Subdivisions Ordinance, subdividers are encouraged to participate in a RAP pre-submission meeting with Pima County Natural Resources, Parks and Recreation Department planning staff to review requirements and ensure that the applicant and the applicant's representatives are heading in the right direction. Staff will endeavor to schedule pre-submission meetings as expeditiously as possible to keep development projects moving forward.

The Recreation Area Plan (RAP) Submittal and Review Process

1. Applicant and/or the applicant's representatives meet with Pima County Natural Resources, Parks and Recreation Department planning staff to discuss the proposed residential development project. Staff explains the applicant's options in accordance with the Residential Recreation Area Matrix (or the in-lieu fee alternative) and the requirements set forth in the Zoning Code, including the specific elements to be included in the RAP.
2. Applicant prepares RAP consistent with the Code and Recreation Area Design Manual.
3. Applicant submits the RAP to staff along with the project's Tentative Plat.
4. Staff reviews and provides comments on the RAP and Tentative Plat. Any necessary changes are made by the applicant.
5. Staff approves RAP prior to approving the Tentative Plat.

NOTE: The RAP *must* be approved by Pima County Natural Resources, Parks and Recreation Department planning staff before the tentative plat for a project can be approved.

Elements to be included in the RAP

The RAP may be produced in standard 8.5" by 11" format, and should contain the following information:

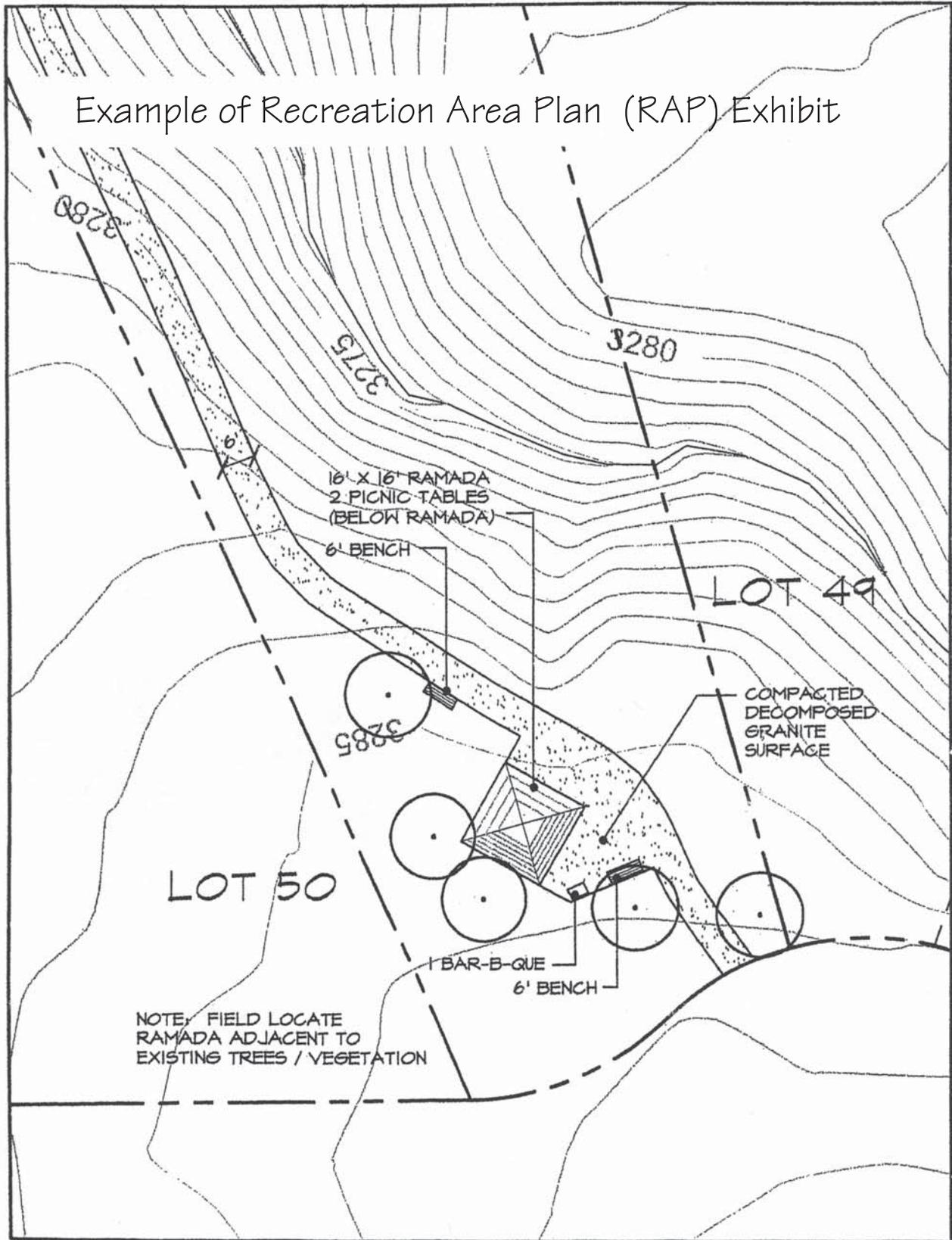
1. The total acreage of the subdivision and the total number of housing units.
2. A simple map that depicts the location of the subdivision (within the regional/metropolitan context). Identify any public parks within a 5-mile radius of the proposed subdivision (this information can be found in any metropolitan street atlas).

3. A concept drawing of the proposed subdivision.
4. A demographic profile of the proposed subdivision. Describe in a short paragraph or less the target market for the subdivision. What ages of residents is the project intended to serve? This information will help the applicant and Pima County determine whether the recreation features proposed actually fit the project (i.e. age-appropriate infrastructure, recreation features, equipment, pathways, etc.).
5. The size of the recreation area that the Code requires to be provided, the per-unit fee that will be paid, and the features to be provided for that size of recreation area (for recreation area types and a list of recommended features, please see Section 5 of this Manual, or the table in Section 6). Please be aware that the in-lieu fees to be paid as a part of the RAP must be set forth on the plat itself as a separate note. Options regarding the provision of recreational space and fees can be found in Section 2 above, within the description of the Residential Recreation Area Matrix. The required recreational space may be provided in several units or nodes at the discretion of the Natural Resources, Parks and Recreation Department, as long as the individual units remain sufficiently sized to be functional. Please note the following requirements set forth in the Ordinance:
 - Shallow retention basins *may* be applied to the recreation area requirements if developed for recreation purposes. The use of basins as recreation elements shall comply with the standards established by the Pima County Flood Control District. Use of basins for recreation purposes shall be subject to the approval of the Natural Resources, Parks and Recreation Department and Flood Control District.
 - Recreation areas should be designed so that all subdivision residents can have use of and access to the recreation area.
 - Recreation areas shall avoid known archeological and historical sites.
 - Recreation area improvements should be constructed in an environmentally sensitive manner, minimizing the disturbance of the site's natural vegetation, and mitigating effects on adjacent upland areas, washes, wildlife corridors, and natural open space.
 - One paved, on-site parking space shall be provided for every 20 dwelling units or portion thereof, unless sufficient, unobtrusive on-street parking is available adjacent to the recreation area.
 - Privately-owned recreation areas, recreation features and parking improvements shall be completed in accordance with the RAP and fully functional by the time 75% of the building permits have been issued.
6. The location of the recreation area(s) within the proposed subdivision, along with any trails that pass through or are located adjacent to the project. Also include the dimensions of the recreation area(s), the size of the recreation area(s), and how the size of the recreation area was calculated (i.e. show us your math).
7. Clearly identify the entity that will be responsible for maintenance of the recreation area and its facilities. Privately-owned recreation areas and improvements shall be maintained by the private property owners of the subdivision. **IMPORTANT NOTE:** Recreation areas that are intended to be transferred to the ownership of Pima County upon completion must meet the standards of the Pima County Natural Resources, Parks and Recreation Department (please see Section 7 of this manual), and construction drawings must be submitted to PCNRPR staff for review at the 30%, 60%, 90% and 100% plans stages (see specific requirements set forth in Section 7). Parks not

planned for transfer to Pima County must be managed and maintained by the project's private property owners.

8. Graphic depiction of the recreation area concept drawing (plan view) of all recreation improvements to be provided as a part of the recreation area(s). (For an example, please see page 12.) This will allow staff to determine if the minimum requirements for the type of recreation area being constructed are being met. Standard details of a variety of recreation features and recreation-related site furnishings and infrastructure can be found in the Appendix of this Design Manual.
9. Indicate on the park concept drawing where the access points and parking will occur.
10. Indicate any Eastern Pima County Trail System Master Plan-listed trails that cross or are located adjacent to the project site, and how these trails will be constructed and/or how linkages will occur. Please note that the subject project's recreation area should link with any trails that cross the site or are located in proximity to the site.
11. The topography of the subject park/recreation area site. (For an example, please see page 12.)

4. RECREATION AREA PLAN EXHIBIT



RECREATION NODE 'B'
not to scale

5. Recreation Area Definitions and Minimum Feature Requirements

The following section describes the recreation areas commonly found in Pima County, and the minimum improvements that generally must be provided for each size of recreation area/park to meet the recreational needs of the project's residents. A table summarizing the features for each size recreation area can be found in Section 6.

Neighborhood/School Parks

A neighborhood park is 10.0 acres or less in size, and may occur in conjunction with a school site (NOTE: the park/recreation area is land exclusive of, and in addition to, the school site). Examples of neighborhood parks are cited below in each size category. Please see the Appendix for layout examples of existing Pima County neighborhood parks.

Neighborhood Parks Up to 1 Acre in Size

A neighborhood park of approximately one acre in size is often described as a "pocket park." Examples of neighborhood parks in this size category include Pima County's Catalina Neighborhood Park and Branding Iron Park, and the City of South Tucson's Yaqui Park.

Minimum features for parks in this size category include:

- Infrastructure:
 - Water
 - Electricity
- Linkages to adjacent or nearby trails, linear parks, greenways, etc. (if applicable)
- Signs.
- Fencing (as needed).
- Landscaping (trees and other plant materials, preferably native; see Section 10 in manual for additional information).
- Irrigation.
- Turf area: 30% of total park area (exclusive of parking spaces, roads, footprints of restrooms and other structures and other areas committed to non-recreational purposes). Alternate functional recreation area surfacing, including recreation-grade artificial turf, etc., may be acceptable alternatives.
- Vehicular barriers (as needed).
- Parking: 1 space per every 20 units, as per the ordinance.
- Trash receptacles – a minimum of 1 trash receptacle necessary.
- Bicycle Racks: 1 bicycle rack (4 bike capacity) necessary.
- Park benches: 1 bench necessary; 2 benches preferable.

Recommended/suggested additional features:

- Security lighting.
- Public art.
- Water fountain.

Neighborhood Parks 1.01 - 5 acres in Size

Examples of neighborhood parks in this size category include Pima County's Meadowbrook Park, Casas Adobes Park, Richardson Park, and Ted Walker Park.

Minimum features for parks in this size category include:

- Infrastructure
 - Water
 - Electricity
- Linkages to adjacent or nearby trails, linear parks, greenways, etc. (if applicable).
- Signs.
- Fencing (as needed).
- Landscaping (trees and other plant materials, preferably native; see Section 10 in manual for additional information).
- Irrigation.
- Vehicular barriers (as needed)
- Parking: one space per every 20 units, as per the ordinance.
- Trash receptacles: 1 - 3 acres: 2 receptacles; 3 - 5 acres: 2 to 4 receptacles.
- Bicycle racks: 1 - 3 acres: 1 rack (4 bike capacity); 3 - 5 acres: 2 racks (4 bike cap. ea.).
- Water fountain: recommended in 1 to 3 ac. recreation area; 1 fountain necessary in 3.0 – 5.0 acre recreation area.
- Restroom: one unisex restroom is recommended for recreation areas 3.0 - 5.0 acres in size.
- Turf area: 30% of total park area (exclusive of parking spaces, roads, footprints of restrooms and other structures and other areas committed to non-recreational purposes). Alternate functional recreation area surfacing, including recreation-grade artificial turf, etc., may be acceptable alternatives.
- Park benches – HD outdoor park type.
 - 1.0 – 3.0 acres: 2 benches.
 - 3.0 – 5.0 acres: 4 benches.
- Shade structure(s) on concrete pad (choice of vendor and style), 20' x 28'.
 - 1.0 – 3.0 acres: 1 structure, minimum.
 - 3.0 – 5.0 acres: 1 structure, minimum.

- Picnic tables with benches:
 - 1.0 – 3.0 acres: 2 tables.
 - 3.0 – 5.0 acres: 4 tables.
- Grills:
 - 1.0 – 3.0 acres: 2 grills.
 - 3.0 – 5.0 acres: 3 grills.
- Basketball court:
 - 1.0 – 3.0 acres: recommended only.
 - 3.0 – 5.0 acres: one half-court basketball court (post-tension slab recommended).
- Playground or fitness equipment:
 - 1.0 – 3.0 acres: 3 pieces of play or fitness equipment (swings, slide, teetertotter, par course, etc.).
 - 3.0 – 5.0 acres: one multi-use play structure with five components, or par course with five stations.

Recommended/suggested additional features:

- Security lighting.
- Public art.
- Water fountain: recommended for recreation areas in the 1.0 to 3.0 size category.
- Telephone: recommended in the 3-5 acre recreation area category.
- Perimeter walking/jogging path system: rec. for all recreation areas 1.0 to 5.0 acres in size.
- Athletic field (baseball/softball): recommended in the 3.0 to 5.0 size category.

Neighborhood Parks From 5.01 – 10 acres In Size

Examples of neighborhood parks in this size category include Children’s Memorial Park, Wildwood Park, Denny Dunn Park, Los Ninos Park, Cardinal Park, and Mission Ridge Park.

Minimum features for parks in this size category include:

- Infrastructure:
 - Water
 - Power
 - Sewer
- Water fountains:
 - 5.0 – 7.5 acres: 1 fountain.
 - 7.5 – 10.0 acres: 2 fountains.

- Unisex restroom
 - 5.0 – 7.5 acres: 1 unisex restroom recommended.
 - 7.5 – 10.0 acres: 2 unisex restrooms recommended.
- Linkages to adjacent or nearby trails, linear parks, greenways, etc.: (if applicable).
- Signs.
- Fencing (as needed).
- Landscaping (trees and other plant materials, preferably native; see Section 10 in manual for additional information).
- Irrigation.
- Turf area: 30% of total park area for all recreation areas in the 5.0 to 10 acre size range (exclusive of parking spaces, roads, footprints of restrooms and other structures and other areas committed to non-recreational purposes). Alternate functional recreation area surfacing, including recreation-grade artificial turf, etc., may be acceptable alternatives.
- Vehicular barriers (as needed).
- Parking: one space per every 20 units, as per the ordinance.
- Trash receptacles:
 - 5.0 – 7.5 acres: 4 receptacles.
 - 7.5 – 10.0 acres: 6 receptacles.
- Bicycle racks:
 - 5.0 – 7.5 acres: 4 racks (4- bike capacity).
 - 7.5 – 10.0 acres: 6 (4 bike capacity).
- Park benches:
 - 5.0 – 7.5 acres: 6 benches.
 - 7.5 – 10.0 acres: 8 benches.
- Security lighting: mandatory for all recreation areas in 5.0 to 10.0 acres in size.
- Shade structure(s) on concrete pad (choice of vendor and style), 20' x 28'.
 - 5.0 – 7.5 acres: 2 structures, minimum.
 - 7.5 – 10.0 acres: 2 structure, minimum.
- Picnic tables with benches:
 - 5.0 – 7.5 acres: 6 picnic tables.
 - 7.5 – 10.0 acres: 8 picnic tables.
- Grills:
 - 5.0 – 7.5 acres: 4 grills.
 - 7.5 – 10.0 acres: 6 grills.

- Basketball court:
 - 5.0 – 7.5 acres: 1 full-court necessary; + 1 half-court recommended.
 - 7.5 – 10.0 acres: 1 full-court necessary; + 1 half-court recommended.
- Playground and/or fitness equipment:
 - 5.0 – 7.5 acres: 2 individual components plus one 5-pc multi-use play structure.
 - 7.5 – 10.0 acres: 2 individual components plus two 5-pc multi-use play structures.
- Perimeter walking/jogging path system:
 - 5.0 – 7.5 acres: path system necessary.
 - 7.5 – 10.0 acres: path system necessary.
- Athletic fields:
 - 5.0 – 7.5 acres: provide either 1 baseball/softball field or 1 soccer/football field.
 - 7.5 – 10.0 acres: provide 1 baseball/softball field *and* 1 soccer/football field.

Recommended/suggested additional features:

- Security lighting.
- Public art.
- Telephone (5.0 – 7.5 acre recreation areas).
- Additional basketball court (full or half-court).

Community Parks

A community park ranges from 10.01 to 40 acres in size. Examples of community parks include Mehl Foothills Park, McDonald Park, and Three Points Park.

Minimum features for parks in this size category include:

- Infrastructure:
 - Water
 - Electricity
 - Telephone
 - Sewer
- Water fountains
 - 10 - 20 acres: 3 fountains.
 - 20 - 40 acres: 5 fountains.

- Restrooms:
 - 10.01 – 20.0 acres: 2 restroom buildings, each with one men’s facility (one toilet, one urinal and sink) and one women’s facility (two toilets and sink).
 - 20.01 – 40.0 acres: 3 restroom buildings, each with one men’s facility (one toilet, one urinal and sink) and one women’s facility (two toilets and sink).
- Linkages to adjacent or nearby trails, linear parks, greenways, etc.: (if applicable).
- Signs.
- Fencing (as needed).
- Landscaping (trees and other plant materials, preferably native; see Section 10 in manual for additional information).
- Irrigation.
- Turf area: 20% of total park area for all recreation areas in the 10.0 to 40.0 acre size range (exclusive of parking spaces, roads, footprints of restrooms and other structures and other areas committed to non-recreational purposes). Alternate functional recreation area surfacing, including recreation-grade artificial turf, etc., may be acceptable alternatives.
- Parking: one space per every 20 units, as per the ordinance.
- Vehicular barriers: (as needed).
- Trash receptacles:
 - 10.01 – 20.0 acres: 10 receptacles.
 - 20.01 – 40.0 acres: 15 receptacles.
- Bicycle racks
 - 10.01 – 20.0 acres: 10 (4 bike capacity).
 - 20.01 – 40.0 acres: 15 (4 bike capacity).
- Park benches:
 - 10.01 – 20.0 acres: 10 benches.
 - 20.01 – 40.0 acres: 15 benches.
- Security lighting: mandatory for recreation areas in the 10 .0 to 40.0 size category
- Shade structure(s) on concrete pad (choice of vendor and style), 20' x 28'.
 - 10.01 – 20.0 acres: 3 structures.
 - 20.01 – 40.0 acres: 4 structures.
- Picnic tables with benches:
 - 10.01 – 20.0 acres: 12 picnic tables.
 - 20.01 – 40.0 acres: 18 picnic tables.

- Grills:
 - 10.01 – 20.0 acres: 8 grills.
 - 20.01 – 40.0 acres: 14 grills.
- Basketball court:
 - 10.0 – 20.0 acres: 1 full and 1 half-court basketball courts required (post-tension slabs recommended).
 - 20.01 – 40.0 acres: 2 full-court basketball courts required (post-tension slabs recommended).
- Playground and/or fitness equipment:
 - 10.01 – 20.0 acres: 4 individual components (play or fitness) plus two 5-pc multi-use play structures.
 - 20.01 – 40.0 acres: 6 individual components (play or fitness) plus two 5-pc multi-use play structures.
- Perimeter walking/jogging path system:
 - 10.01 – 40.0 acres: DG or paved perimeter path system mandatory, with DG path or paved path to be constructed to the specifications shown in the Appendix of this manual.
- Athletic fields:
 - 10.01 – 20.0 acres: 1 baseball/softball field and 1 soccer/football field.
 - 20.01 – 40.0 acres: 2 baseball/softball fields *and* 1 soccer/football field.
- Maintenance building: necessary for recreation areas in this size category.

Recommended/suggested additional features:

- Public art.
- Additional half or full-size basketball court.
- Additional soccer field (strongly recommended).
- Swimming pool.
- Community center.

District Parks

District parks are typically 40.01 acres to 100 acres in size. Examples include Lawrence District Park, Picture Rocks Park, and Sahaurita Park.

Minimum features for parks in this size category include:

- Infrastructure:
 - Water
 - Power
 - Telephone (line to site)
 - Sewer

- Water fountains: 6 fountains.
- Restroom facilities: 4 restroom buildings or equivalent, each with one men's facility (one toilet, one urinal and sink) and one women's facility (two toilets and sink).
- Linkages to adjacent or nearby trails, linear parks, greenways, etc. (if applicable).
- Signs.
- Fencing (as needed).
- Landscaping (trees and other plant materials, preferably native; see Section 10 in manual for additional information).
- Irrigation.
- Turf area: 15% of total park area for all recreation areas in the 40.0 to 100.0 acre size range (exclusive of parking spaces, roads, footprints of restrooms and other structures and other areas committed to non-recreational purposes). Alternate functional recreation area surfacing, including recreation-grade artificial turf, etc., may be acceptable alternatives.
- Parking: one space per every 20 units, as per the ordinance.
- Vehicular barriers: (as needed).
- Trash receptacles: 15 receptacles minimum.
- Bicycle racks: 12 racks (4-bike capacity) minimum.
- Park benches: 15 benches minimum.
- Security lighting – necessary.
- Shade structure(s) on concrete pad (choice of vendor and style), 20' x 28': 5 structures.
- Picnic tables with benches: 20 minimum.
- Grills: 16 minimum.
- Basketball courts: 2 full and 1 half-court basketball court necessary (post-tension slab recommended).
- Play or and/or fitness equipment: 6 individual components (play or fitness) plus three 5-piece multi-use play structures.
- Perimeter walking/jogging path system: DG or paved perimeter path system mandatory, with DG path or paved path to be constructed to the specifications shown in the Appendix of this manual.
- Athletic fields: 3 baseball/softball fields required, plus 2 soccer/football fields.
- Maintenance building: necessary.
- Swimming pool: necessary.
- Community center: necessary.

Recommended/suggested additional features:

- Public art.
- Additional half or full-size basketball court.
- Additional soccer field.

Regional Parks

Regional parks exceed 100 acres in size. Regional parks may be urban parks, natural resource parks (i.e. natural open space parks with passive recreation features such as trails), or “hybrid” parks that contain both developed and natural features. Examples include Drachman Agua Caliente Park, Thomas Jay Regional Park, Manzanita Park, Ajo Regional Park, Arthur Pack Park, Southeast Regional Park, and Tucson Mountain Park.

Minimum features for parks in this size category include:

District Park features, plus additional features identified by the developer and the Pima County Natural Resources, Parks and Recreation Department. A tract of high-quality natural open space (i.e. with significant natural resource values) may satisfy the recreation area requirement in all or part.

Recommended Features:

Special purpose park (open space area with trails, skate park, equestrian facility, etc.).

Linear Parks/Greenways

Linear Parks/Greenways are regional park or park-like features developed along watercourses and/or major road rights-of-way, and are intended to provide recreation and fitness opportunities, as well as alternate modes of transportation. These facilities are typically developed to the City/County River Park or Divided Urban Pathway Standards (cross-sections of these standards can be found in the Appendix of this Design Manual). Examples include the Rillito River Park, the Santa Cruz River Park, the Pantano River Park, the Houghton Greenway, and the Camino Loma Alta Greenway.

Linear Park or Greenway segments constructed to fulfill the requirements of the code (in full or part) shall be constructed to Pima County standards consistent with the standards expressed in the Recreation Area Design Manual. Completed Linear Park/Greenway segments shall be transferred to Pima County, and will be maintained by Pima County or another entity by agreement with the county. Standard conditions expressed in Section 7 of this manual, including warranty period, apply.

Minimum features for parks in this size category include:

- Paved path (12' – 15' in width, per River Park or Divided Urban Pathway Standard).
- Natural surface (DG) path (8' – 10' in width, per River Park or Divided Urban Pathway Standard).
- Bridges (if necessary).
- Landscaping (native species).
- Irrigation.
- Shade Structure (one structure every one mile); design to be approved by PCNRPR.

- Parking/Staging (public access facilities).
- Water fountain (one fountain every one mile).
- Fencing/railing/post-and-cable, or other vehicular barriers as appropriate.
- Signage (as appropriate, consistent with the Regional Greenways Plan).
- Linkages to adjacent or nearby parks, trails, linear parks, greenways, etc.

Optional Features:

Restrooms.

Park nodes adjoining the corridor with turf and other recreation features.

Special Purpose Parks / Alternative Recreation Areas.

Special Purpose Parks are developed to serve a particular community recreational need, such as a skateboard park, a natural-resource based trails park, an equestrian center, a soccer complex, a dog park, an amphitheater or performing arts facility, or an off-highway vehicle park. SPPs can range in size from one half acre to 640 acres or more, depending on the special purpose. Examples include the BMX track at Pima County’s Manzanita Park, the skate park at the City of Tucson’s Purple Heart Park, and Pima County’s Pima Motorsports Park.

Alternative Recreation Areas are recreation areas designed to complement and serve the special needs of a given residential subdivision project and/or its surrounding area. Examples of Alternative Recreation Areas include:

A. Active Adult Recreation Area. An Active Adult Recreation Area could be constructed to address the unmet recreation needs of active adults, and might include a community recreation center or club house, park space, and/or a golf course that provides recreational utility considerably beyond golf—for example, a golf course with a system of walking trails around its perimeter combined with a Par Course, adjacent park nodes and other similar features that are directly integrated into its design (golf courses themselves are not eligible for inclusion as recreation areas, and no credit against the standard requirements will be applied for them).

B. Educational Recreation Area. An Educational Recreation Area could be created to take advantage of an opportunity to provide significant educational benefits within a recreational context. Examples of this kind of recreation area might include a night sky/astronomy park, a water resources park (i.e. constructed wetlands with a path system and interpretive exhibits), a passive wildlife observation park with a path system and other features, an archeological park with a path system and interpretive exhibits, a cultural heritage or diversity park, a military veterans memorial park, and/or a public art park. All such parks should provide substantial recreational utility along with their educational features.

C. Special Needs Recreation Area. A Special Needs Recreation Area could be developed to provide recreation opportunities for physically challenged members of the community. One example is Pima County’s Feliz Paseos Universal Access Open Space and Trails Park, which, when complete, will include an accessible trail system and interpretive exhibits, along with other features.

E. Expanded Capacity Recreation Area. This category of recreation area would address unmet needs for expanded hours at an existing or new recreation facility or facilities. Examples might include the

construction of an indoor or sun-shielded active recreation area (such as a basketball facility under a ramada-type structure), lighting of amenities such as ball fields, and other similar enhancements that dramatically increase the availability of facilities to the public.

F. Other Opportunities. Pima County recognizes that new and unique types of recreation facilities may be created as time passes, such as technology parks, and is willing to consider proposals that suggest alternative kinds of recreation facilities that may significantly benefit the community and its quality of life. Such proposals must provide value that is either equivalent or greater than the value of the standard requirements.

6. Recreation Area Feature Requirements

RECREATION AREA FEATURES N = Necessary / R = Recommended	< 1 acre	1-3 acres	3-5 acres	5-7.5 acres	7.5-10 acres	10-20 acres	20-40 acres	40-100 acres
Water	N	N	N	N	N	N	N	N
Electricity	N	N	N	N	N	N	N	N
Telephone	n/a	n/a	R	R	R	N	N	N
Water Fountains	R	R	N-1	N-1	N-2	N-3	N-5	N-6
Wastewater / Sewer	n/a	n/a	n/a	n/a	n/a	N	N	N
Unisex Restroom	n/a	n/a	R-1	R-1	R-2	n/a	n/a	n/a
Restrooms — Separate Men's and Women's	n/a	n/a	n/a	n/a	n/a	N-2	N-3	N-4
Trail Linkages as applicable	N	N	N	N	N	N	N	N
Signage	N	N	N	N	N	N	N	N
Fencing as needed	N	N	N	N	N	N	N	N
Landscaping including trees; native preferred	N	N	N	N	N	N	N	N
Irrigation	N	N	N	N	N	N	N	N
Turf Area (or alternative)	N-30%	N-30%	N-30%	N-30%	N-30%	N-20%	N-20%	N-15%
Parking per code (unless alt. available)	N	N	N	N	N	N	N	N
Vehicle barriers	N	N	N	N	N	N	N	N
Trash Receptacles	N-1	N-2	N-2 to 4	N-4	N-6	N-10	N-15	N-15+
Bicycle Racks (4 bike capacity)	N-1	N-1	N-2	N-4	N-6	N-6	N-10	N-12
Park Benches	N-1/R-2	N-2	N-4	N-6	N-8	N-10	N-15	N-15+
Security Lighting	R	R	N	N	N	N	N	N
Public Art	R	R	R	R	R	R	R	R
Shade Structures (S.S.)/Concrete Pad 20' x 28'	n/a	N-1	N-1	N-2	N-2	N-3	N-4	N-5
Picnic Tables w/benches	n/a	N-2	N-4	N-6	N-8	N-12	N-18	N-20
Grills	n/a	N-2	N-3	N-4	N-6	N-8	N-14	N-16
Basketball Court - One Half Court Size	n/a	n/a	N-1	R	R	N-1	n/a	N-1
Basketball Court - Full Court Size	n/a	n/a	n/a	N-1	N-1	N-1	N-2	N-2
Play Ground - Individual Components	n/a	N-3	n/a	N-2	N-2	N-4	N-6	N-6
Play Ground - Multi-Use Structures (5piece)	n/a	n/a	N-1	N-1	N-2	N-2	N-2	N-3
Perimeter Walking/Jogging Path System	n/a	R	R	N	N	N	N	N
Athletic Field - Baseball/Softball	n/a	n/a	R	N or N	N	N	N-2	N-3
Athletic Field - Soccer/Football	n/a	n/a	n/a	N	N	N	N-1	N-2
Maintenance Building	n/a	n/a	n/a	n/a	n/a	N	N	N
Swimming Pool	n/a	n/a	n/a	n/a	n/a	R	R	N
Community Center	n/a	n/a	n/a	n/a	n/a	R	R	N

7. Requirements for Parks to be Transferred to Pima County Upon Completion

Recreation areas constructed pursuant to the Recreation Areas in Subdivisions Ordinance may be transferred to Pima County upon their completion, provided that they meet the following requirements:

- The recreation area must be a minimum of 10 acres in size.
- The recreation area must abut, and be served by, a collector-sized or larger street.
- The recreation area must be constructed in a manner consistent with the City/County Standard Specifications for Public Improvements and the standards of the Pima County Natural Resources, Parks and Recreation Department.

Additional Requirements:

- Plans for the subject recreation area must be reviewed and approved by Pima County Natural Resources, Parks and Recreation Department planning and operations staff at the 30/60/90/100% plan stages.
- Public participation shall be a part of the design process for the park. The Pima County Natural Resources, Parks and Recreation Department will assist with the scheduling and execution of public meetings.
- Projects must be consistent with the Pima County lighting code and other applicable code requirements.
- Low water use plant materials shall be utilized in the project (per the ADWR list; please see Section 10 of this manual).
- A set of as-built plans for the recreation area shall be provided to the Pima County Natural Resources, Parks and Recreation Department after the project is completed.
- Consistent with state standards, a minimum two-year warranty period shall be provided by the developer for the subject recreation area and all of its facilities.

8. Trails-Related Requirements

The Recreation Areas in Subdivisions Ordinance includes the following trails-related requirements:

1. If a trail listed on the Eastern Pima County Trail System Master Plan (Pima County Ordinance #1996-75) passes through a residential or commercial project, the developer shall provide a corridor for the trail and construct the segment of the trail consistent with the Recreation Area Design Manual and the standards manual of the Eastern Pima County Trail System Master Plan, or as directed by the Pima County Natural Resources, Parks and Recreation Department.
2. When residential projects abut trails listed on the Eastern Pima County Trail System Master Plan, or trails identified as a significant trail corridor by the Natural Resources, Parks and Recreation Department, the developer shall provide a connection to the trail from the subdivision's recreation area in a manner acceptable to the Pima County Natural Resources, Parks and Recreation Department.
3. The minimum corridor width for a Pima County River Parks is 100', and the standard width of a Greenway corridor is 50'.

- Trail corridors and trails-related improvements may be credited against the standard requirements of the Ordinance.

Cross-sections that depict Pima County’s standards for River Park and Greenway corridor development can be found in the Appendix of the Design Manual, along with cross-sections for both paved and DG paths.

9. Park Service-Area Standards

A “service area” is the region that is typically served by a recreation area of a given size. Service area standards often vary according to the jurisdiction and the authority. The service areas provided below should be considered general guidelines, and not strict standards. “NRPA” is the National Recreation and Park Association.

Neighborhood Parks (0 – 10 acres)

- Chicago: 0.1 acres to 0.5 acres: .10 mile; .5 acres to 5.0 acres: .25 mile
- NRPA: 0.1 acres to 1.0 acres: .25 mile; 1.0 acres to 10 acres: .5 miles.
- Tucson: 0.1 acres to 1.0 acres: .25 miles; 1.0 acres to 15 acres: .5 miles

Community Parks (10.01 – 40.0 acres)

- Chicago: 5.0 acres to 15.0 acres: .5 mile
- NRPA: 30 acres to 50 acres: 0.5 to 3.0 miles
- Tucson: 15 acres to 40 acres: 1.0 miles

District Parks (40.01 – 100.0 acres)

- Chicago: 15.0 acres to 50 acres: .75 mile
- NRPA: Determined by the quality and suitability of the site.
- Tucson: 40 acres to 200 acres: 2.5 miles

Regional Parks (100 acres plus)

- Chicago: 50 acres plus: 1.0 mile
- NRPA: Determined by the quality and suitability of the site.
- Tucson: 200 acres plus: 7.0 miles

10. Landscaping Recommendations

Pima County recommends that the plant materials utilized in the development of parks and recreation areas be native and drought-tolerant wherever possible. An excellent reference manual that lists a wide variety of low water use plants is the Arizona Department of Water Resources’ *Desert Guide*. A copy of the guide can be viewed or printed from the ADWR web site. The Desert Guide can be accessed directly through the following address:

<http://www.water.az.gov/adwr/Content/Conservation/LowWaterPlantLists/TucsonAMA/Files/DesertGuideTUC.pdf>

11. Contact Information

The following agency contacts are available to provide you with additional information about the Recreation Areas in Subdivisions Ordinance and related requirements:

- Planning Unit, Planning and Development Division, Pima County Natural Resources, Parks and Recreation Department: 877-6000
- Pima County Planning Division, Pima County Development Services Department: 740-6800

12. Appendices

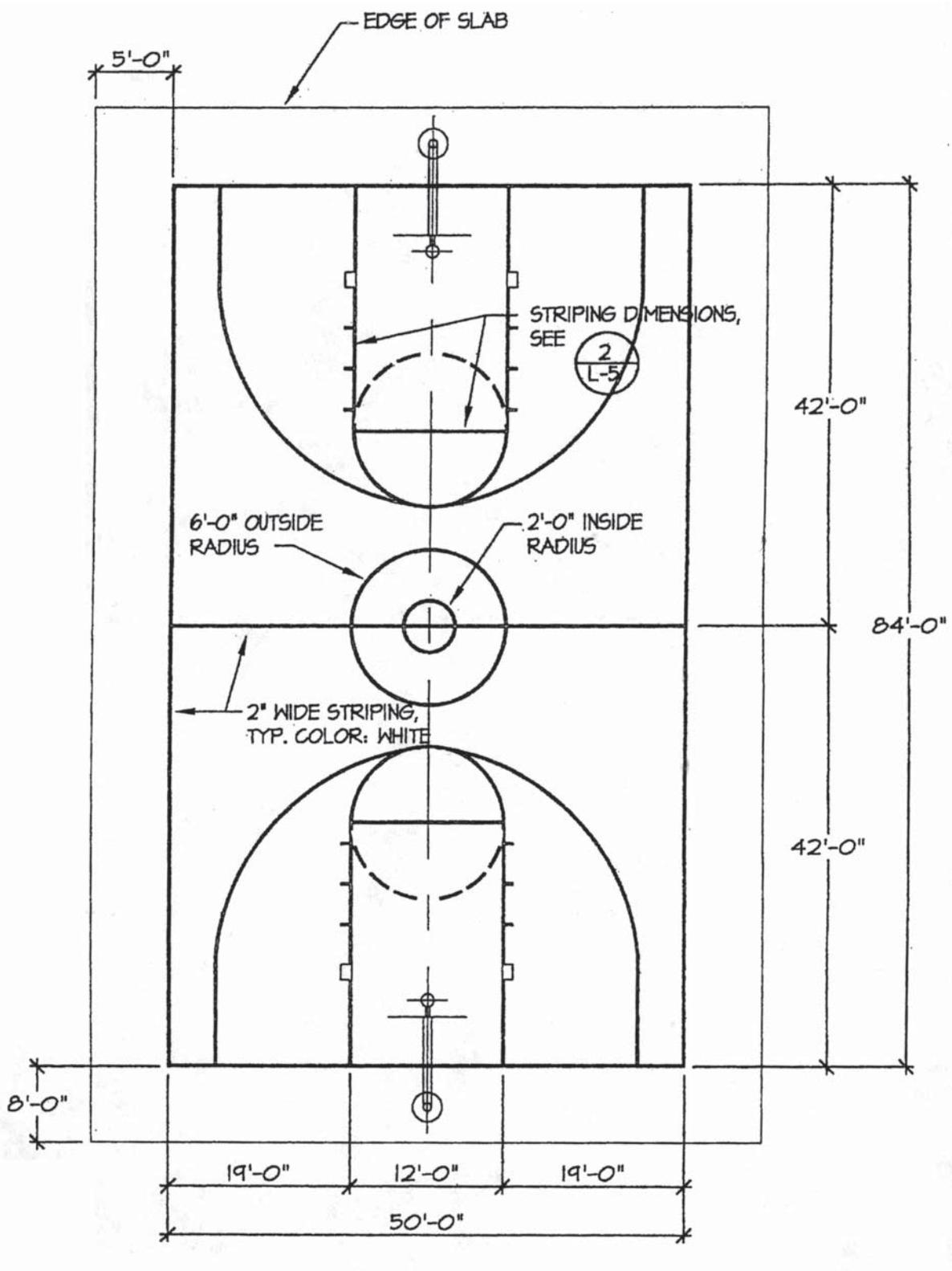
The Appendices of this manual include the following information:

- Recreation Area Feature Descriptions and Specifications
- Sample Pima County Recreation Area/Park Configurations



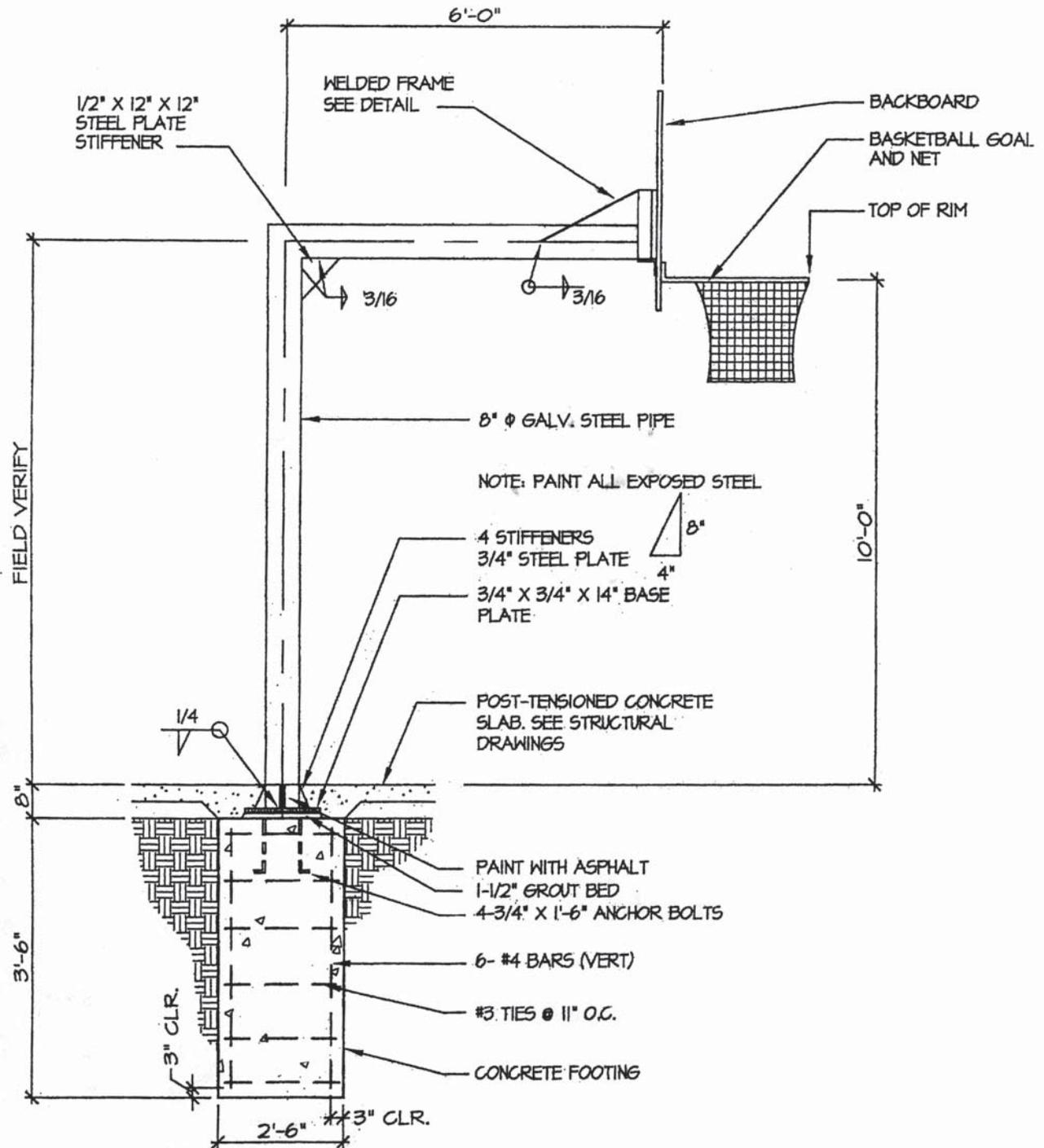
Recreation Area Feature Descriptions and Specifications

ATHLETIC FIELD LAYOUTS



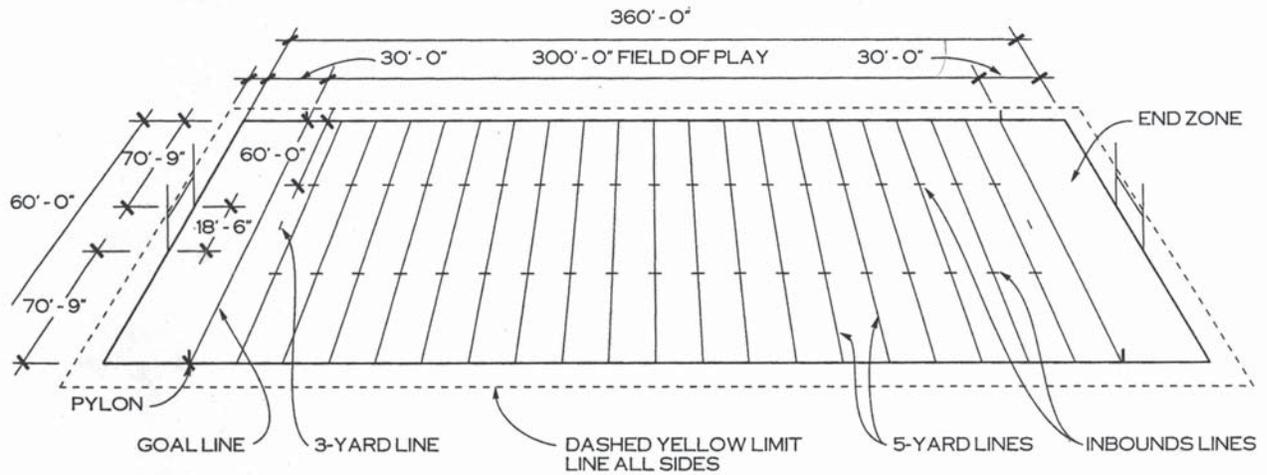
BASKETBALL COURT STRIPING PLAN
not to scale

ATHLETIC FIELD LAYOUTS

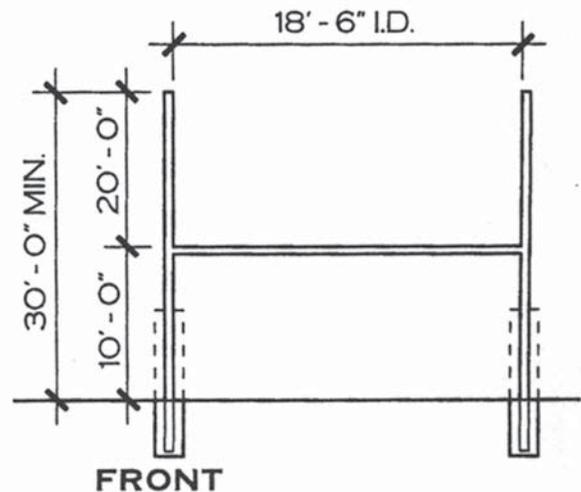


BASKETBALL AND BACKBOARD POST
not to scale

ATHLETIC FIELD LAYOUTS



Playing field is 360 ft. long x 160 ft. wide. All field dimensions are 4 in' wide and are marked with a white, nontoxic material. All measurements are from the edge of the line closest to the center of the playing field. End zone markings should not overlap goal lines. Location of in-bound lines is 60 ft. (53 ft. 4 in. for high school) for college football. Marks should be 4 in. wide x 2 ft. long.

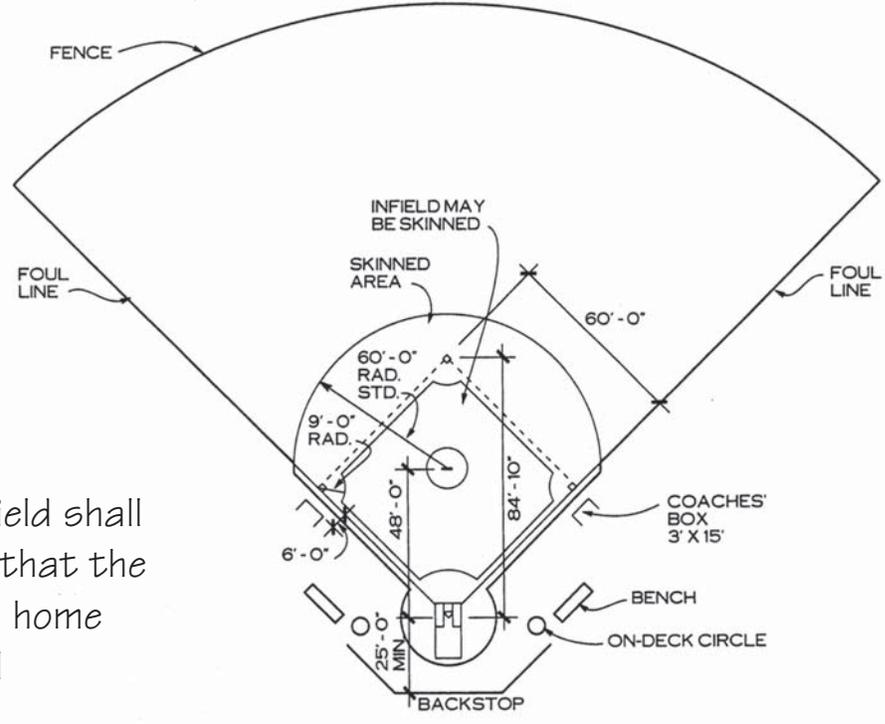
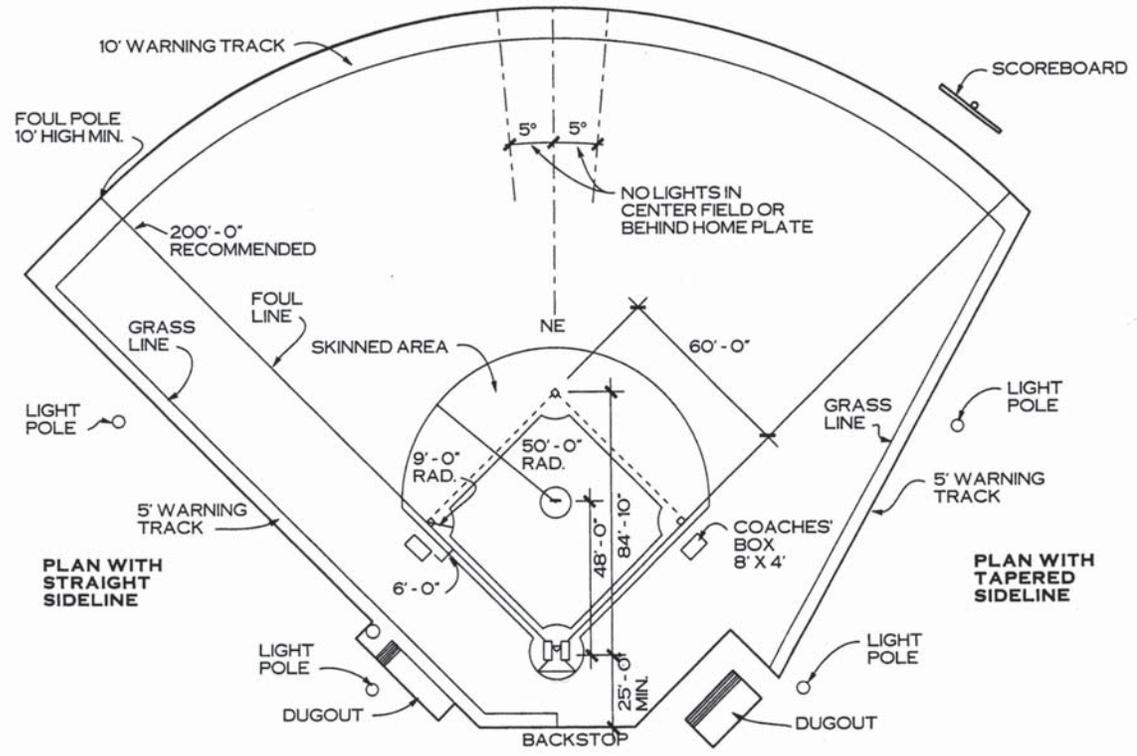


Goalposts should be padded to a height of 6 ft. Color of posts should be yellow or white.



FOOTBALL- National Collegiate Athletic Association
not to scale

ATHLETIC FIELD LAYOUTS

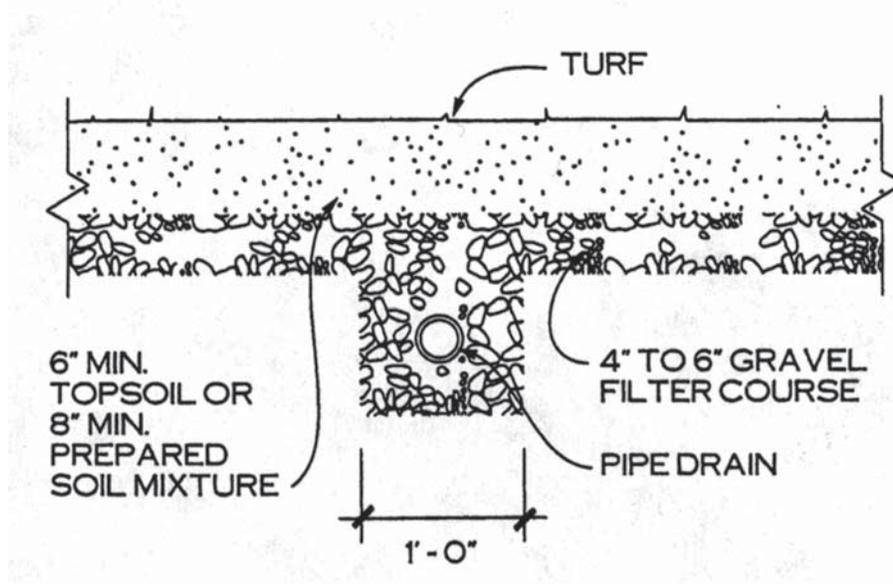


NOTE: The infield shall be graded so that the baselines and home plate are level



PLAN OF LITTLE LEAGUE BASEBALL FIELD
not to scale

ATHLETIC FIELD LAYOUTS

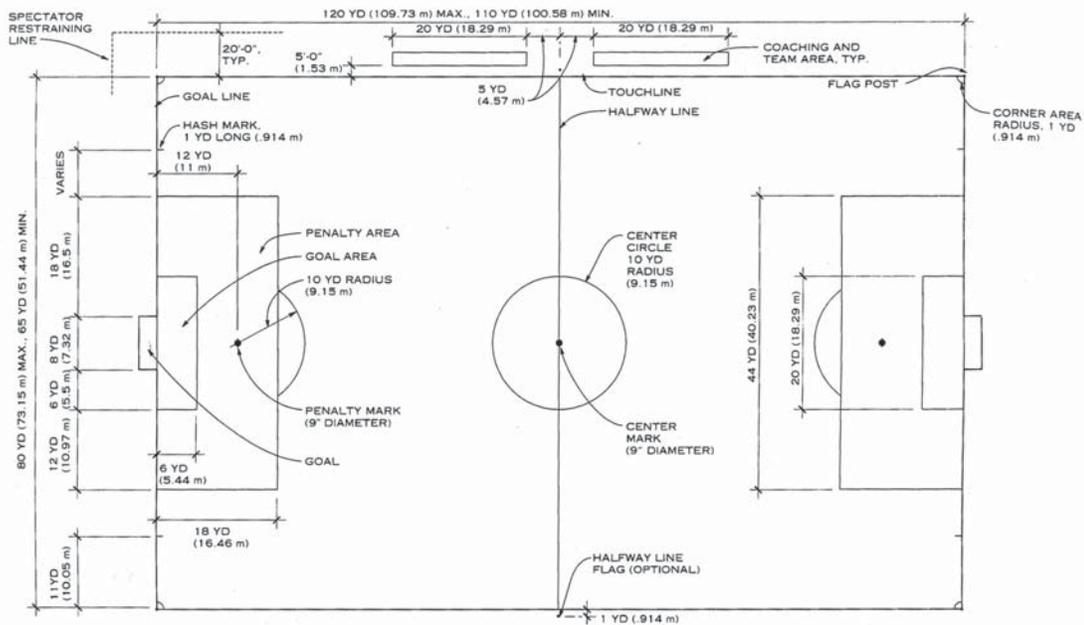


NOTES: Baselines should be level; if the diamond must pitch, the slope should not be more than 2% from third to first base or vice versa. The minimum slope of turf areas outside the skinned area is 1% when there is good subsoil drainage, 2.5% when drainage is poor.

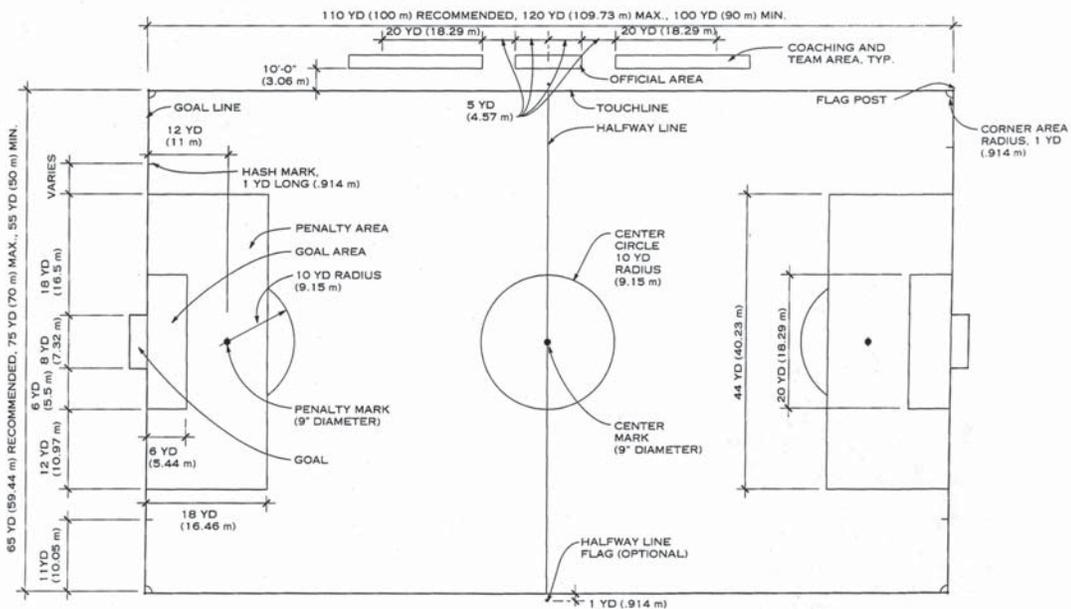


SECTION OF TURF AND SUBSOIL DRAIN
not to scale

ATHLETIC FIELD LAYOUTS



NCAA SOCCER- Recommended field dimensions are 75 yd. (90m.) wide x 120 yd. (109.73 m.) long. Field markings should be 4 in. (0.10 m.) wide.

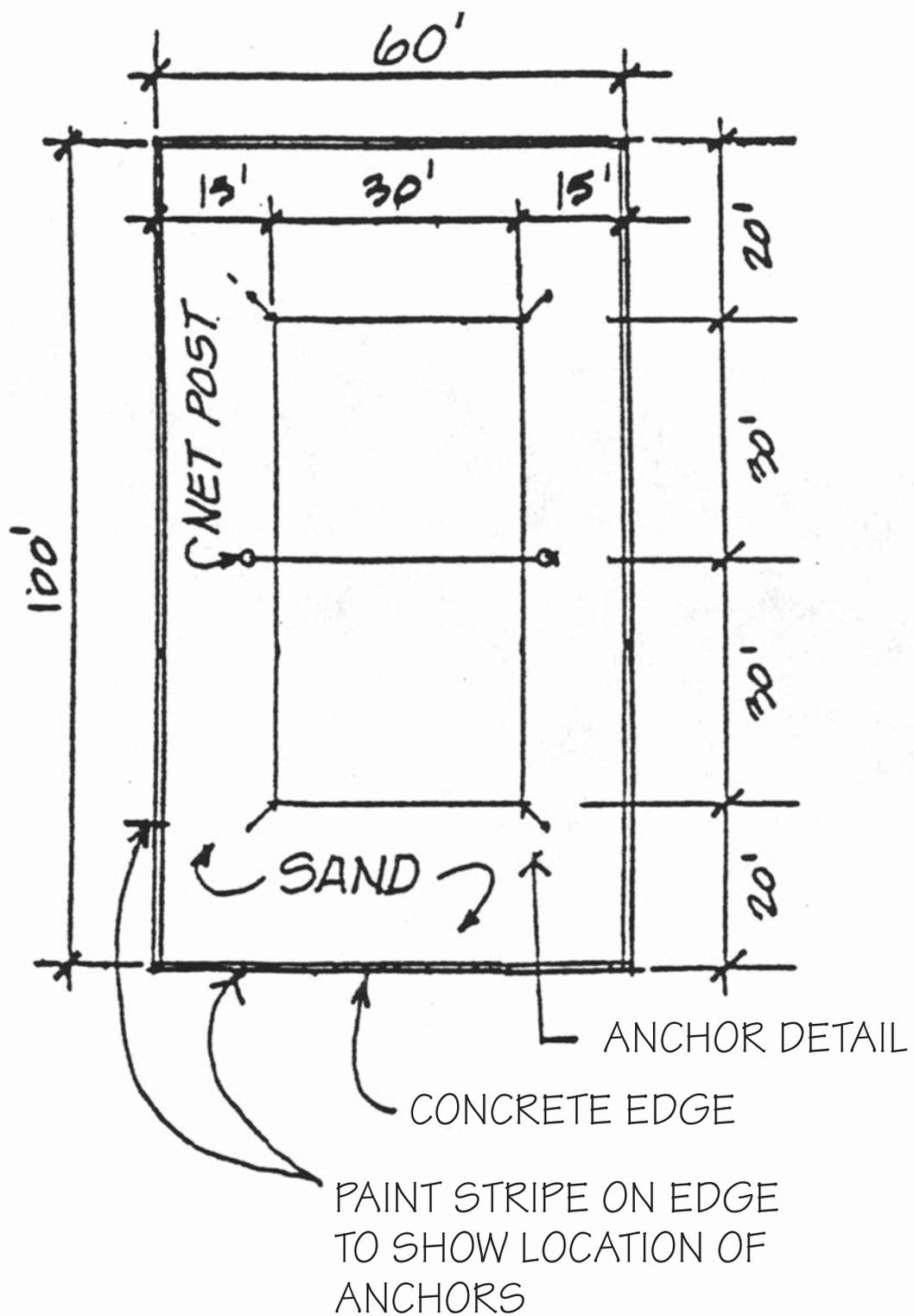


HIGH SCHOOL SOCCER- Recommended field dimensions for middle school soccer are 55 yd. (50m.) wide x 100 yd. long. Field markings should be 4 in. (0.10 m.) wide.



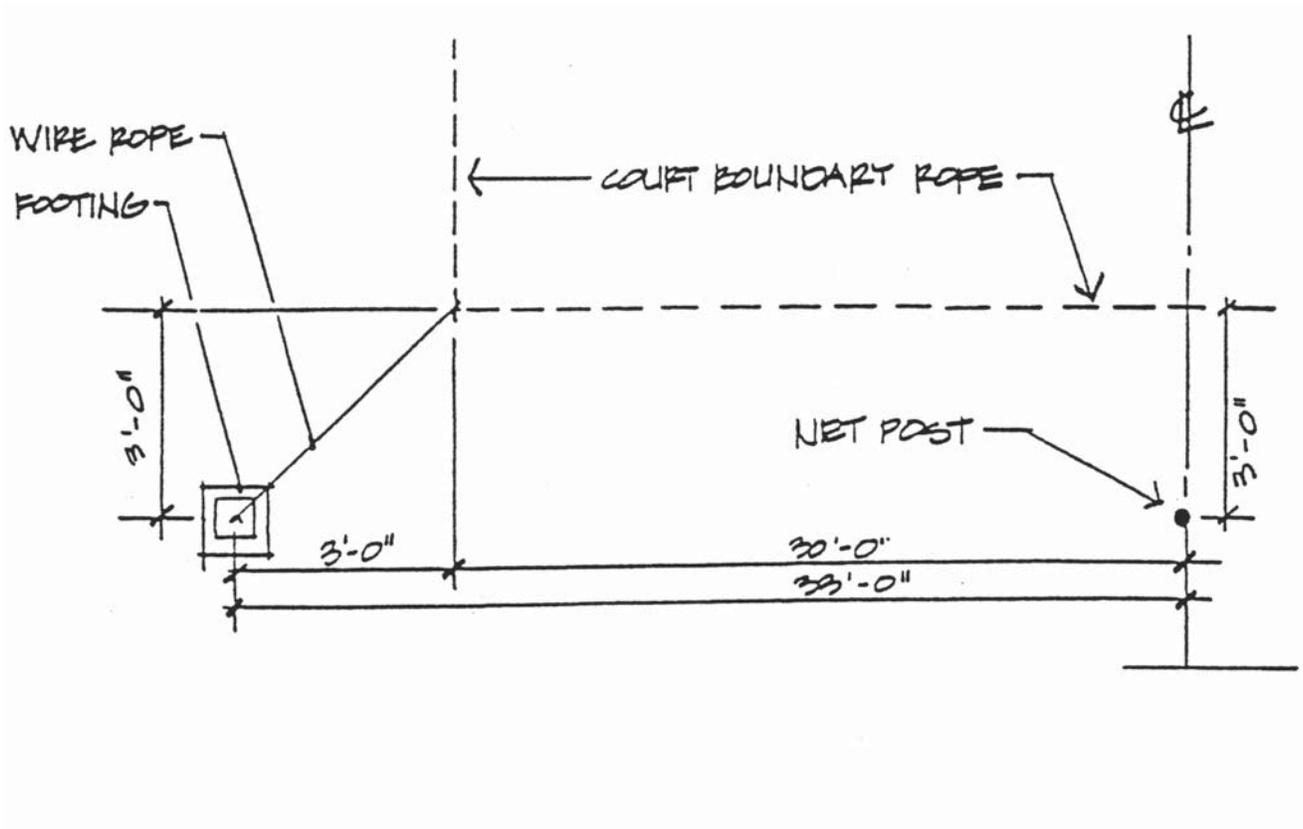
SOCCER FIELDS
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ATHLETIC FIELD LAYOUTS



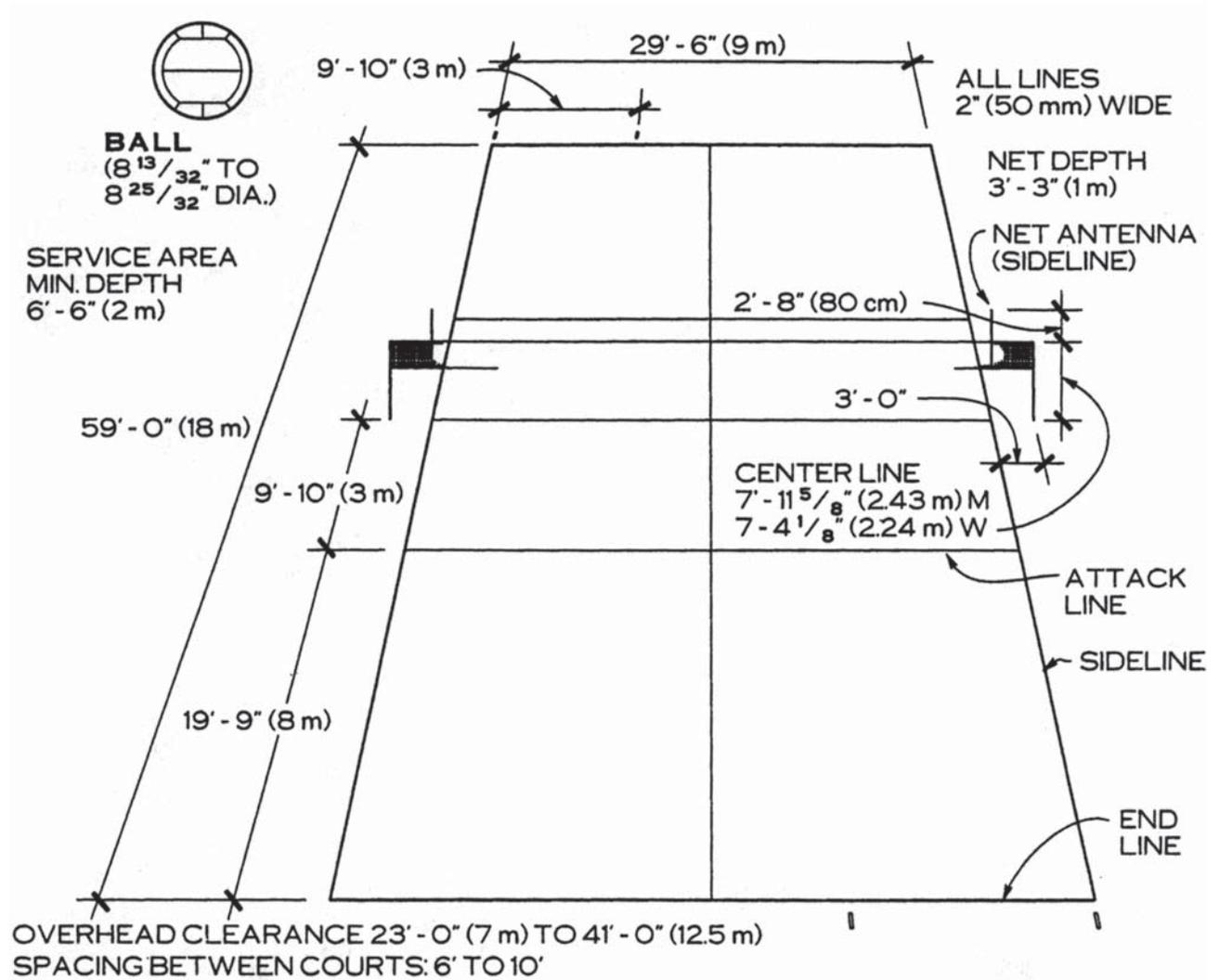
SAND VOLLEYBALL COURT LAYOUT
not to scale

ATHLETIC FIELD LAYOUTS



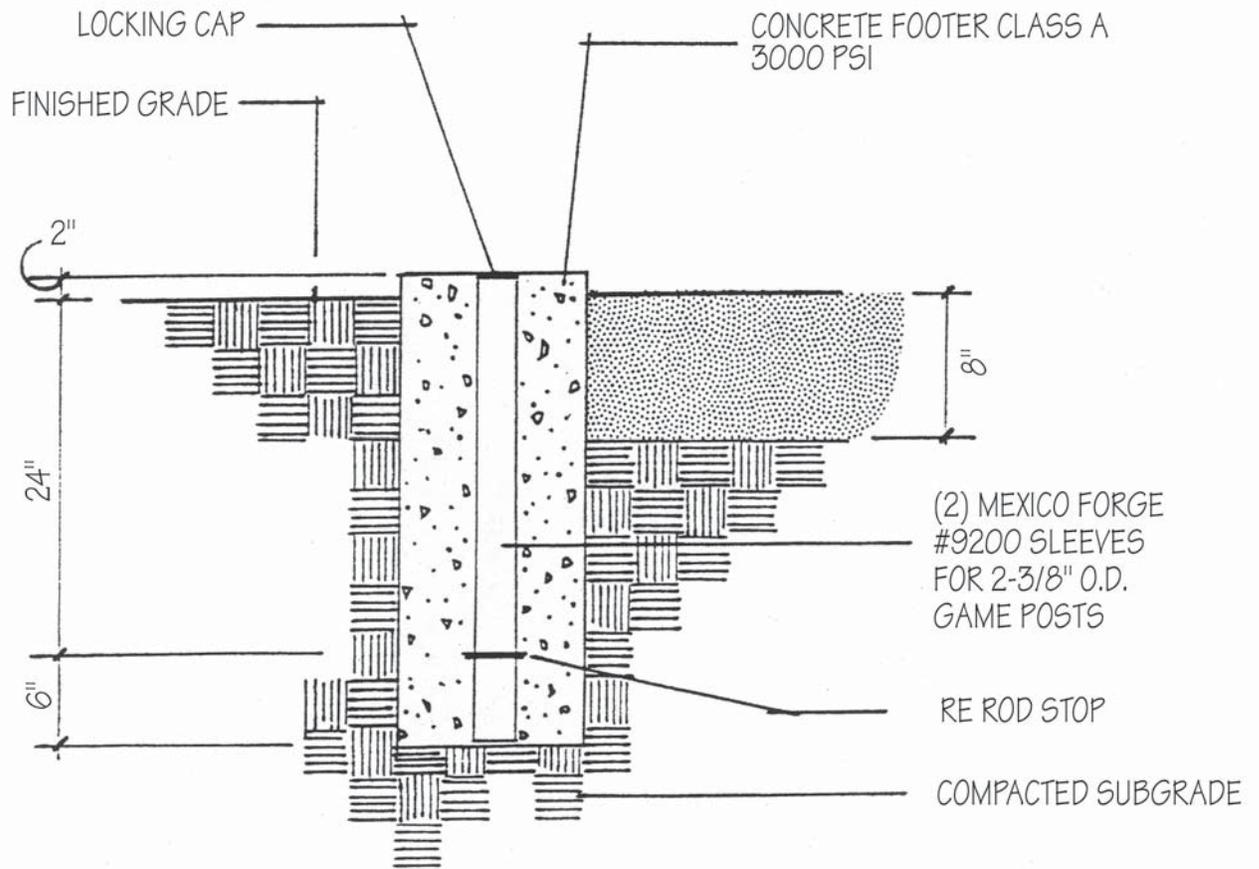
SAND VOLLEYBALL COURT ROPE ANCHOR PLAN VIEW
not to scale

ATHLETIC FIELD LAYOUTS



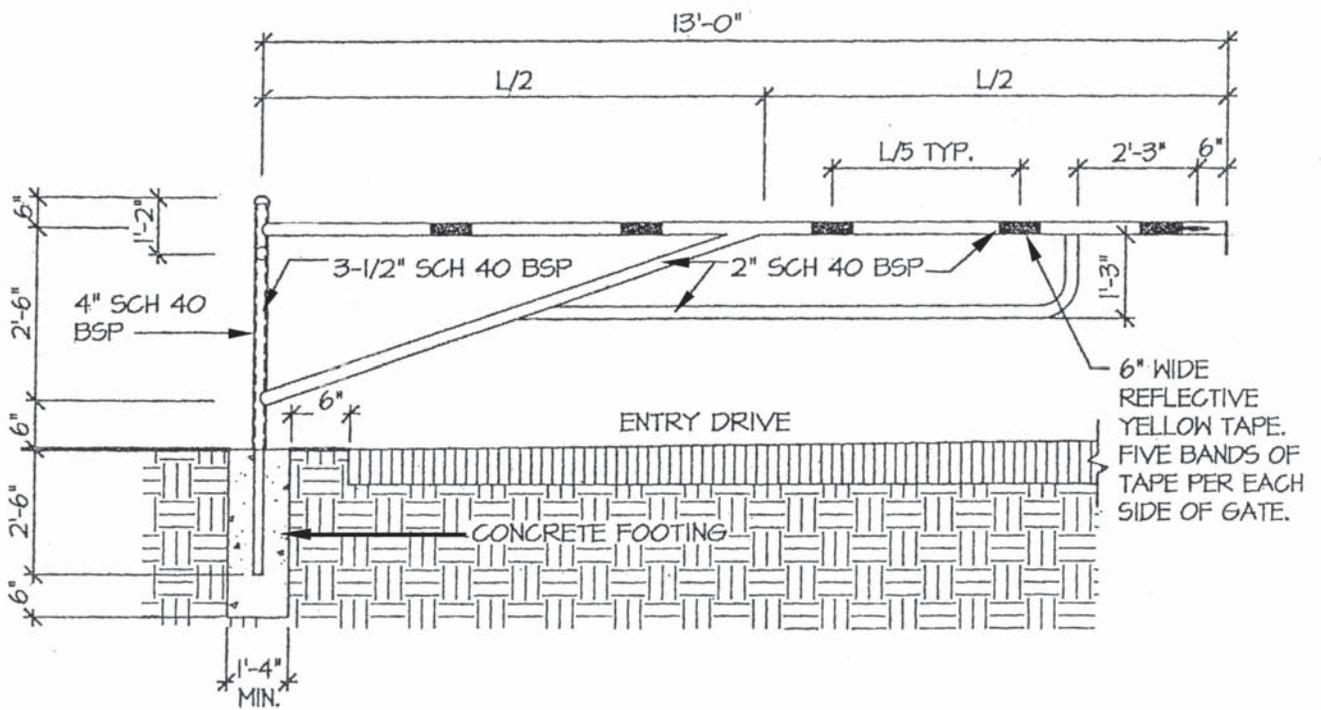
VOLLEYBALL
not to scale

ATHLETIC FIELD LAYOUTS



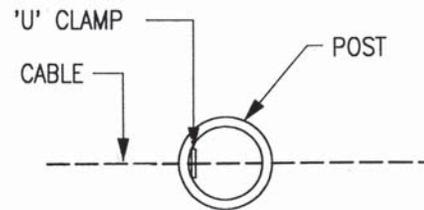
GAME SLEEVE DETAIL
not to scale

GATES AND FENCES



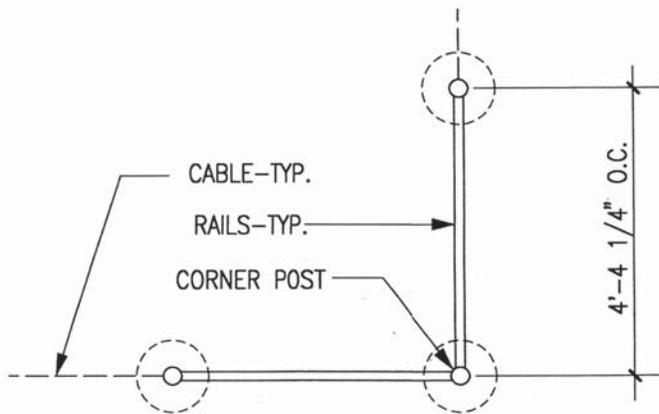
ENTRY DRIVE GATE
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GATES AND FENCES

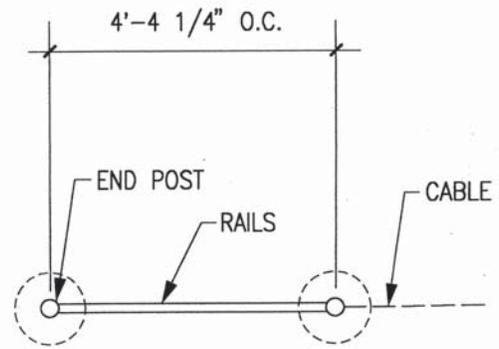


CABLE TO BE DRAWN TAUT WITH A 'U' CLAMP AROUND CABLE INSIDE OF EVERY 5TH POST IN LINE.

POST PLAN VIEW



CORNER UNIT-PLAN VIEW



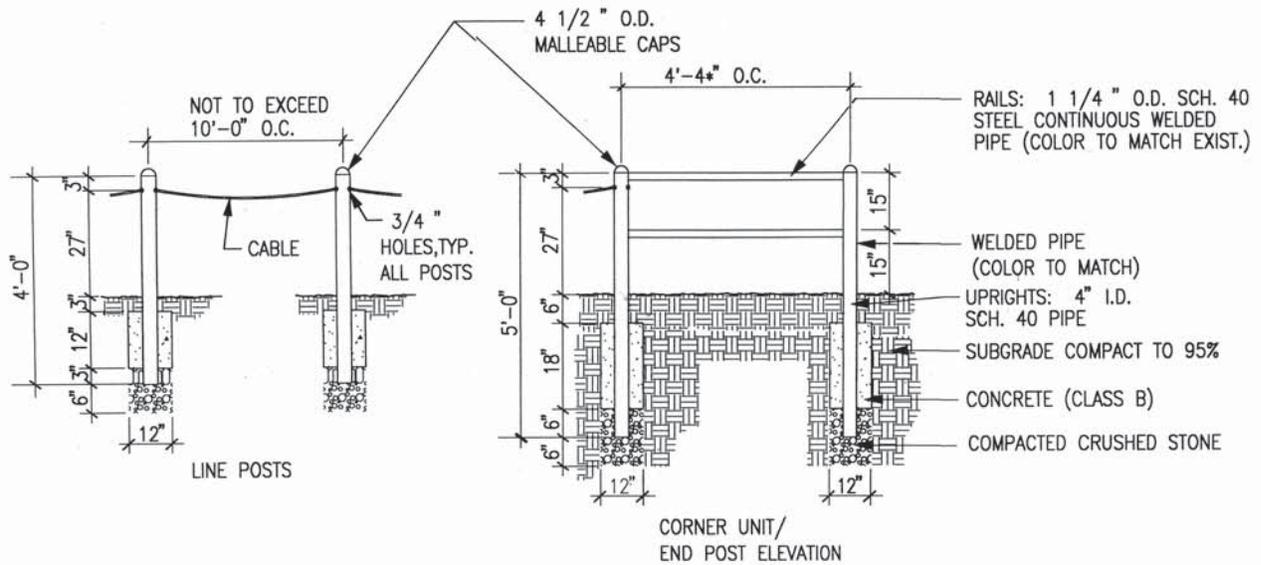
END POST-PLAN VIEW

INSTALL END POST CONFIGURATION AT ALL TERMINUS POINTS TO POST & CABLE RUNS.



POST AND CABLE DETAIL
not to scale

GATES AND FENCES



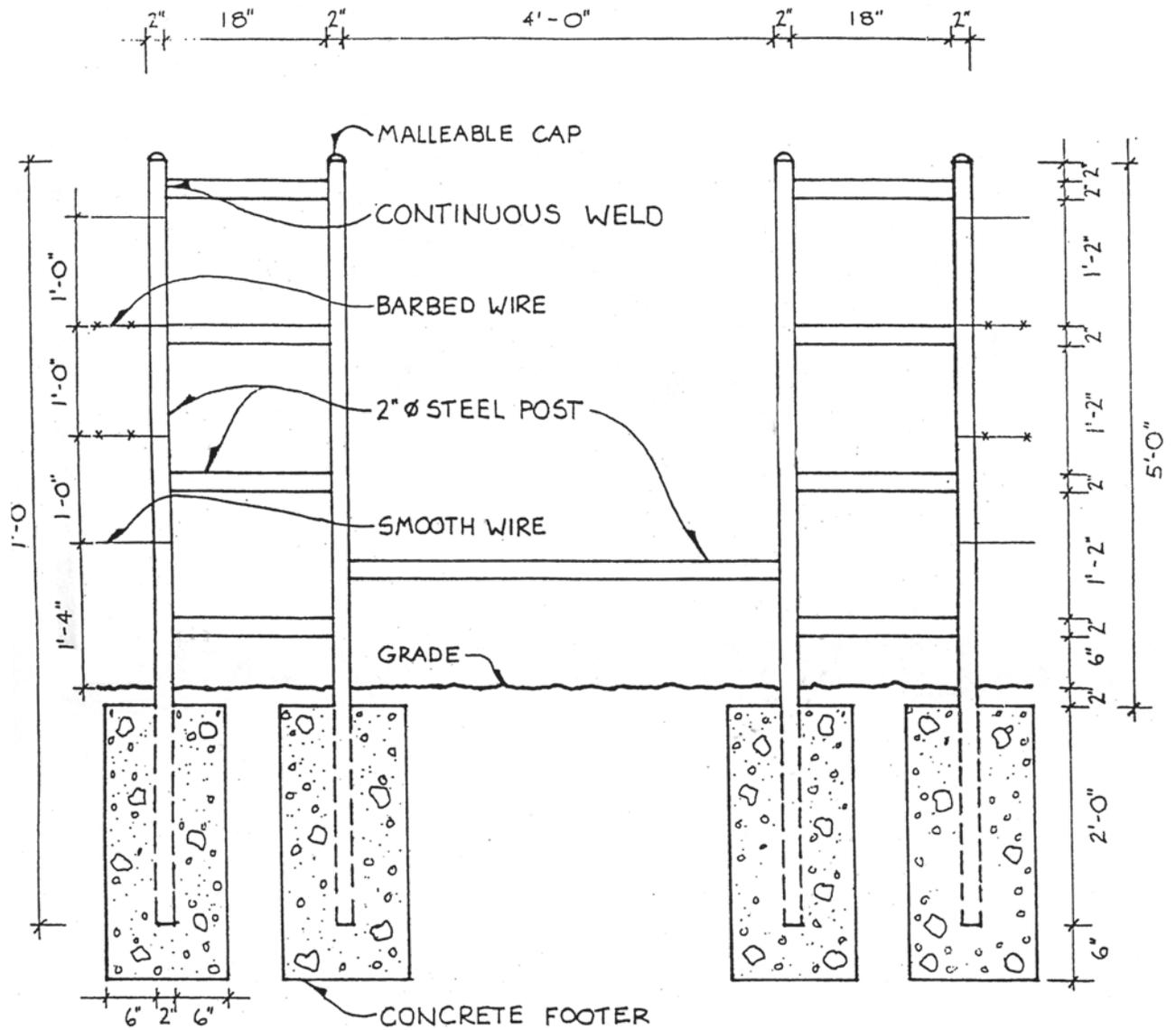
NOTES:

1. ALL SINGLE POSTS, CORNER POSTS, AND THEIR CAPS SHALL BE PAINTED 'FLEMISH BLUE' ACRYLIC EPOXY EXTERIOR PAINT.
2. ENTRANCE GATES AND CAPS SHALL BE PAINTED 'TRAFFIC YELLOW' ACRYLIC EPOXY EXTERIOR PAINT.
3. PAINT BY DUNN EDWARDS PAINT OR EQUAL, 'FLEMISH BLUE' #59. PAINT SHALL BE APPLIED WITH ONE PRIMER COAT AND 2 FINISH COATS.
4. CABLE SHALL BE 1/2" (6 x 25) GALVANIZED FIBRE CORE WIRE ROPE.
5. CABLE TO BE RETURNED AROUND POST AND FASTENED WITH (3) 'U' CLAMPS.
6. REFER TO LAYOUT PLAN FOR LOCATION.



STEPOVER GATE
not to scale

GATES AND FENCES

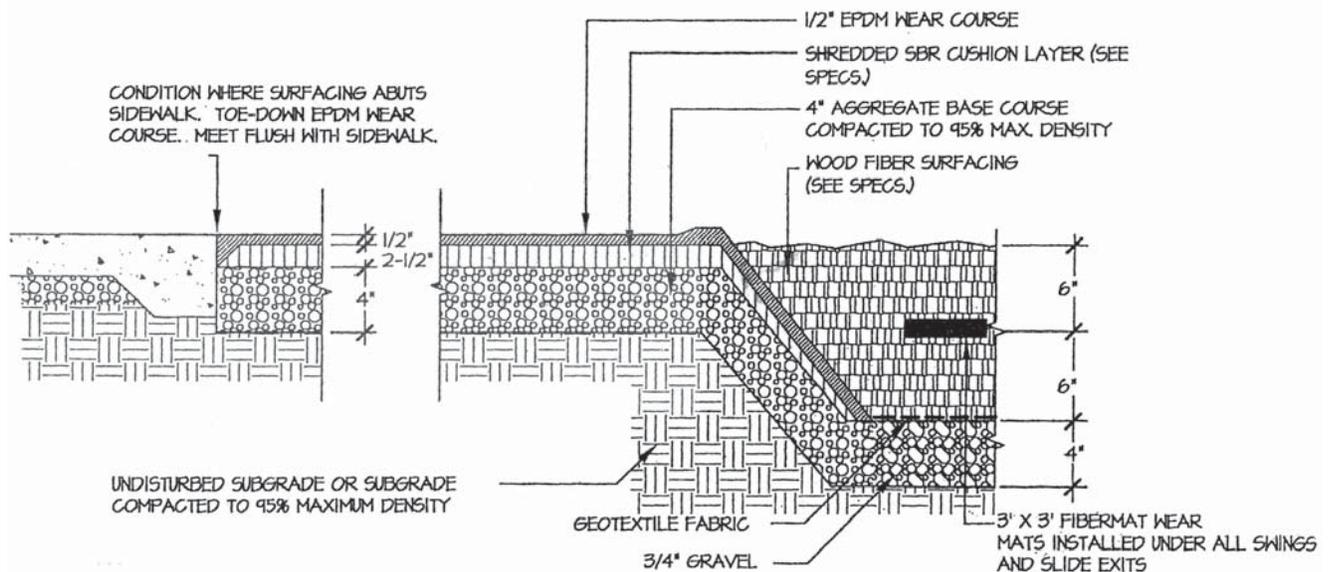


STEPOVER GATE DETAIL
not to scale

PLAYGROUNDS

NOTES:

1. WOOD FIBER SURFACING TO BE INSTALLED OVER ENTIRE 40' X 50' PLAYGROUND AREA EXCEPT WHERE POURED-IN-PLACE RUBBER RESILIENT SAFETY SURFACING OCCURS.
2. TOTAL THICKNESS OF RESILIENT SAFETY SURFACING IS BASED ON THE MAXIMUM FALL HEIGHT OF THE PLAY EQUIPMENT.
3. RESILIENT SAFETY SURFACE'S WEAR COURSE COLOR SHALL BE 50% BLACK AND 50% COLORS AS SELECTED BY THE OWNER'S REPRESENTATIVE.
4. CONTRACTOR IS RESPONSIBLE FOR THE EXCAVATION AND PREPARATION OF THE AREA TO RECEIVE THE RESILIENT SAFETY SURFACING TO MANUFACTURER'S RECOMMENDATIONS.
5. SEE ALSO THE SPECIFICATIONS FOR ADDITIONAL RESILIENT SAFETY SURFACING REQUIREMENTS.



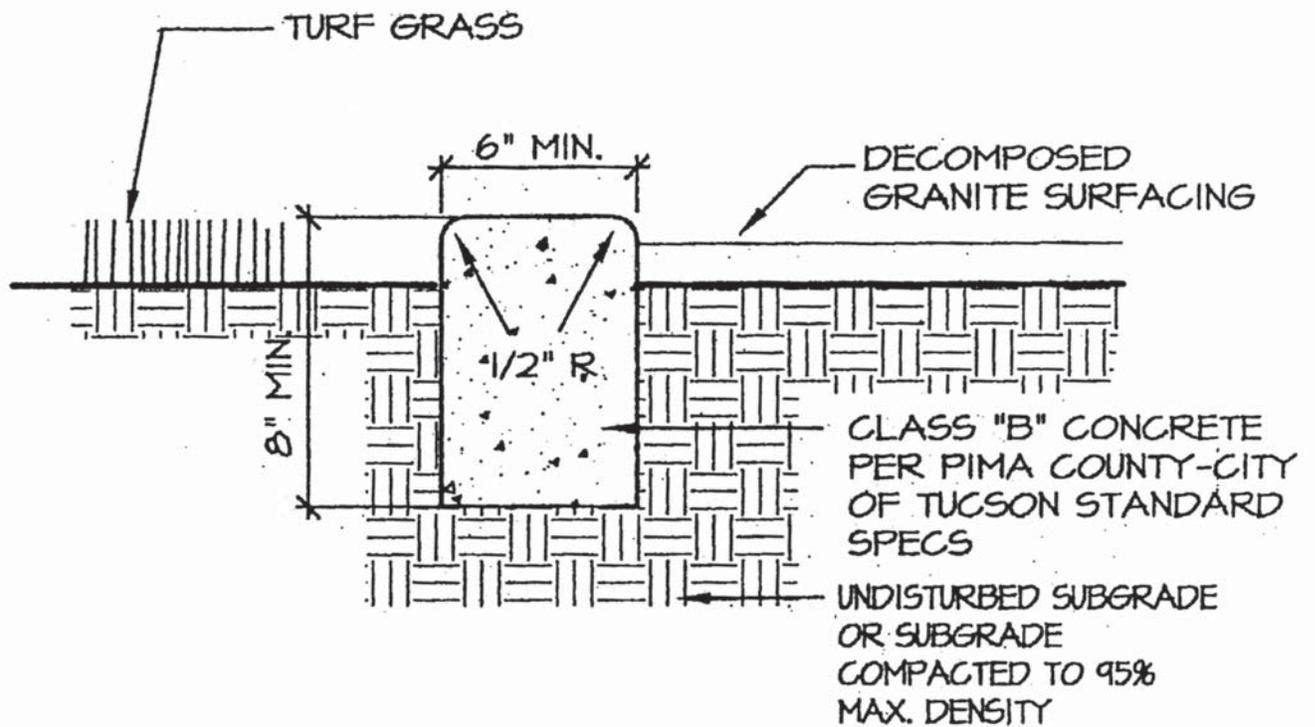
RESILIENT SAFETY SURFACING DETAIL

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PLAYGROUNDS

NOTES:

1. PROVIDE EXPANSION JOINTS EVERY 40' O.C. MAX.
AND CONTROL JOINTS EVERY 10' MAX.

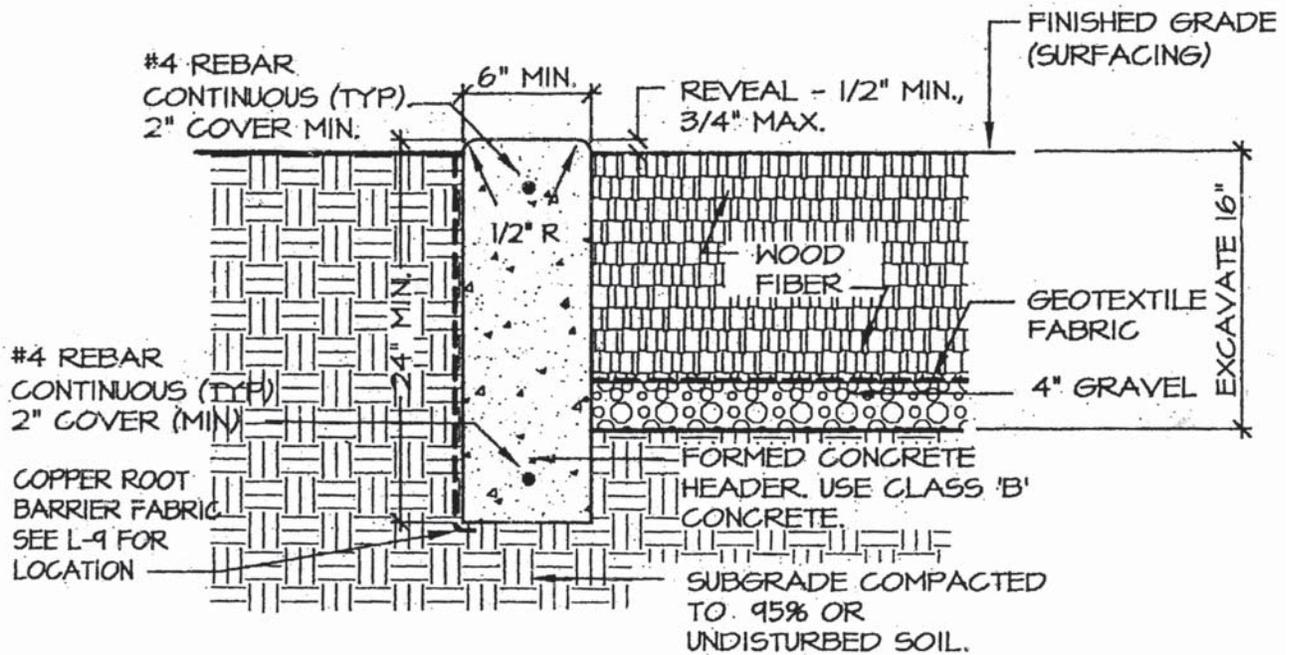


CONCRETE HEADER AT EDGE OF TURF
not to scale

PLAYGROUNDS

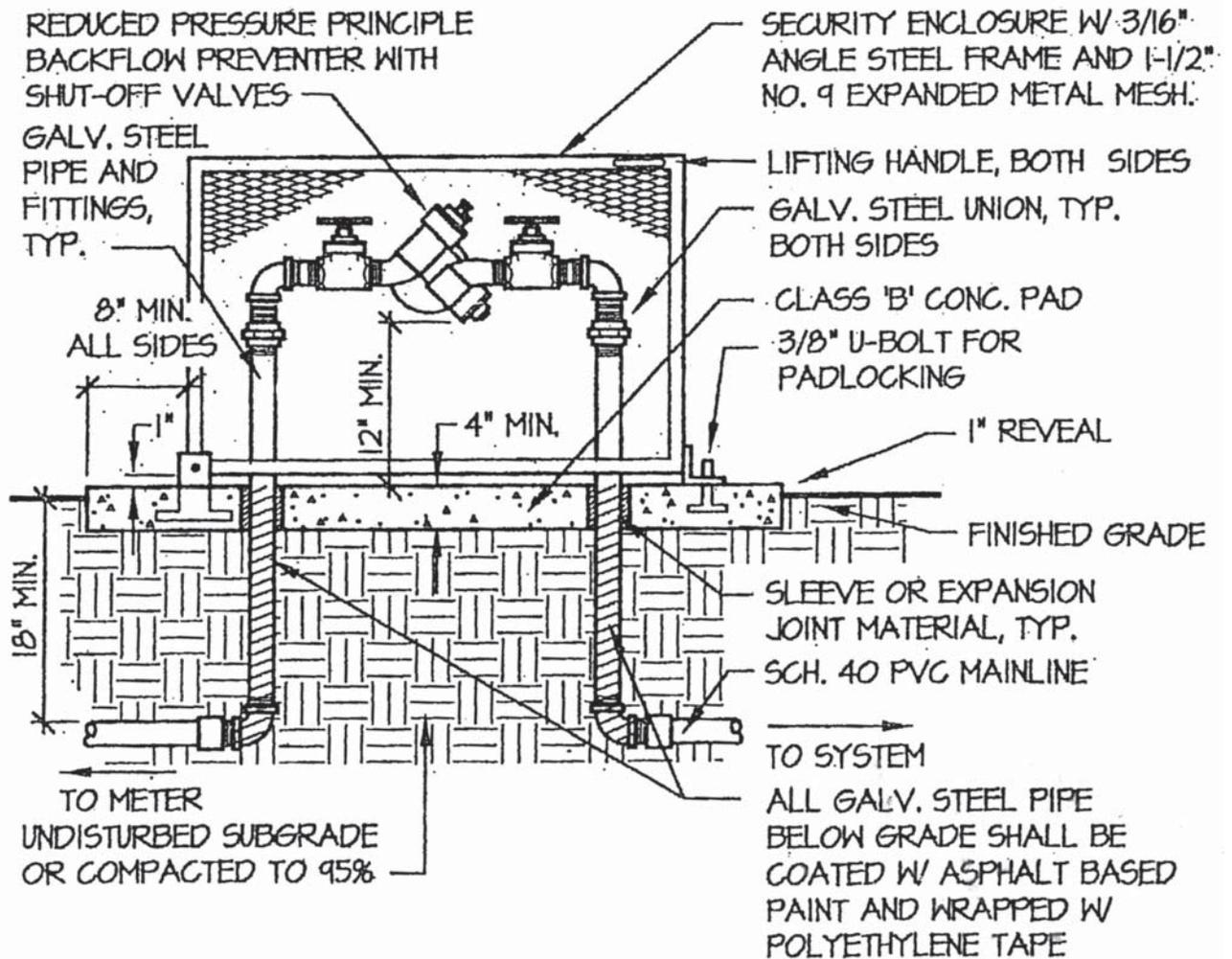
NOTES:

1. PROVIDE EXPANSION JOINTS EVERY 40' MAX. AND CONTROL JOINTS EVERY 10' MAX.
2. TOP OF CONCRETE EDGER SHALL MEET FLUSH WHEREVER IT CONTACTS OTHER PAVEMENT OR CURBS. PROVIDE 1/2" BITUMINOUS JOINT FILLER WHEREVER EDGER MEETS EXISTING CONSTRUCTION.



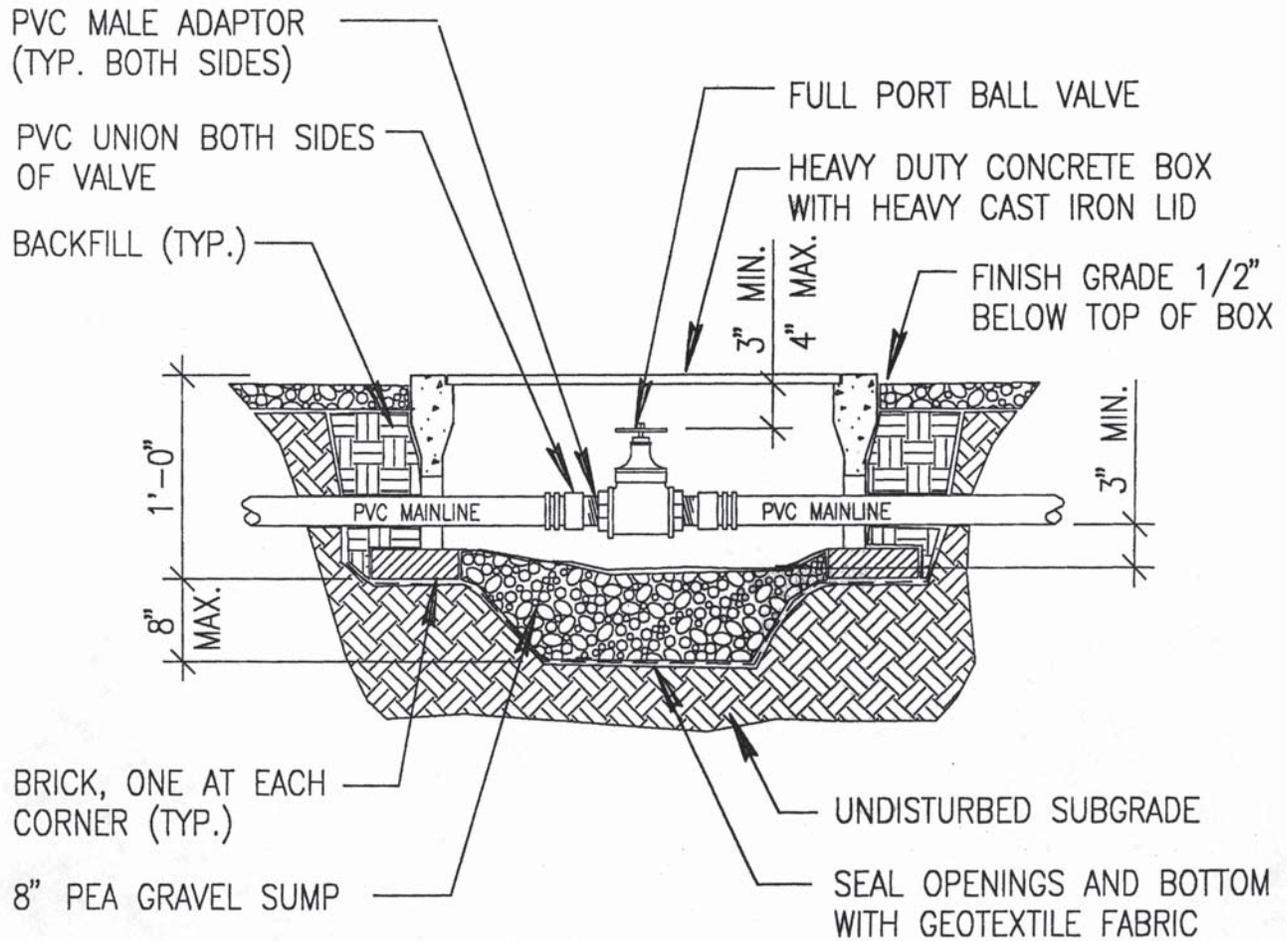
CONCRETE EDGER AT PLAYGROUND
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PLUMBING AND IRRIGATION



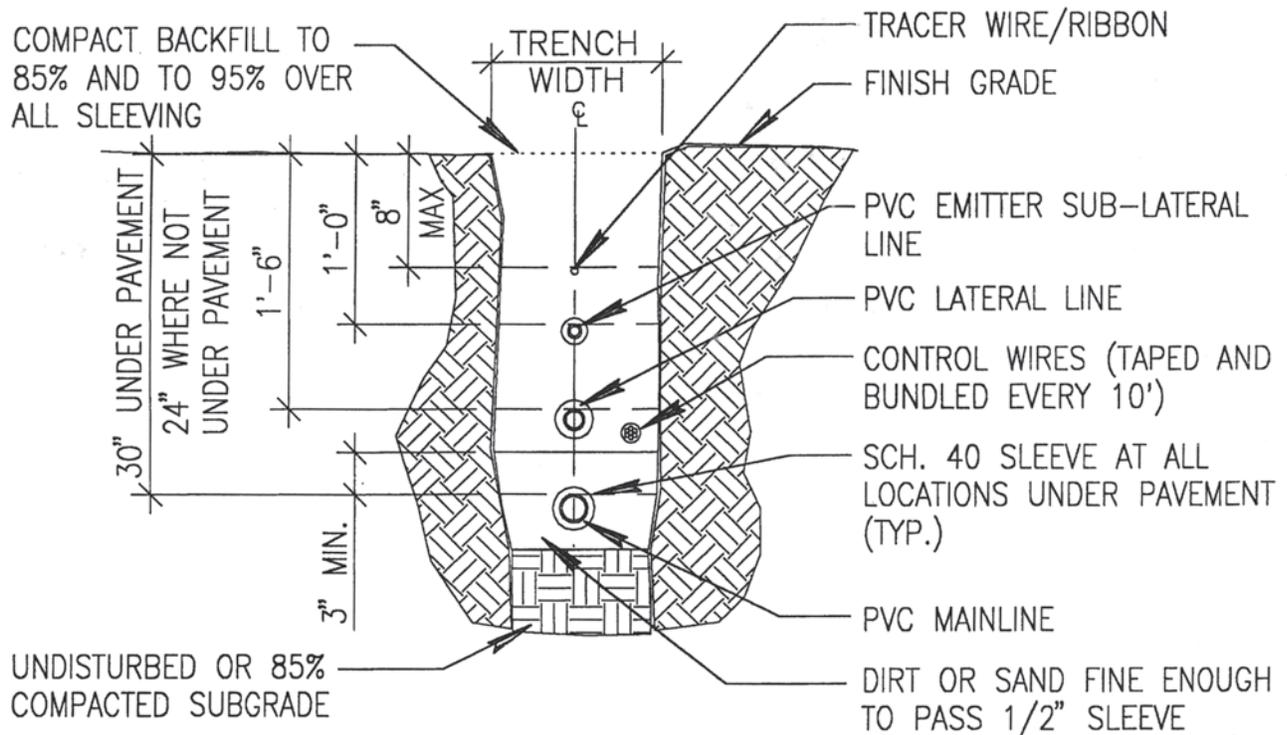
BACKFLOW PREVENTER IN SECURITY ENCLOSURE
not to scale

PLUMBING AND IRRIGATION



ISOLATION VALVE
not to scale

PLUMBING AND IRRIGATION



NOTES:

1. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. NO PIPE OR WIRE SHALL BE LOCATED UNDER PAVING UNLESS IT IS SLEEVED.
3. COLOR TRACER WIRE/RIBBON TO BE RUN ALONG DITCH ALIGNMENT AT CENTERLINE OF PIPES (6"-8" DEEP). AN EXPOSED LOOP IN THE TRACER WIRE/RIBBON SHALL BE PROVIDED AT ALL VALVES, PULL BOXES, AND THE END OF ALL SLEEVES. TRACER WIRE SHALL BE #16 GREEN COATED COPPER WIRE.



IRRIGATION TRENCHING

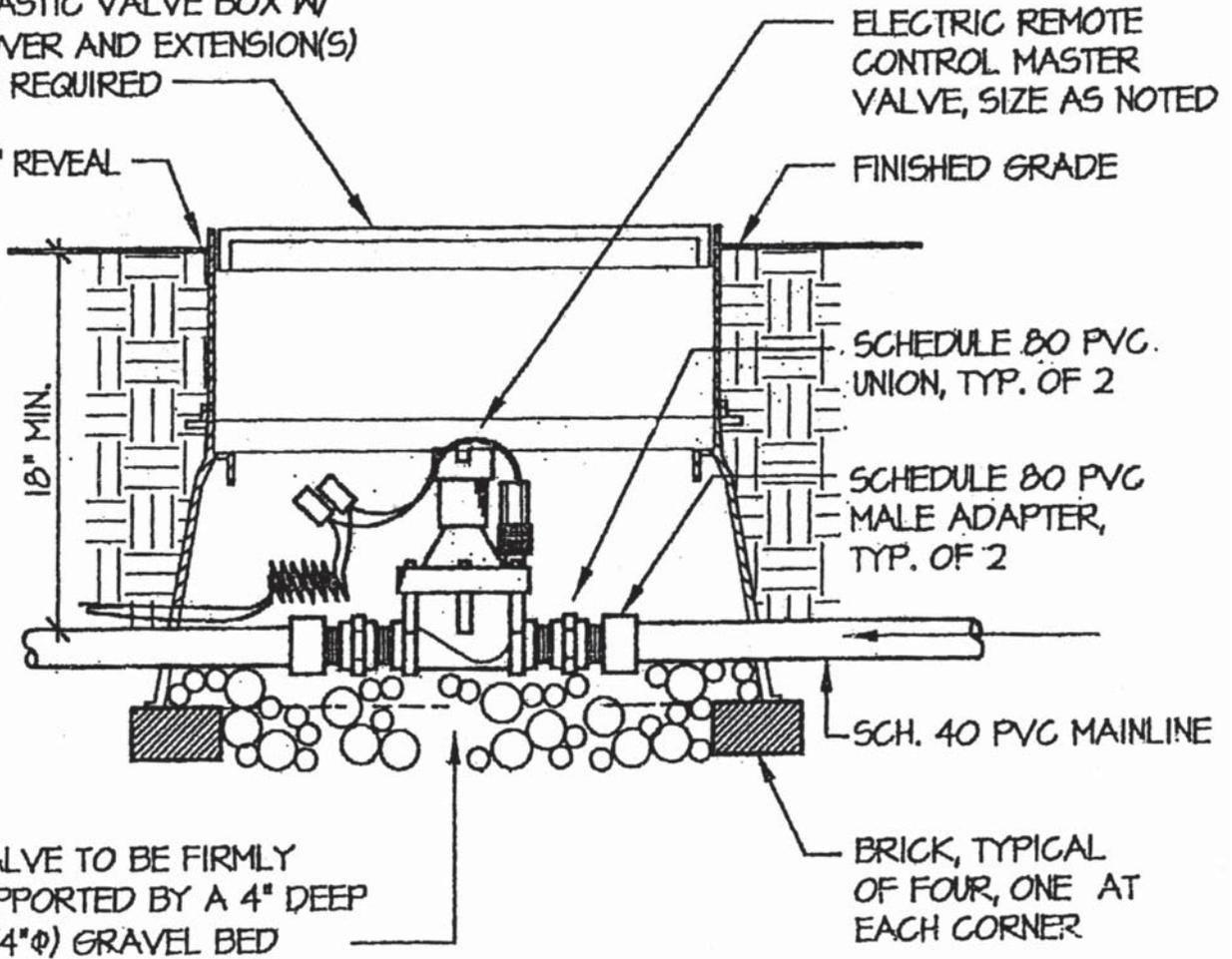
not to scale

PLUMBING AND IRRIGATION

NOTE: USE TEFLON TAPE ON ALL THREADED CONNECTIONS.

PLASTIC VALVE BOX W/
COVER AND EXTENSION(S)
AS REQUIRED

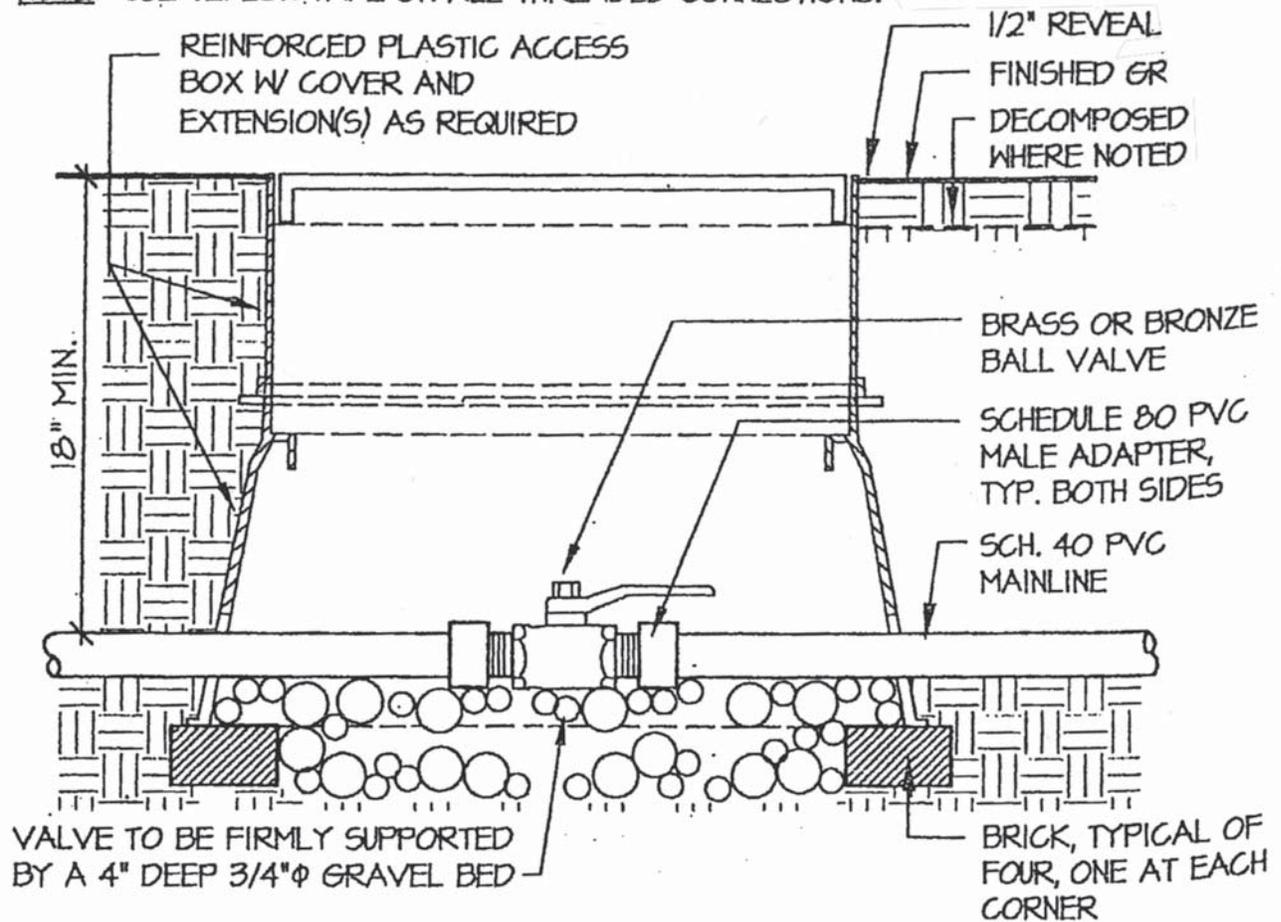
1/2" REVEAL



MASTER VALVE ASSEMBLY
not to scale

PLUMBING AND IRRIGATION

NOTE: USE TEFLON TAPE ON ALL THREADED CONNECTIONS.



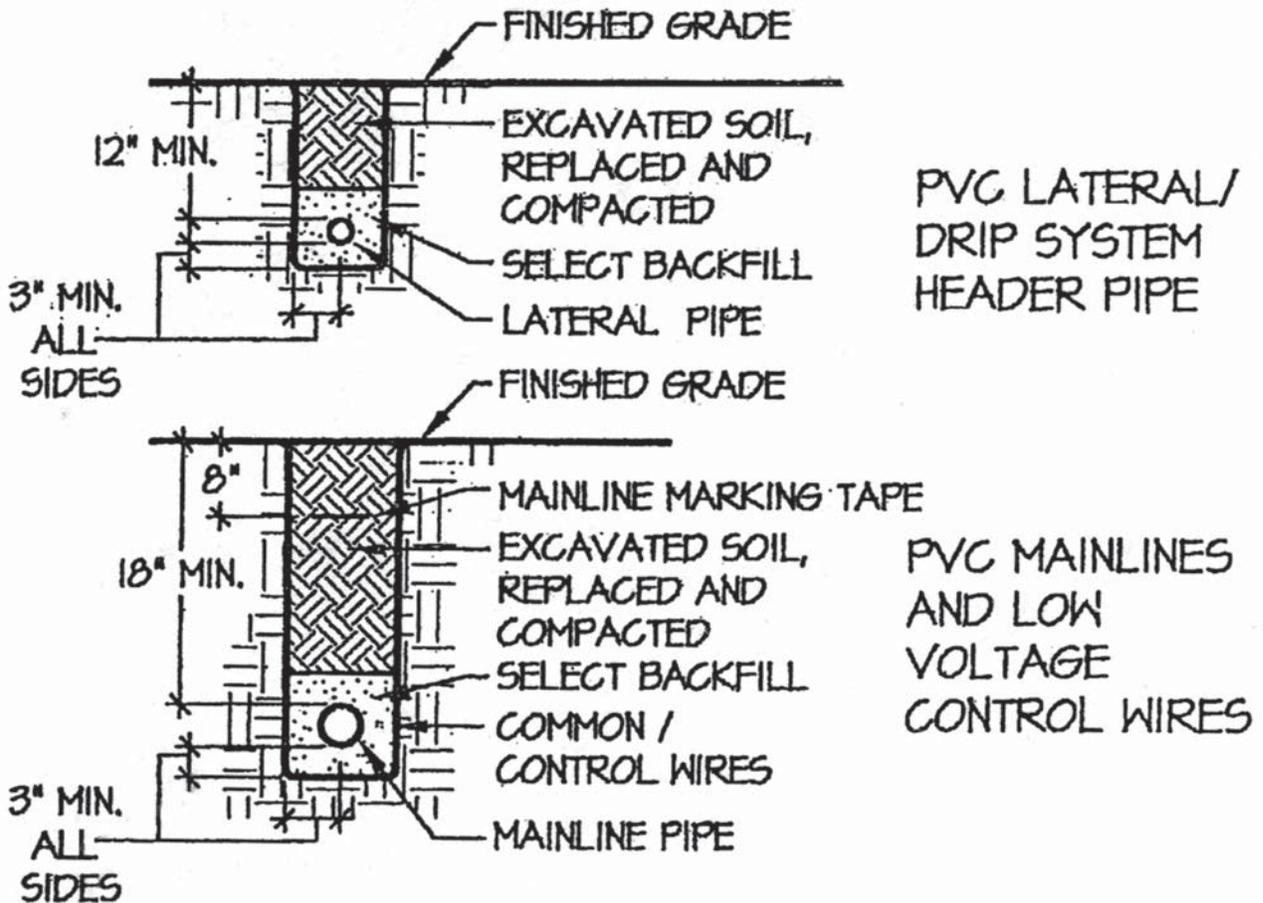
MAINLINE ISOLATION (BALL) VALVE

not to scale

PLUMBING AND IRRIGATION

NOTES:

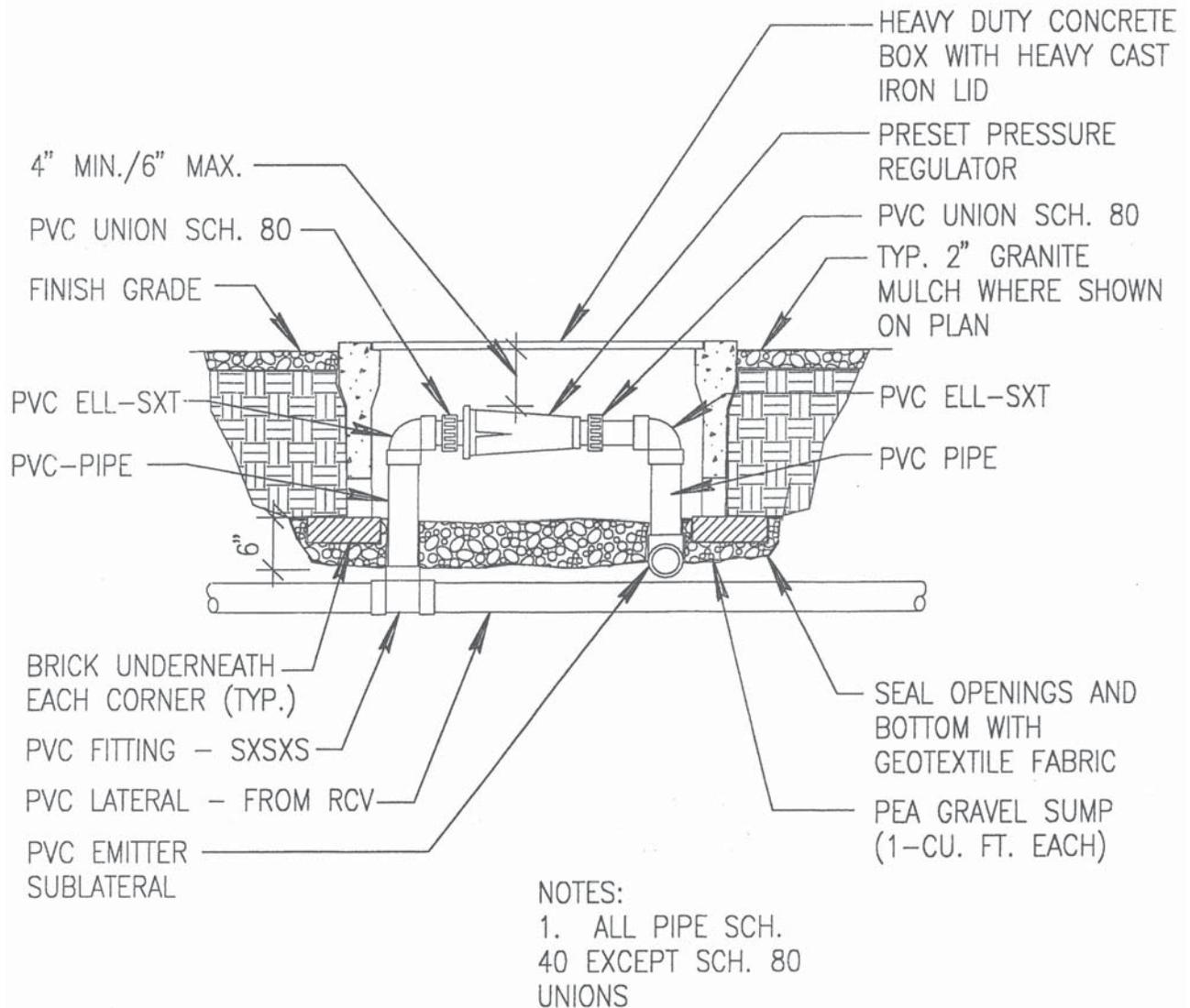
1. SELECT BACKFILL SHALL BE SAND OR SOIL FREE OF ROCKS AND STONES LARGER THAN 1/2" DIA.
2. BACKFILL MATERIAL SHALL BE WATERED IN AND COMPACTED TO DENSITY OF ADJACENT UNDISTURBED SOIL.



TRENCHING AND PIPE INSTALLATION-
 LATERALS AND MAINLINES WITH MARKING TAPE
 not to scale

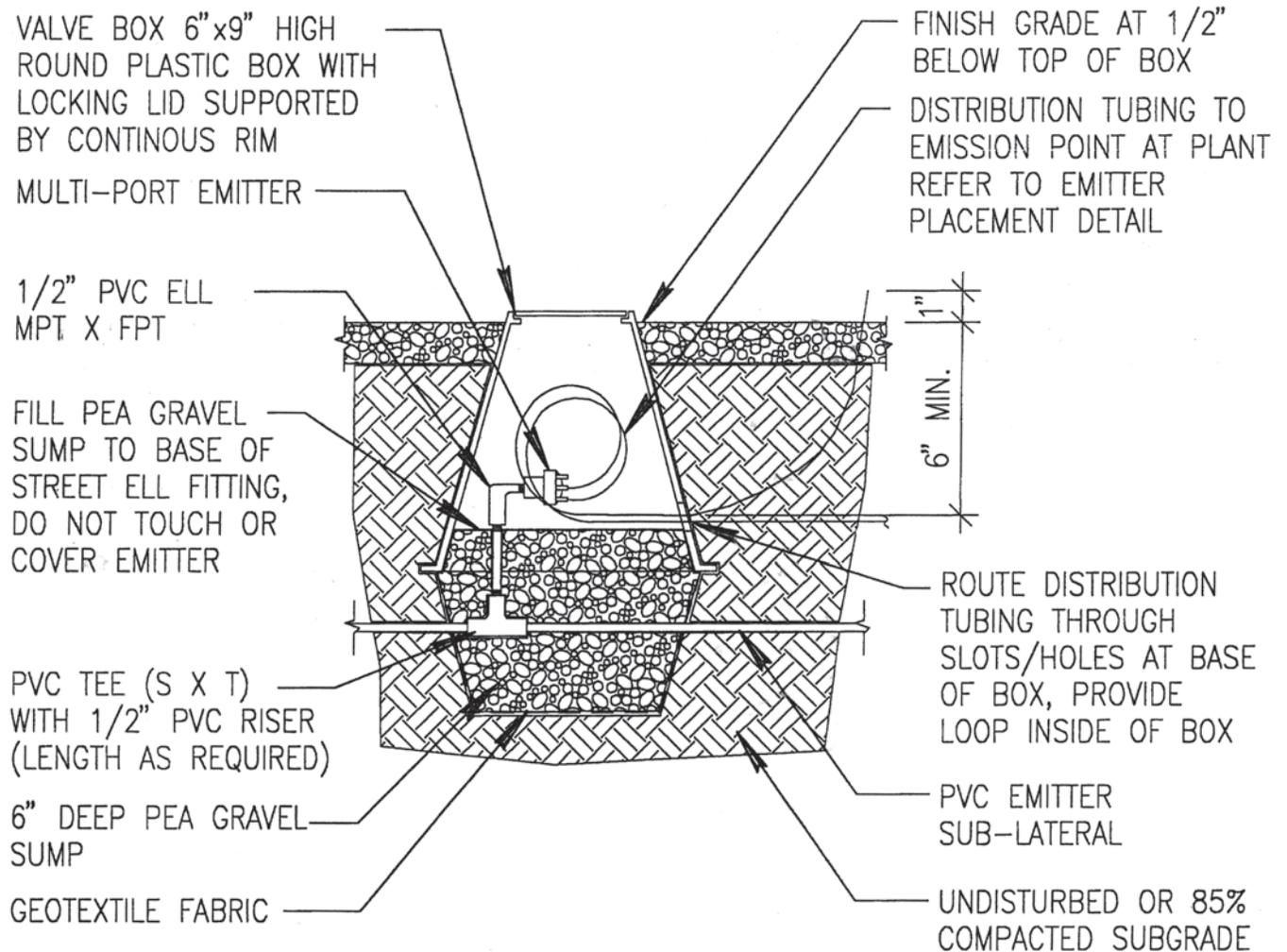


PLUMBING AND IRRIGATION



PRESSURE REGULATOR RISER not to scale

PLUMBING AND IRRIGATION



NOTES:

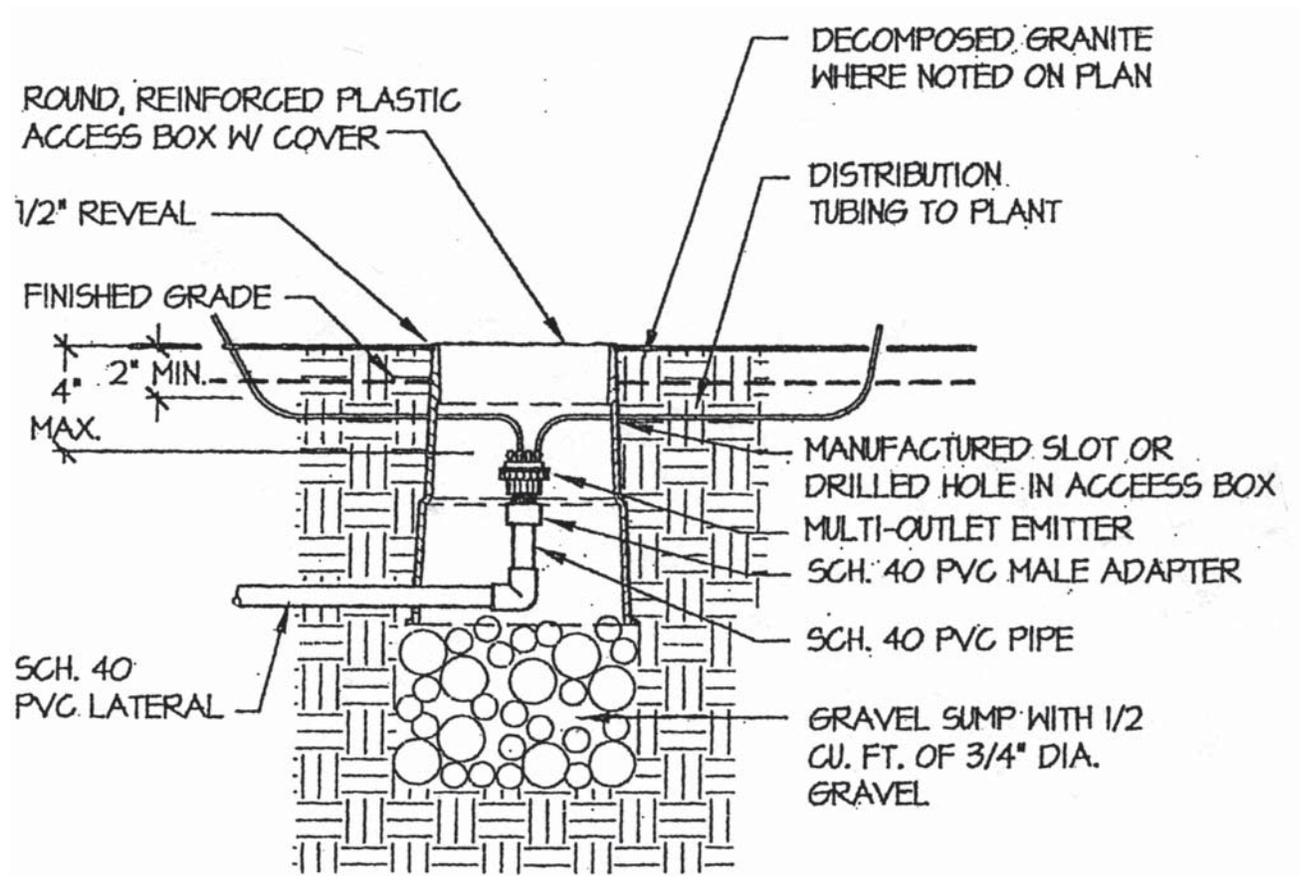
1. REFER TO SPECIFICATIONS FOR PIPING MATERIALS AND REQUIREMENTS.
2. REFER TO PLANT SCHEDULE FOR NUMBER OF OUTLETS AND GPH PER PLANT.



MULTI-OUTLET EMITTER ON PVC LATERAL

not to scale

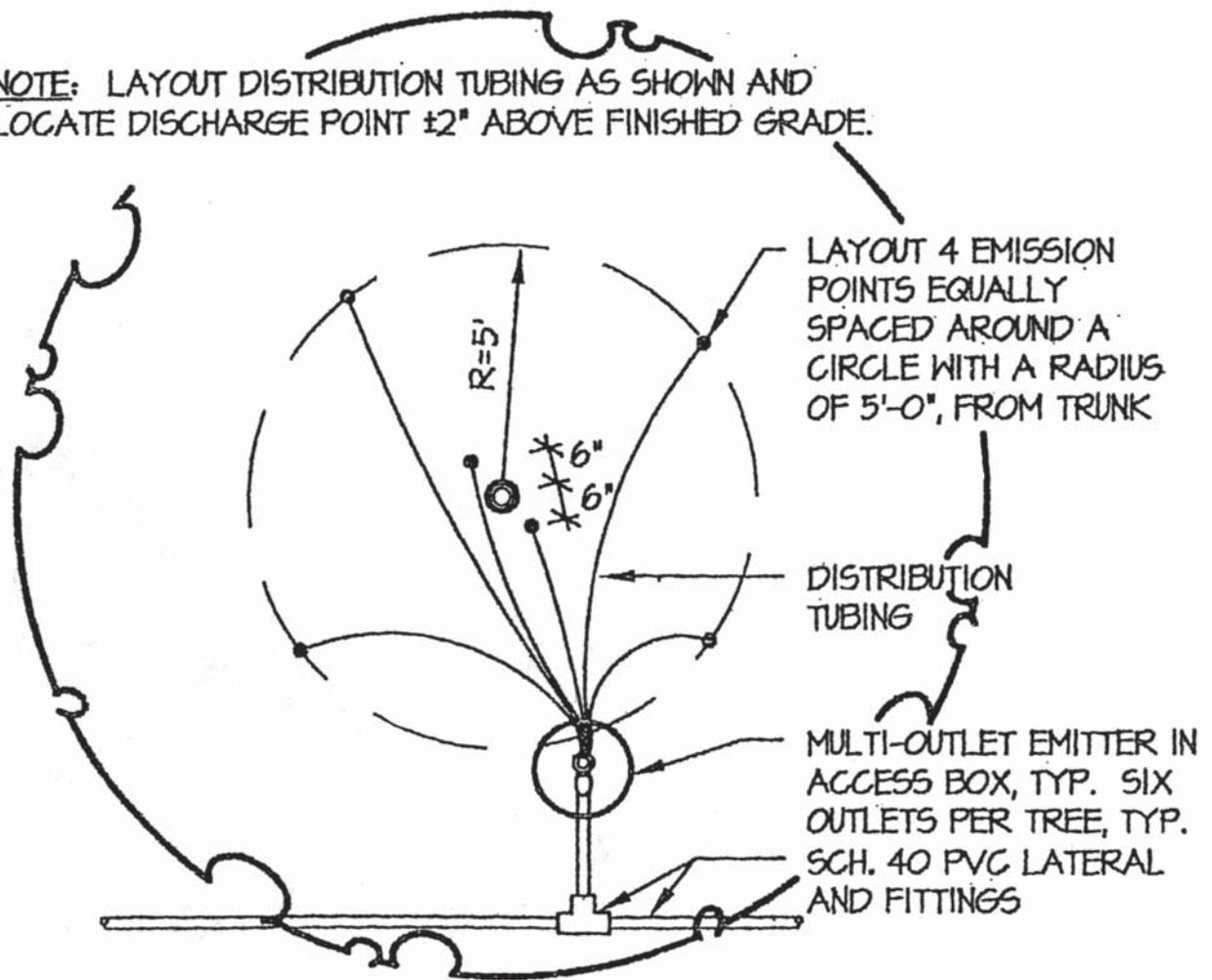
PLUMBING AND IRRIGATION



MULTI-OUTLET EMITTER
not to scale

PLUMBING AND IRRIGATION

NOTE: LAYOUT DISTRIBUTION TUBING AS SHOWN AND LOCATE DISCHARGE POINT $\pm 2"$ ABOVE FINISHED GRADE.

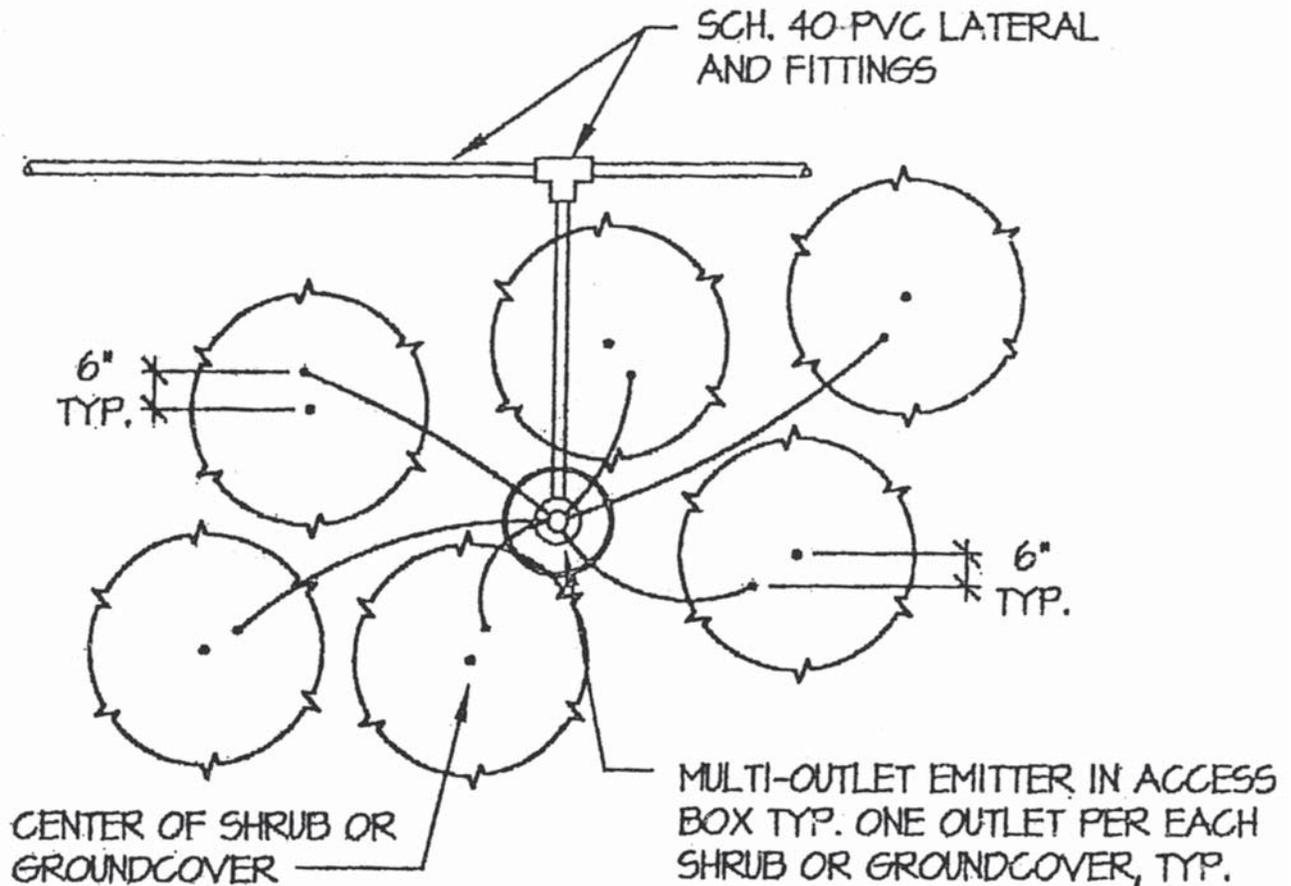


EMITTER DISTRIBUTION LAYOUT AT TREE- SIX OUTLET
not to scale

PLUMBING AND IRRIGATION

NOTES:

1. LENGTH OF DISTRIBUTION TUBING SHALL NOT EXCEED 8'-0".
2. LAYOUT DISTRIBUTION TUBING AS SHOWN AND LOCATE DISCHARGE POINT 4" ABOVE FINISHED GRADE.

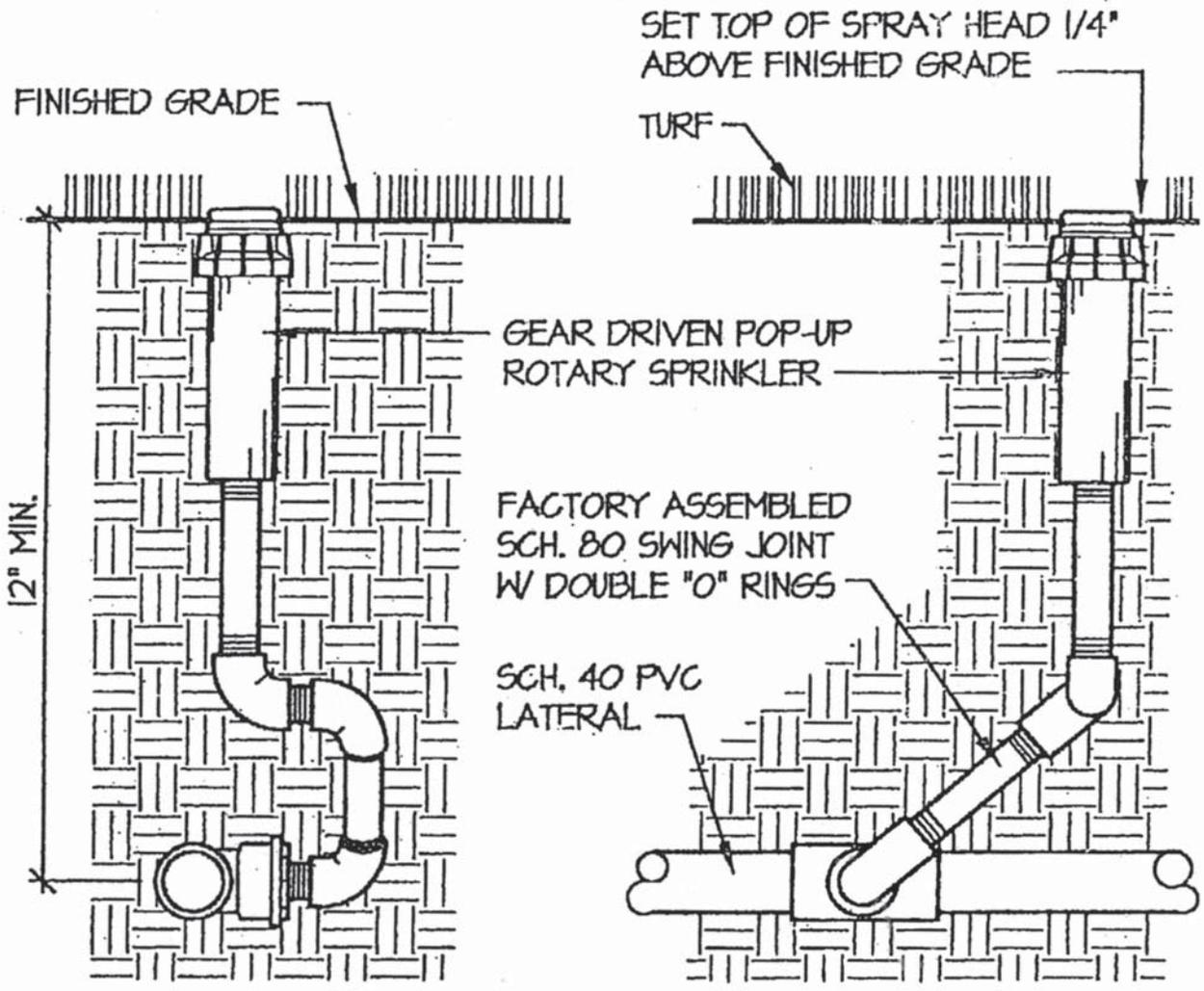


EMITTER DISTRIBUTION TUBING LAYOUT AT SHRUBS
not to scale

PLUMBING AND IRRIGATION

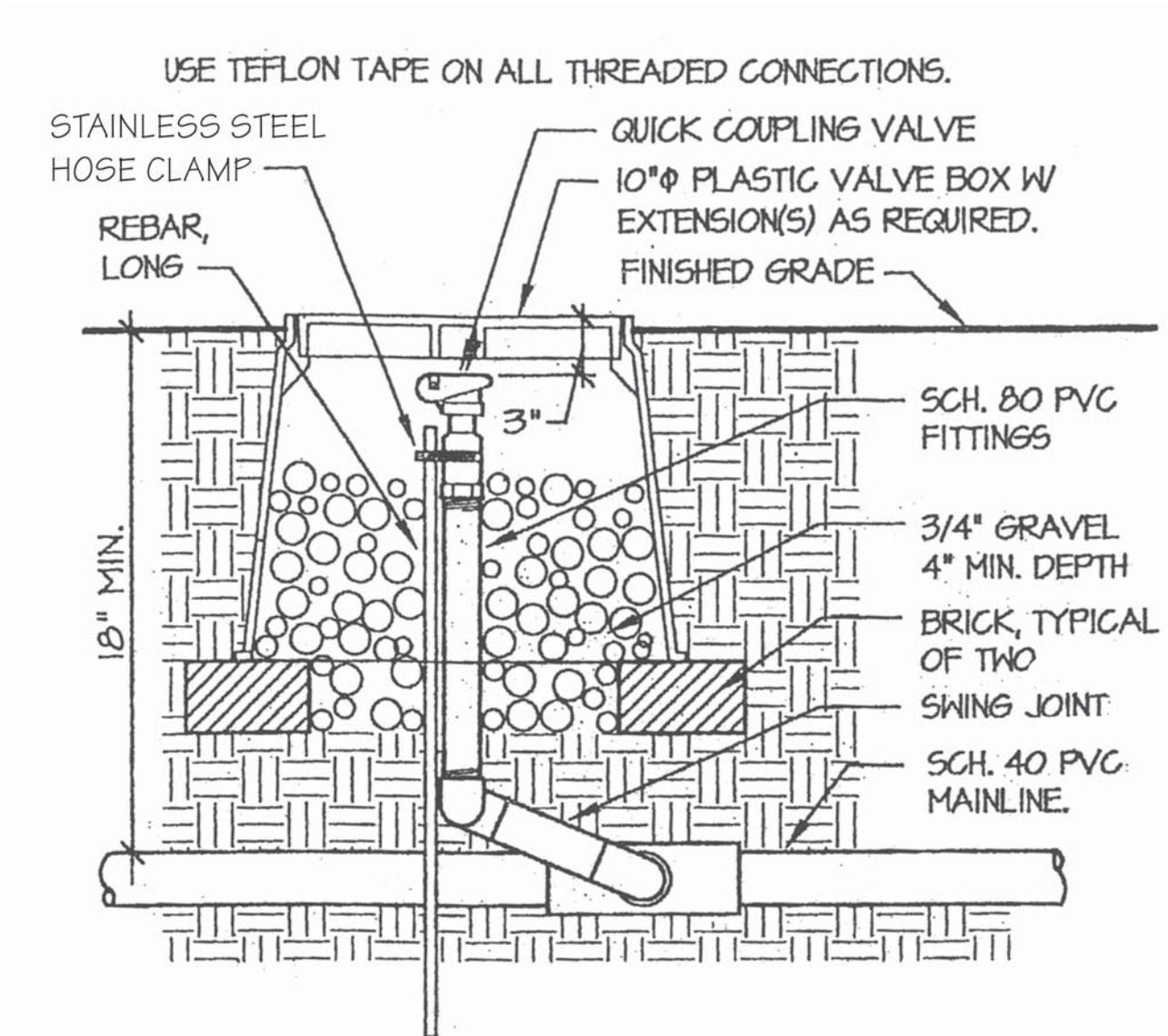
NOTE:

1. SET SPRINKLER HEAD A MINIMUM OF 2" FROM ANY ADJACENT PAVING OR EDGER.
2. SWING JOINT: PIPE SIZE EQUAL TO SPRINKLER INLET SIZE



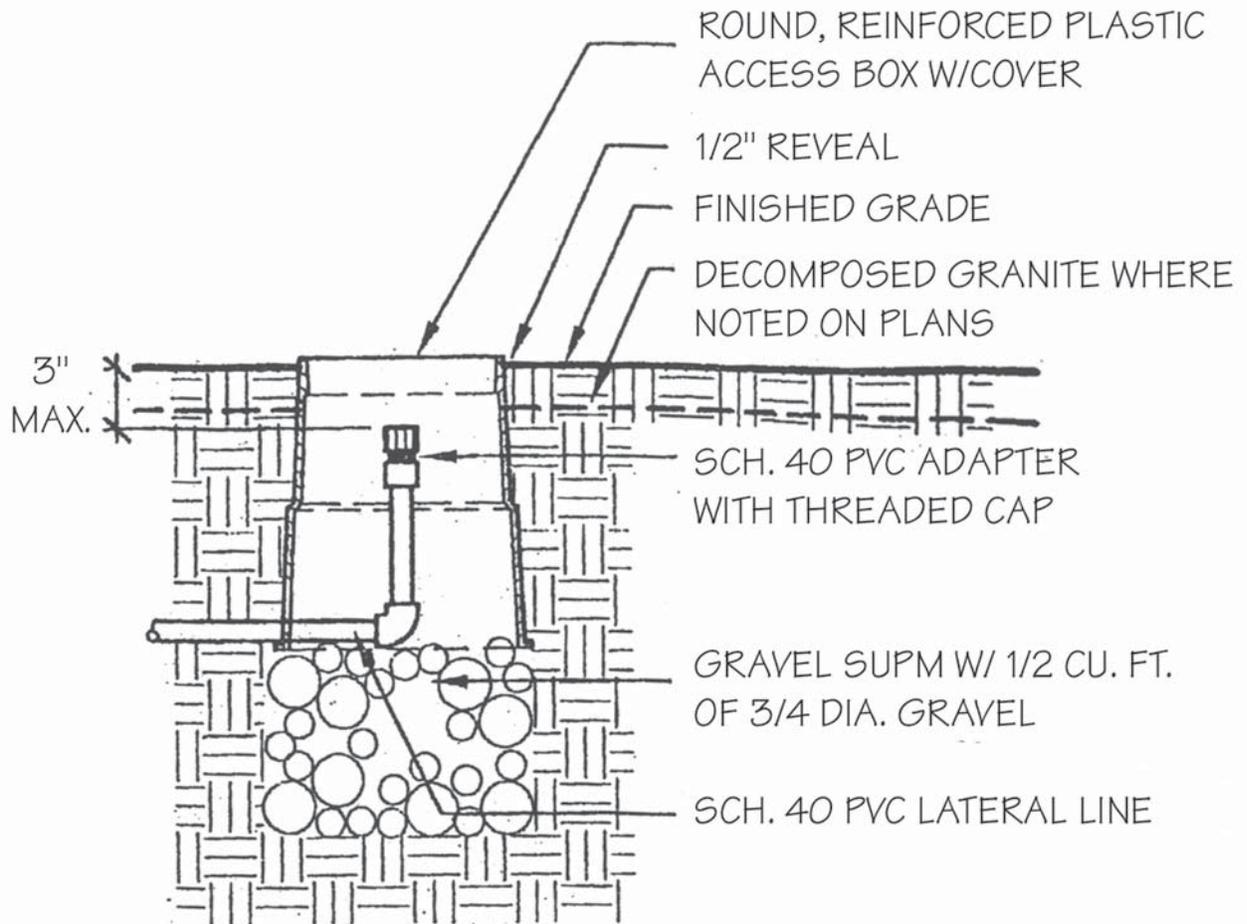
GEAR DRIVEN POP-UP SPRAY
not to scale

PLUMBING AND IRRIGATION



QUICK COUPLING VALVE ASSEMBLY
not to scale

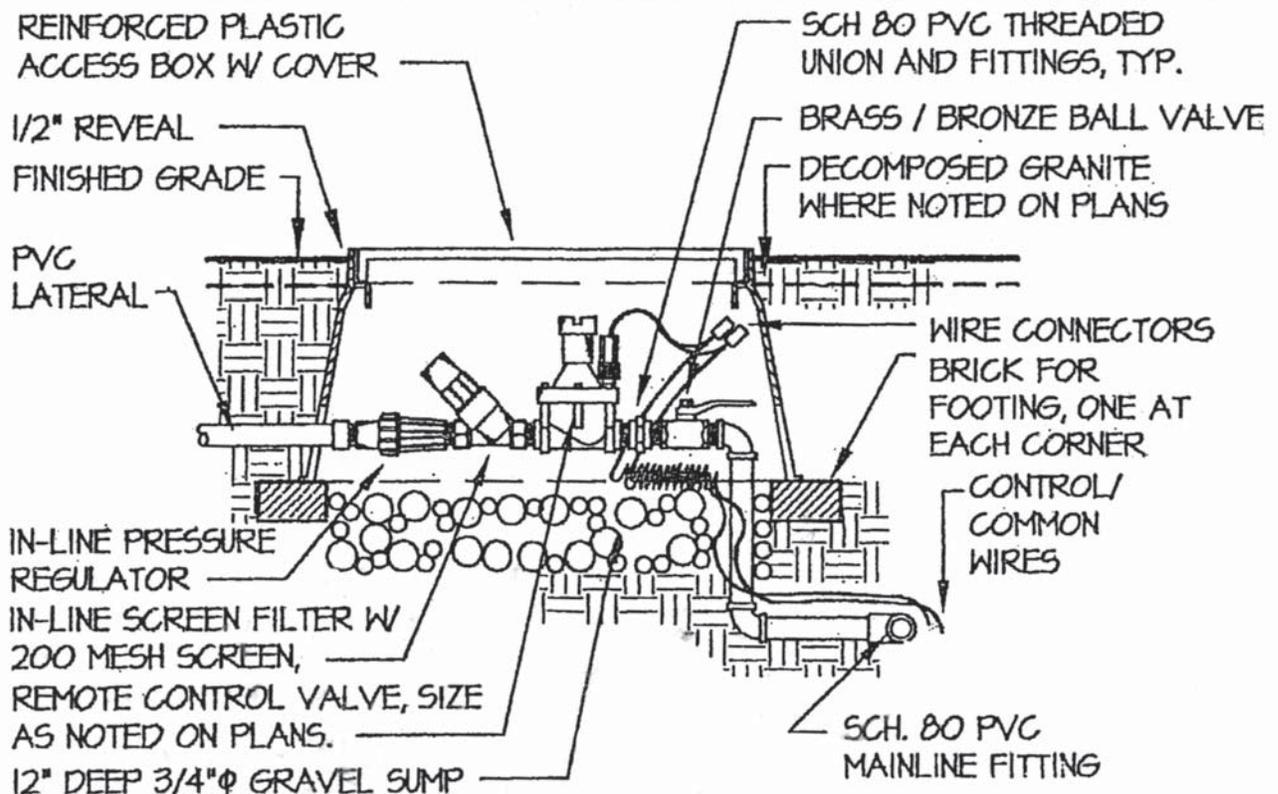
PLUMBING AND IRRIGATION



FLUSH CAP (PVC) IN ACCESS BOX
not to scale

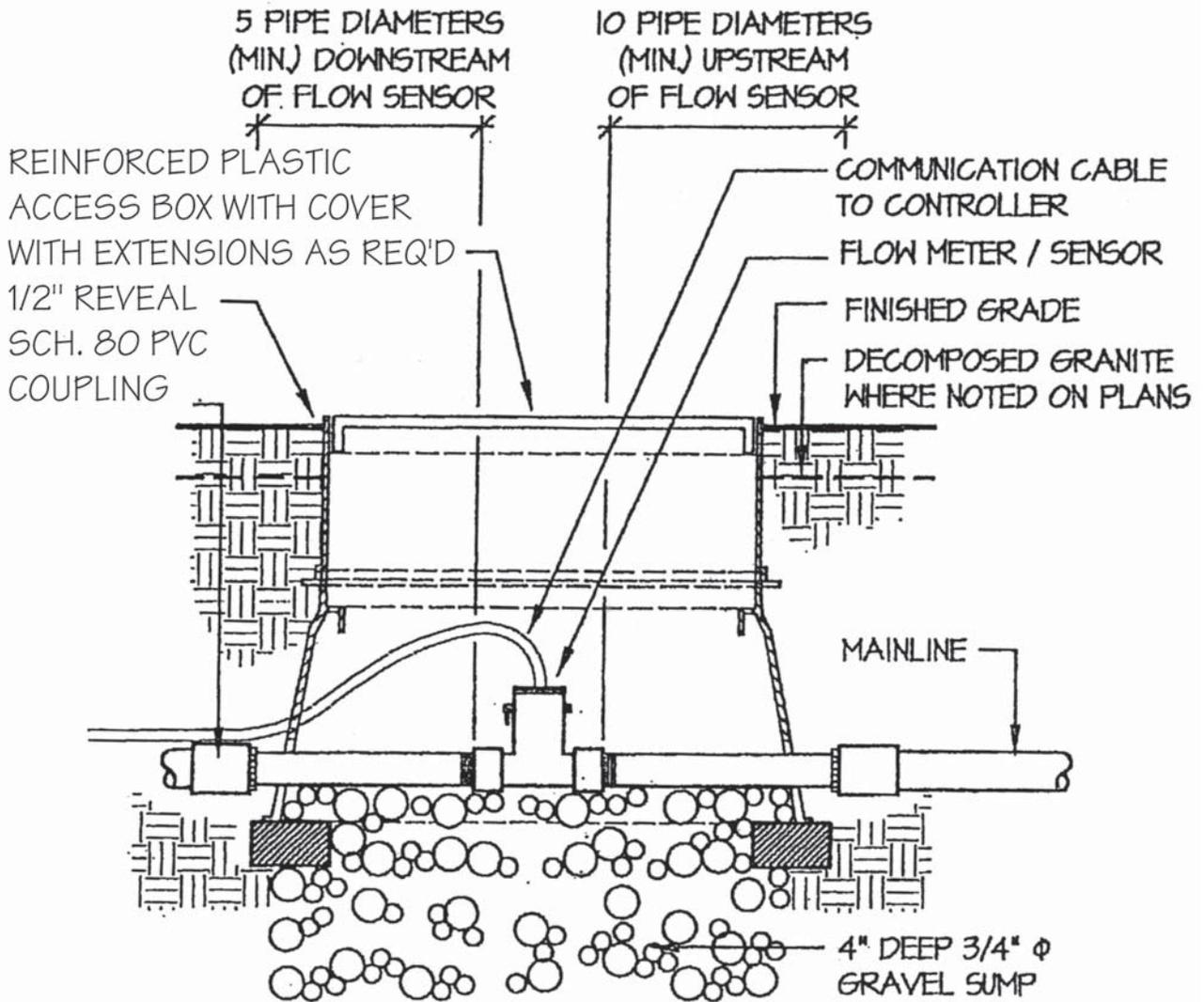
PLUMBING AND IRRIGATION

- NOTES:**
1. ALL WIRES TO BE INSTALLED PER LOCAL CODE. TAPE AND BUNDLE WIRES EVERY 20'. PROVIDE EXPANSION COIL AT EACH WIRE CONNECTION IN VALVE BOX (WRAP AROUND 1/2" ϕ PIPE 15 TIMES).
 2. COMPACT SOIL AROUND VALVE BOX TO SAME DENSITY AS ADJACENT UNDISTURBED SOIL.
 3. ALL THREADED PVC JOINTS SHALL BE WRAPPED WITH TEFLON TAPE.



REMOTE CONTROL VALVE ASSEMBLY - DRIP ZONE
not to scale

PLUMBING AND IRRIGATION

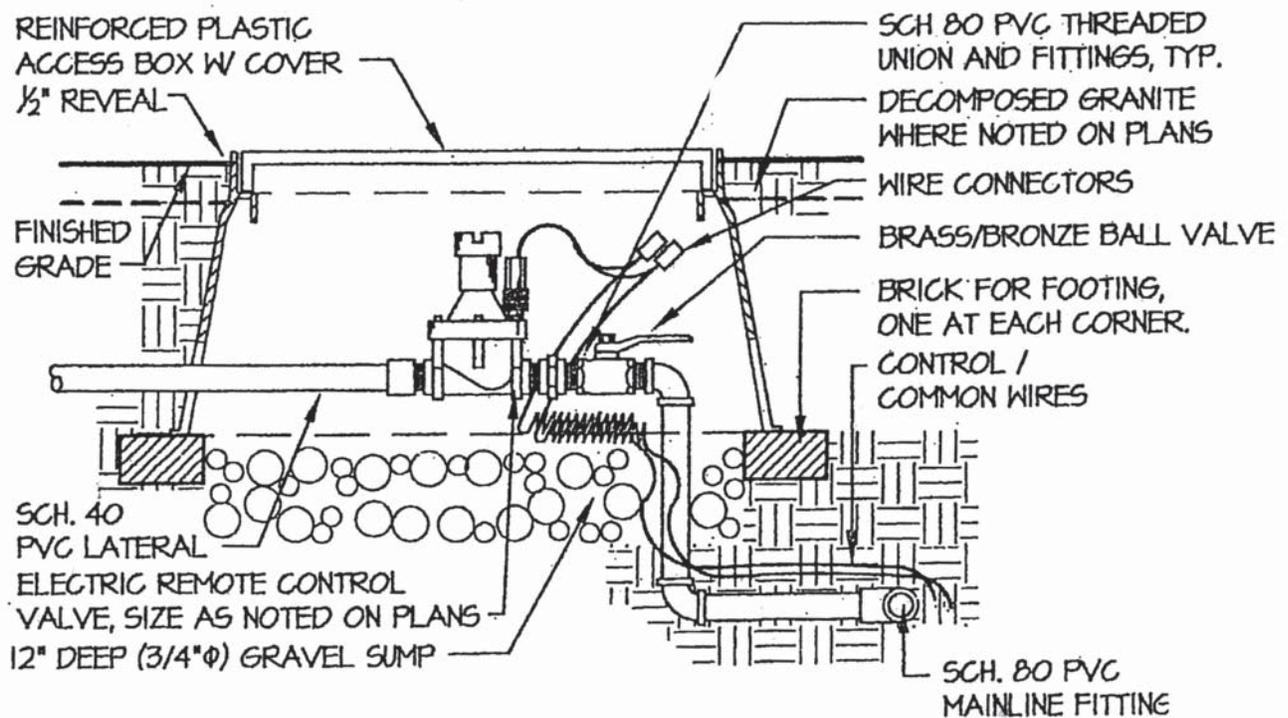


FLOW METER / SENSOR ASSEMBLY
not to scale

PLUMBING AND IRRIGATION

NOTES:

1. ALL WIRES TO BE INSTALLED PER LOCAL CODE. TAPE AND BUNDLE WIRES EVERY 20'. PROVIDE EXPANSION COIL AT EACH WIRE CONNECTION IN VALVE BOX (WRAP AROUND 1/2" ϕ PIPE 15 TIMES).
2. COMPACT SOIL AROUND VALVE BOX TO SAME DENSITY AS ADJACENT UNDISTURBED SOIL.
3. ALL THREADED PVC JOINTS SHALL BE WRAPPED WITH TEFLON TAPE.



SPRAY ZONE REMOTE CONTROL VALVE
not to scale

PLUMBING AND IRRIGATION

WRAP #12 GA. GALVANIZED WIRE AROUND EACH END OF SLEEVE (10 WRAPS MIN.) AND EXTEND TO SURFACE AS A LOCATING DEVICE

FINISHED GRADE

24" MIN.

WALKWAY, TYPICAL

12" MIN. FOR
LATERALS
18" MIN. FOR
MAINLINES

SCH. 40 PVC
PIPE SLEEVE

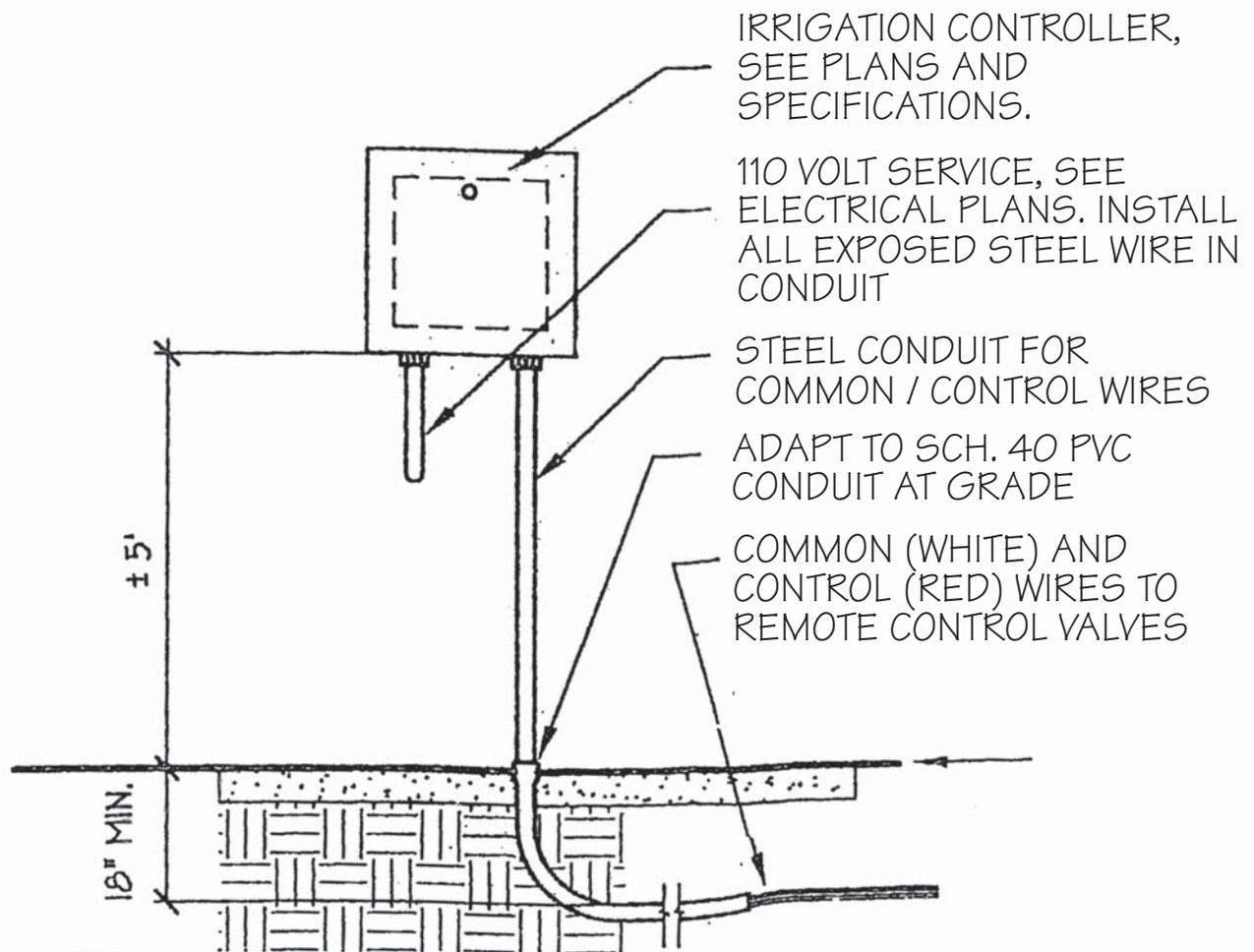
SELECT BACKFILL WITHIN 3" OF SLEEVE. SEE NOTES ABOVE.



SLEEVE UNDER WALKWAY
not to scale

PLUMBING AND IRRIGATION

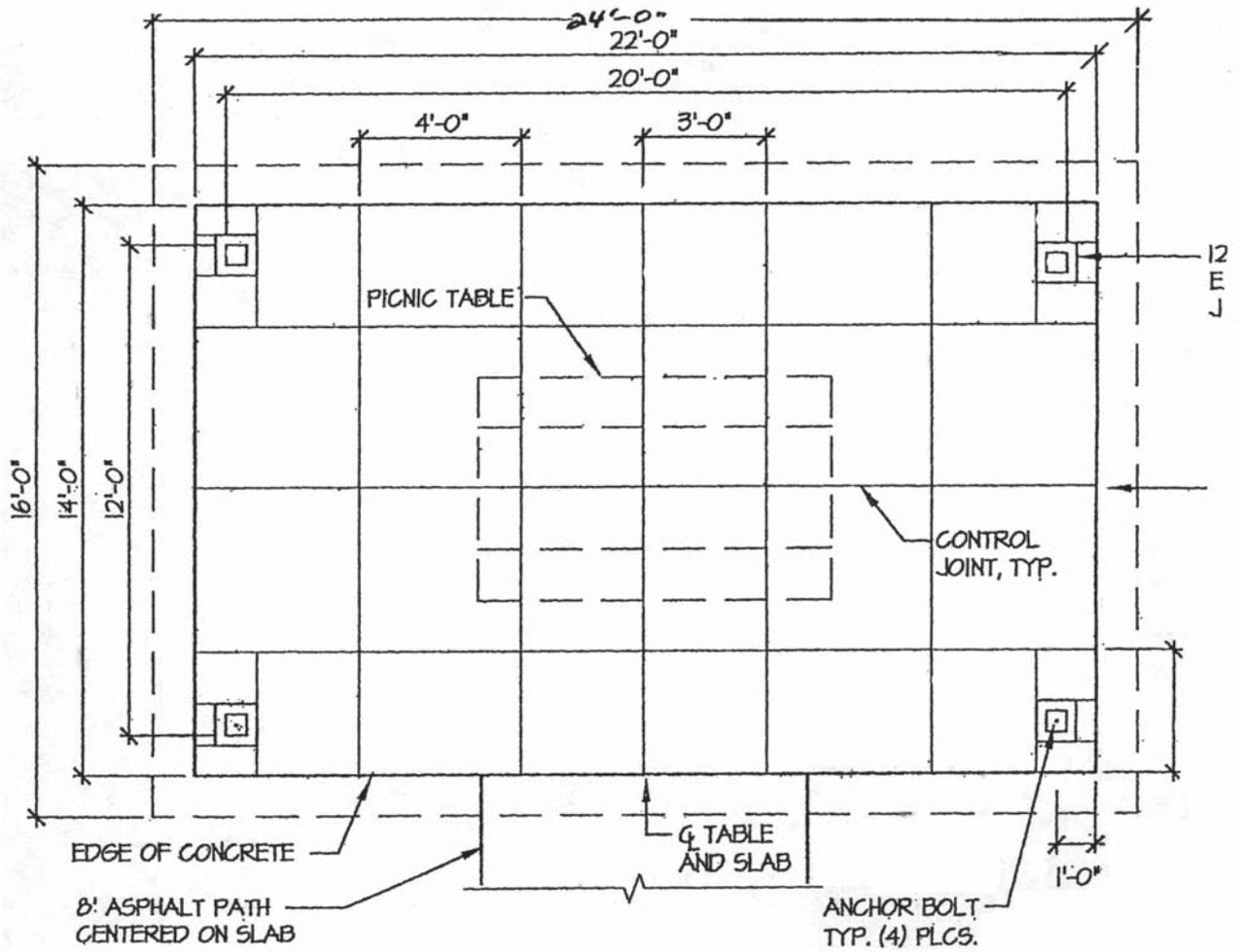
NOTE: COORDINATE INSTALLATION OF IRRIGATION CONTROLLER WITH OWNER'S REPRESENTATIVE. BEFORE INSTALLATION, OBTAIN APPROVAL FOR CONTROLLER LOCATION AND WIRE ROUTING.



IRRIGATION CONTROLLER INSTALLATION

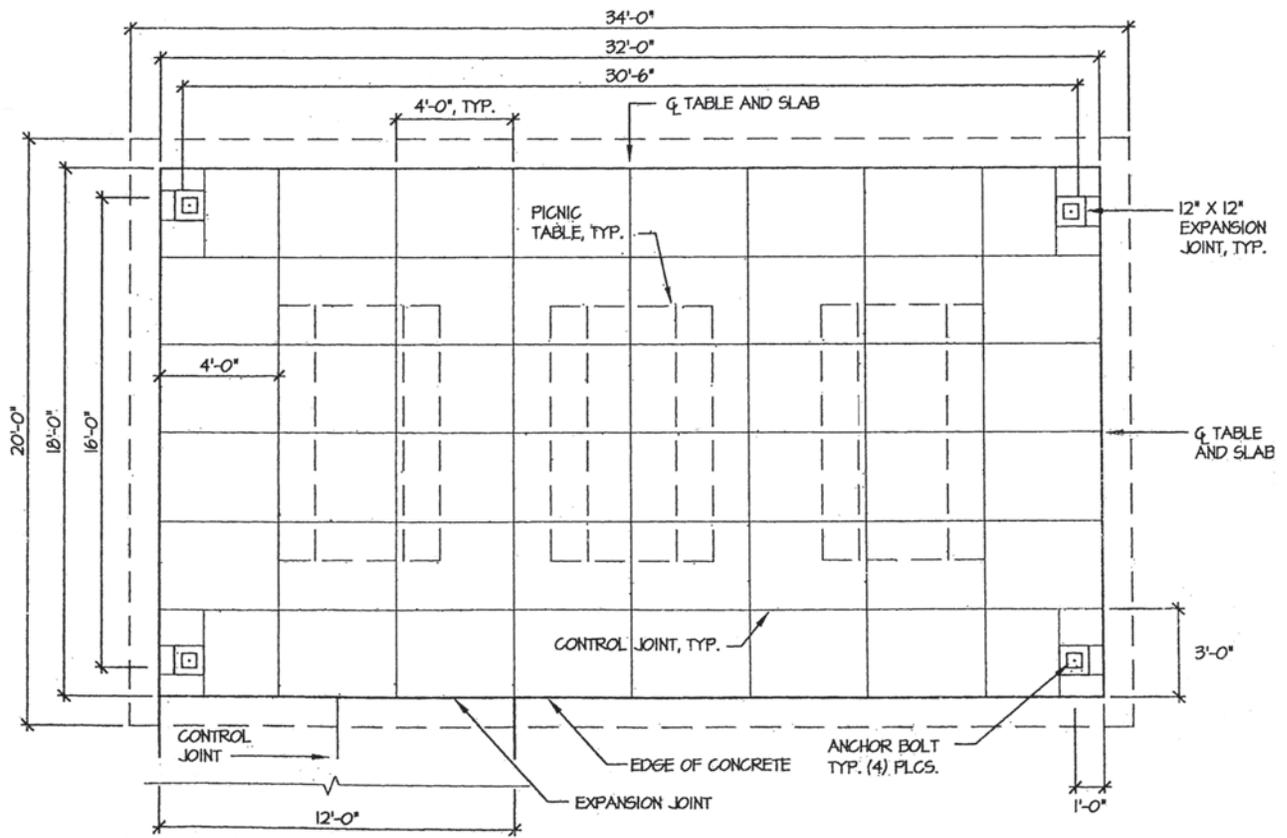
not to scale

RAMADAS



LAYOUT PLAN FOR 16' X 24' RAMADA SLAB
not to scale

RAMADAS

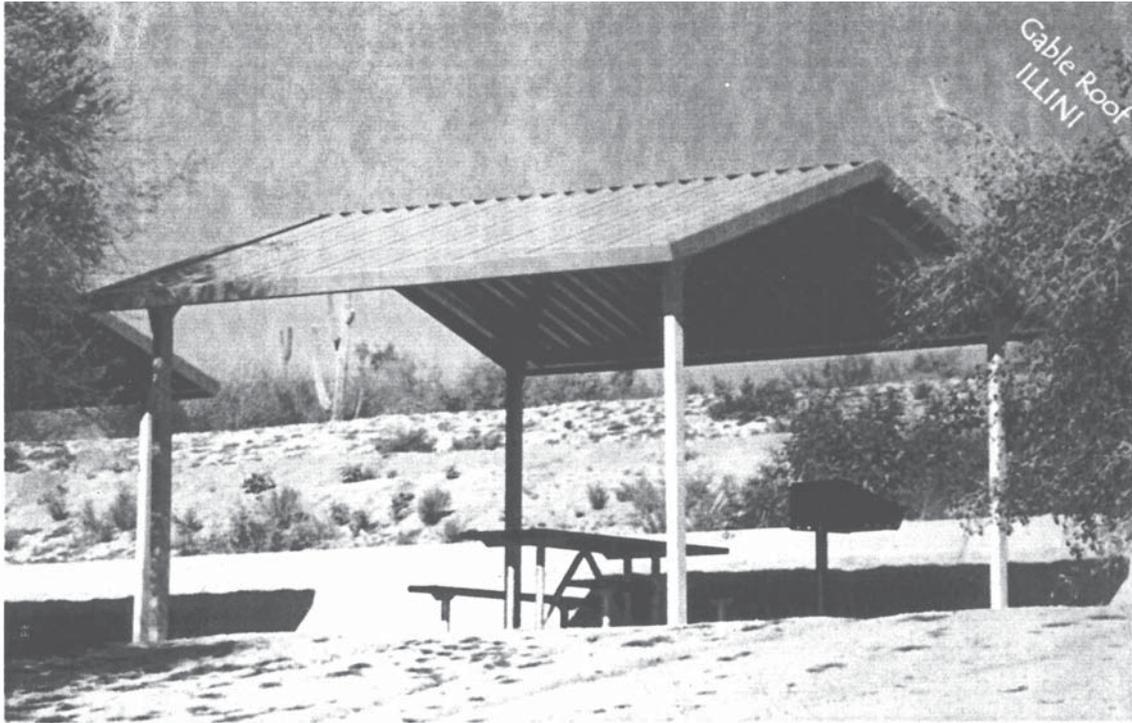


LAYOUT PLAN FOR 18' x 32' RAMADA SLAB



LAYOUT PLAN FOR 16' X 24' RAMADA SLAB
not to scale

RAMADAS



Illini • Tubular

Illini • Tubular

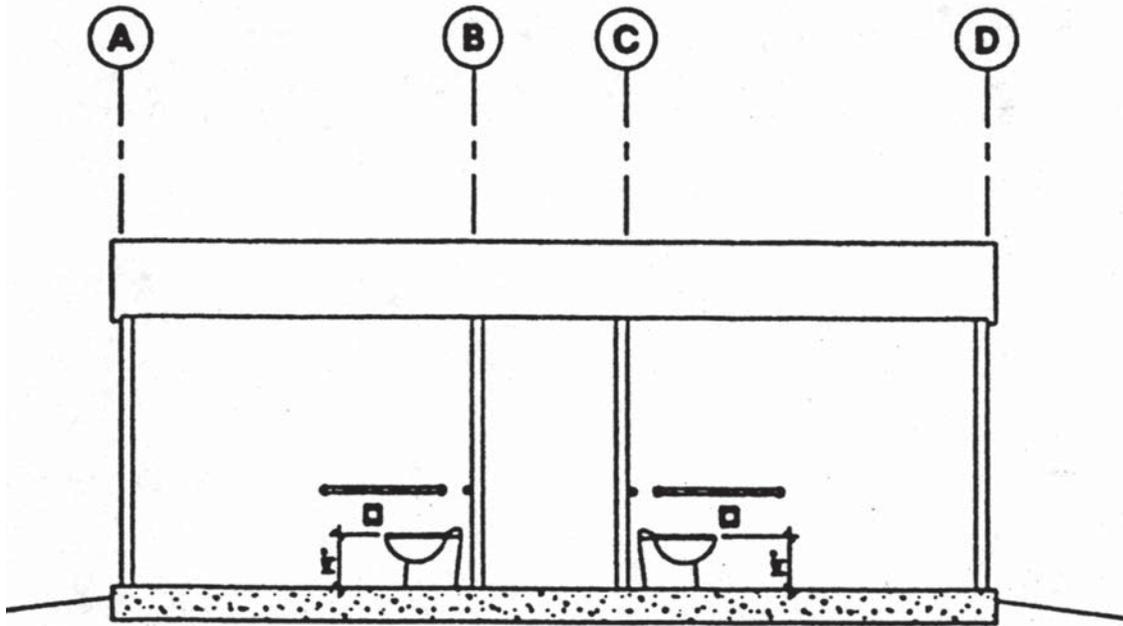


Illini Shelters	
	Tubular
6' x 20'	X
10' x 20'	X
12' x 12'	X
16' x 16'	X
16' x 24'	X
20' x 20'	X
20' x 34'	X
30' x 40'	X
30' x 60'	X
40' x 40'	X
40' x 60'	X
50' x 60'	
50' x 70'	X
50' x 84'	X

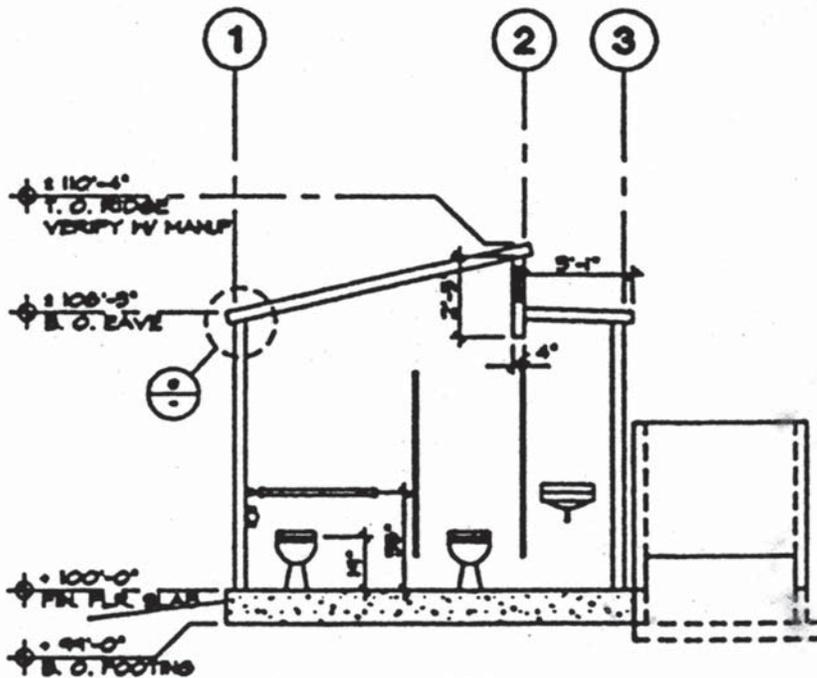


RAMADA DESIGNS
not to scale

RESTROOMS

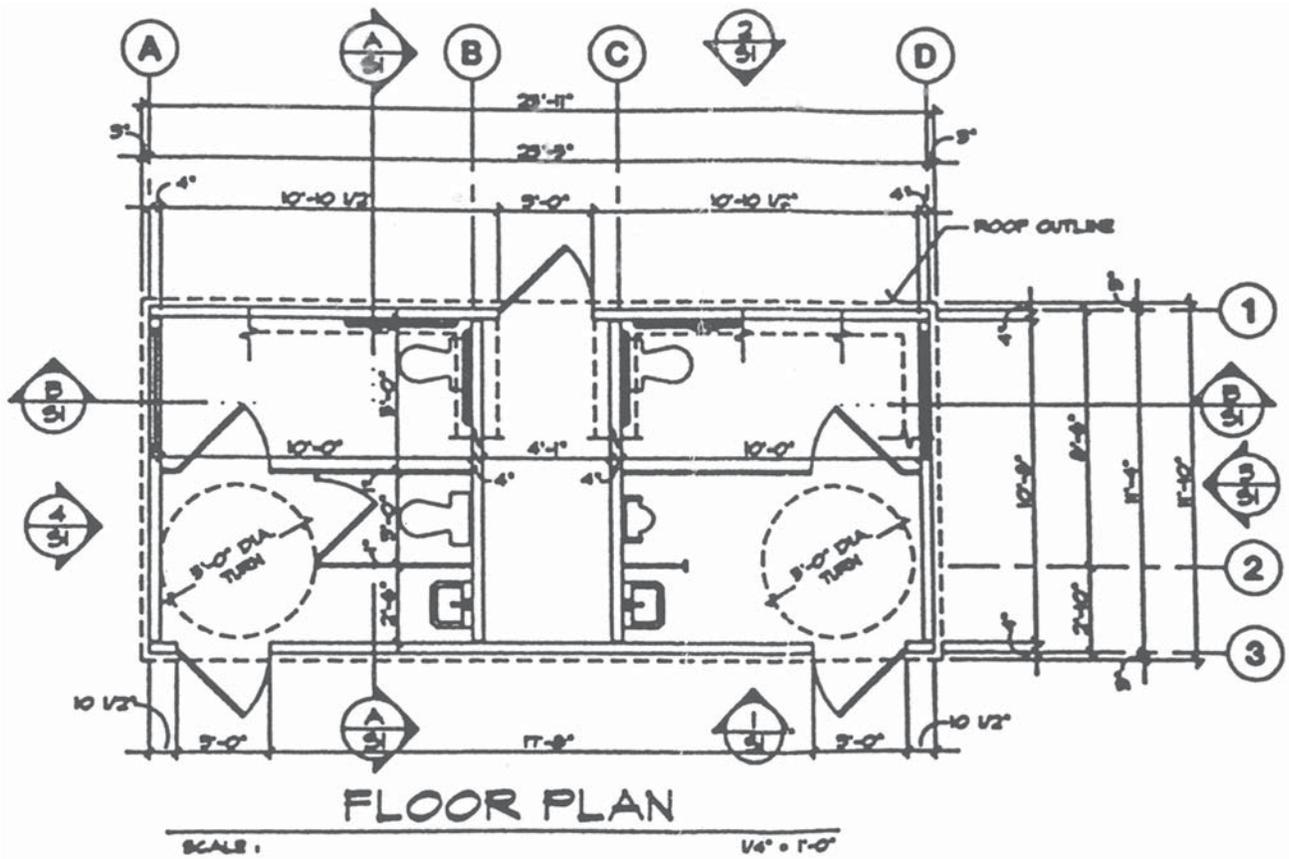


NOTE:
TOILET ACCESSORIES TO
BE PER ADA GUIDELINES,
TYPICAL.



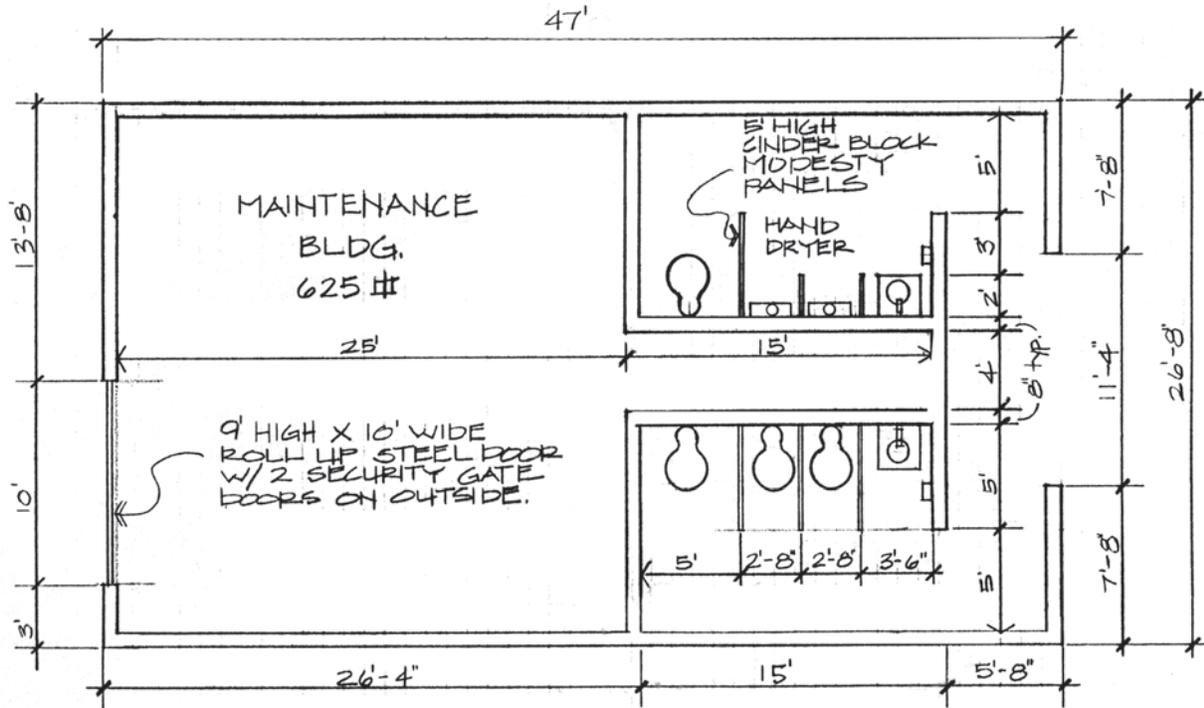
BUILDING SECTION- TWO VIEWS
not to scale

RESTROOMS



RESTROOM FLOOR PLAN
not to scale

RESTROOMS



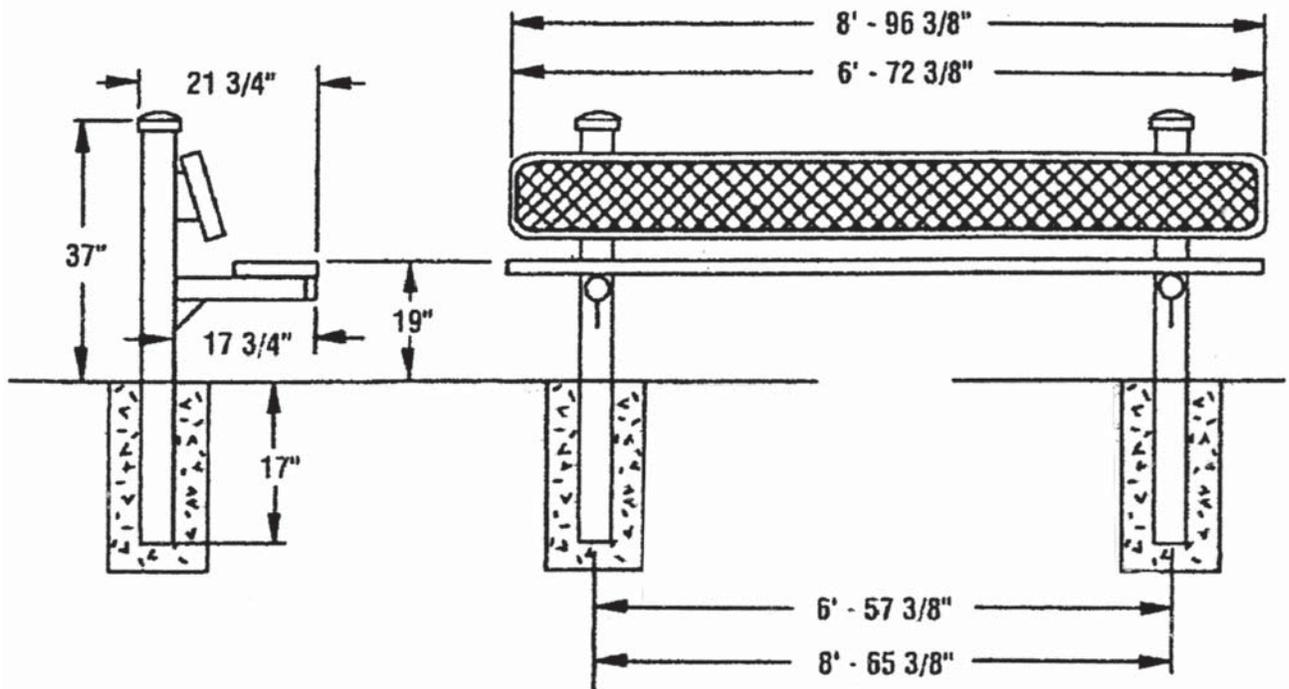
NOTES:

1. ALL EXTERIOR WALLS TO BE SPLIT FACE BLOCK.
2. ALL INTERIOR WALLS TO BE SMOOTH CINDER BLOCK - PAINTED OR COLOR TO MATCH EXTERIOR WALLS.
3. ALL FIXTURES TO BE WALL MOUNTED INSTITUTIONAL STAINLESS AND SHALL MEET ALL HANDICAP SPECIFICATIONS.



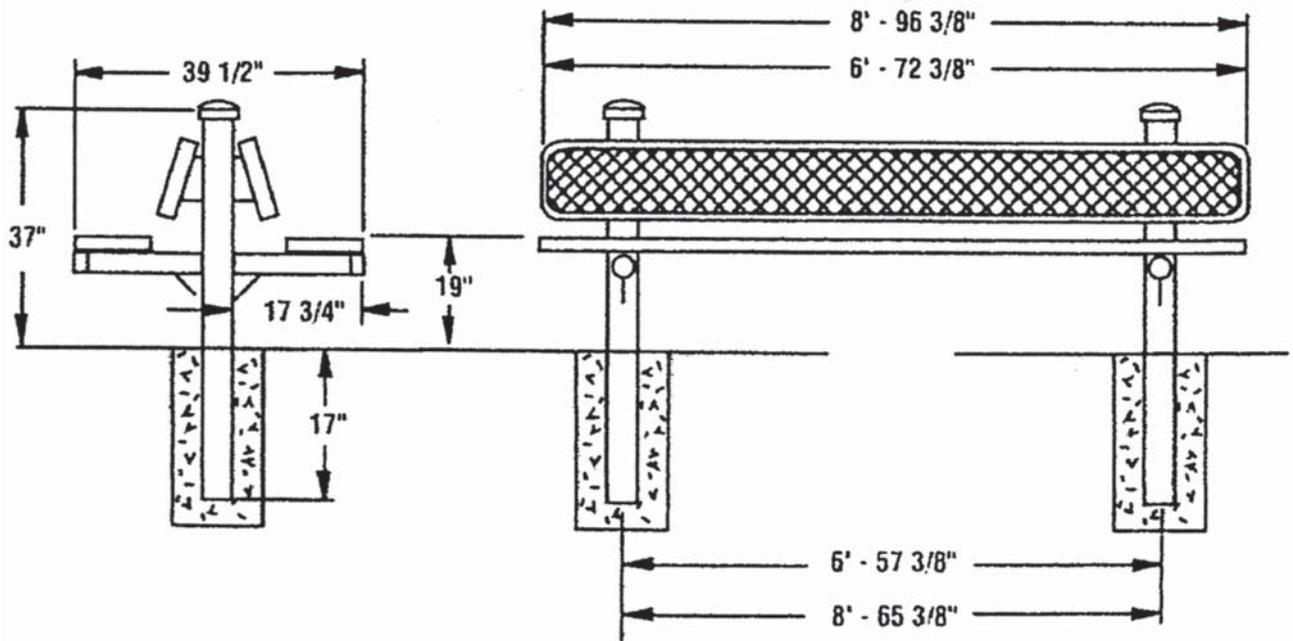
RESTROOM WITH STORAGE AREA
not to scale

SITE FURNISHINGS



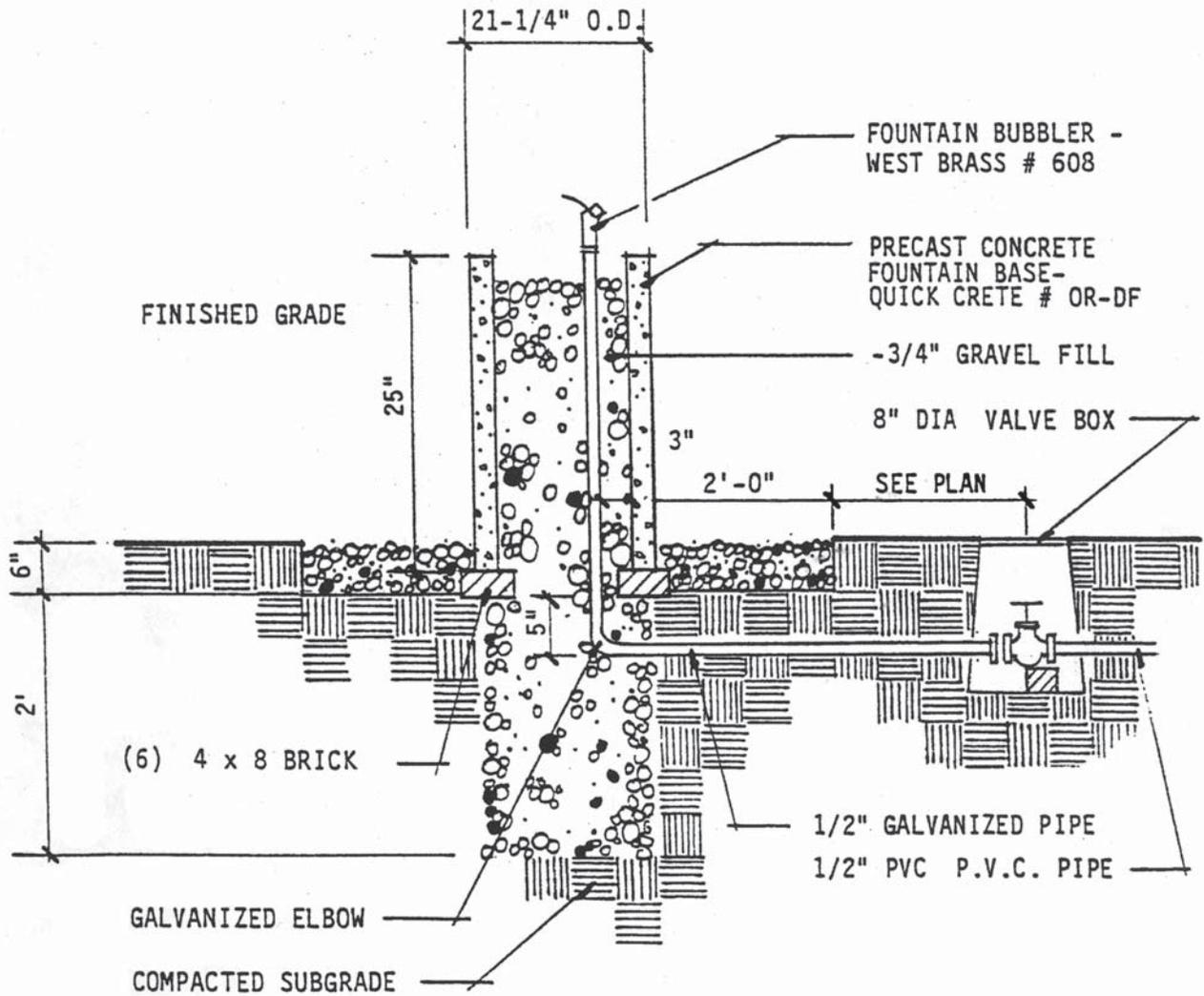
SINGLE BENCH
not to scale

SITE FURNISHINGS



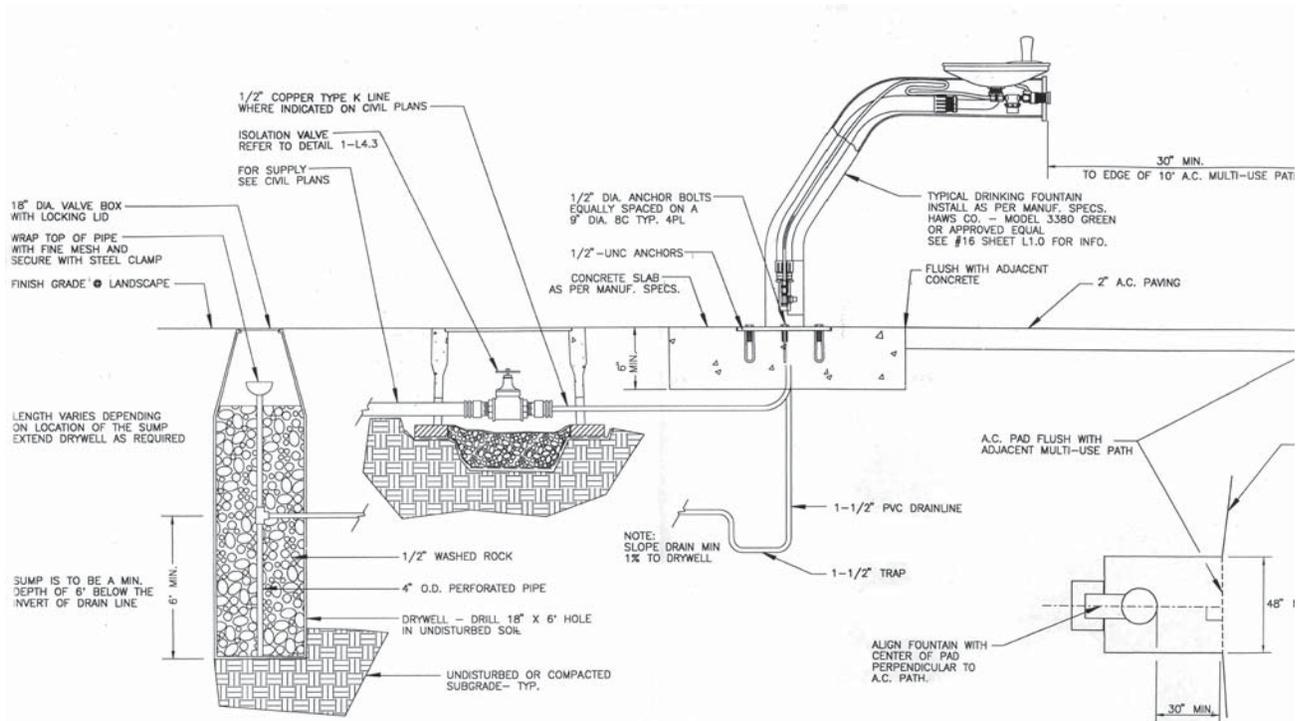
DOUBLE BENCH
not to scale

SITE FURNISHINGS



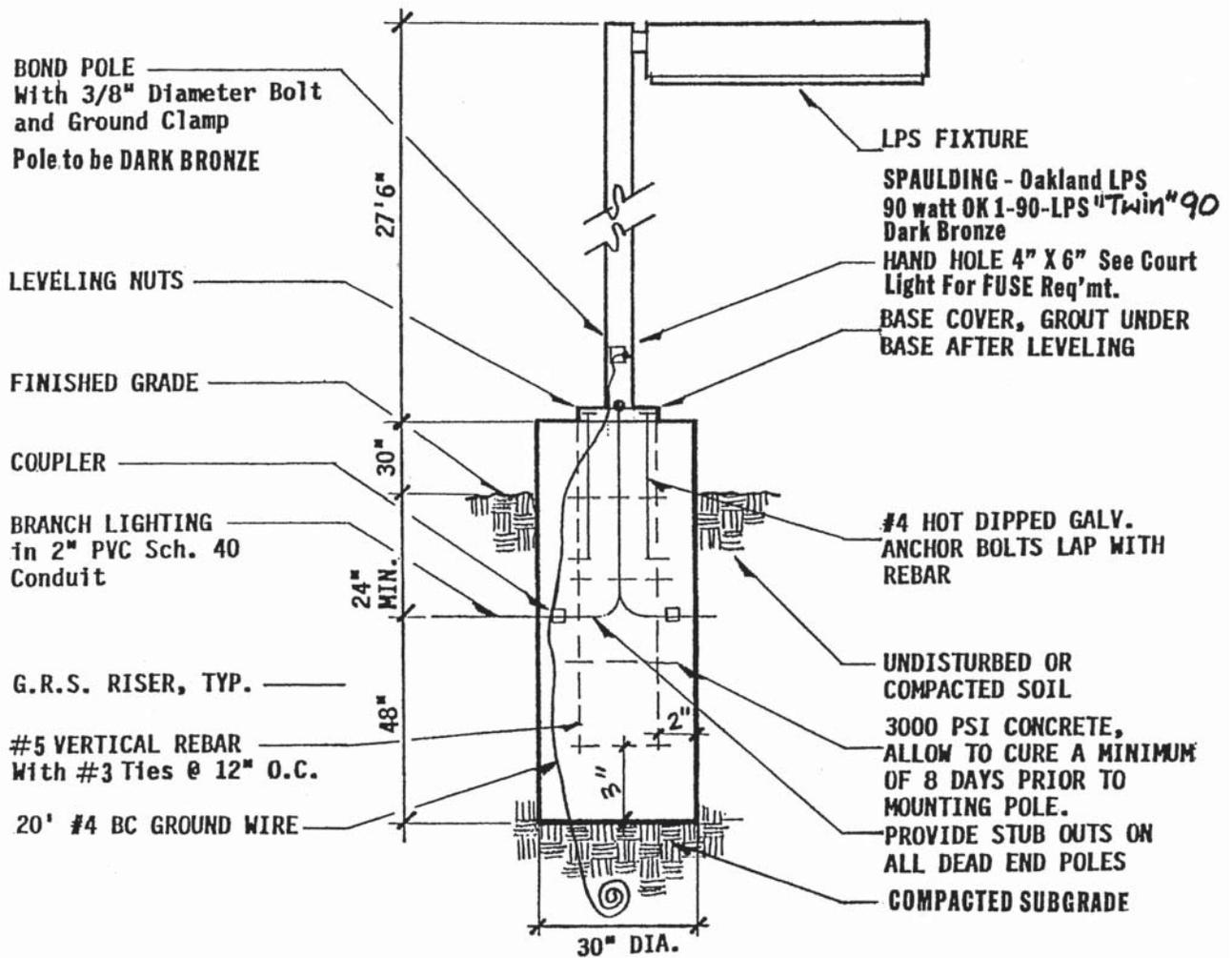
DRINKING FOUNTAIN
not to scale

SITE FURNISHINGS



DRINKING FOUNTAIN WITH DRYWELL
not to scale

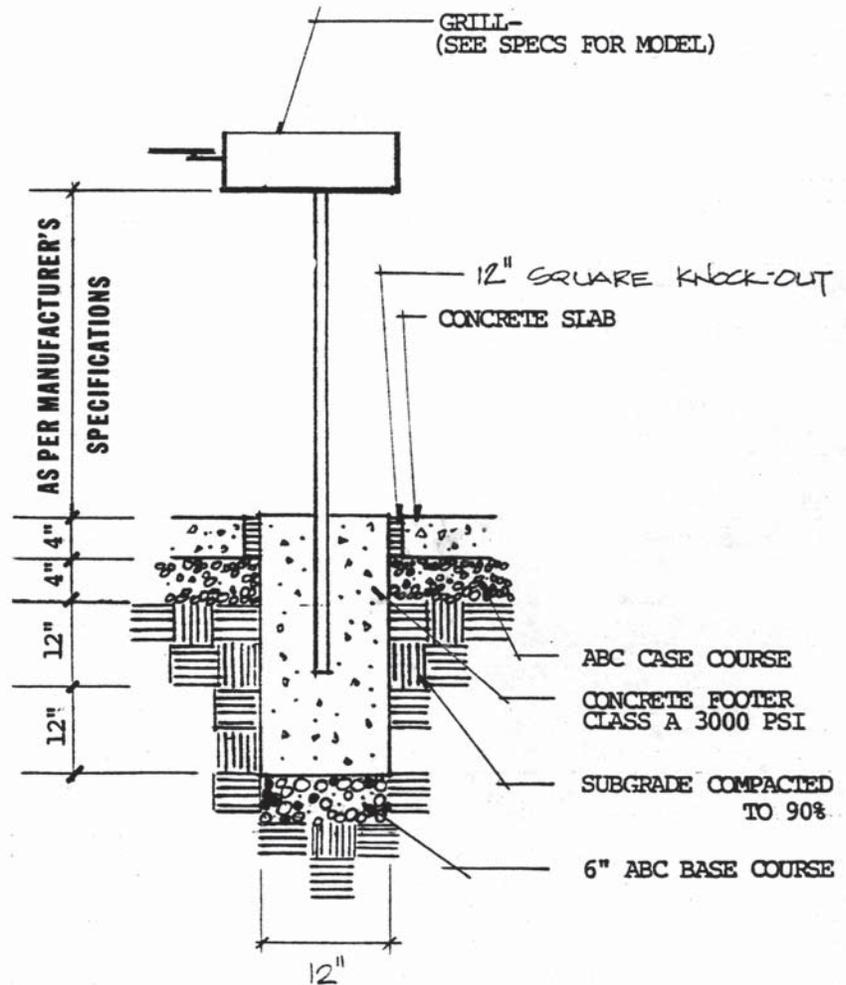
SITE FURNISHINGS



LIGHT POLE DETAIL
not to scale

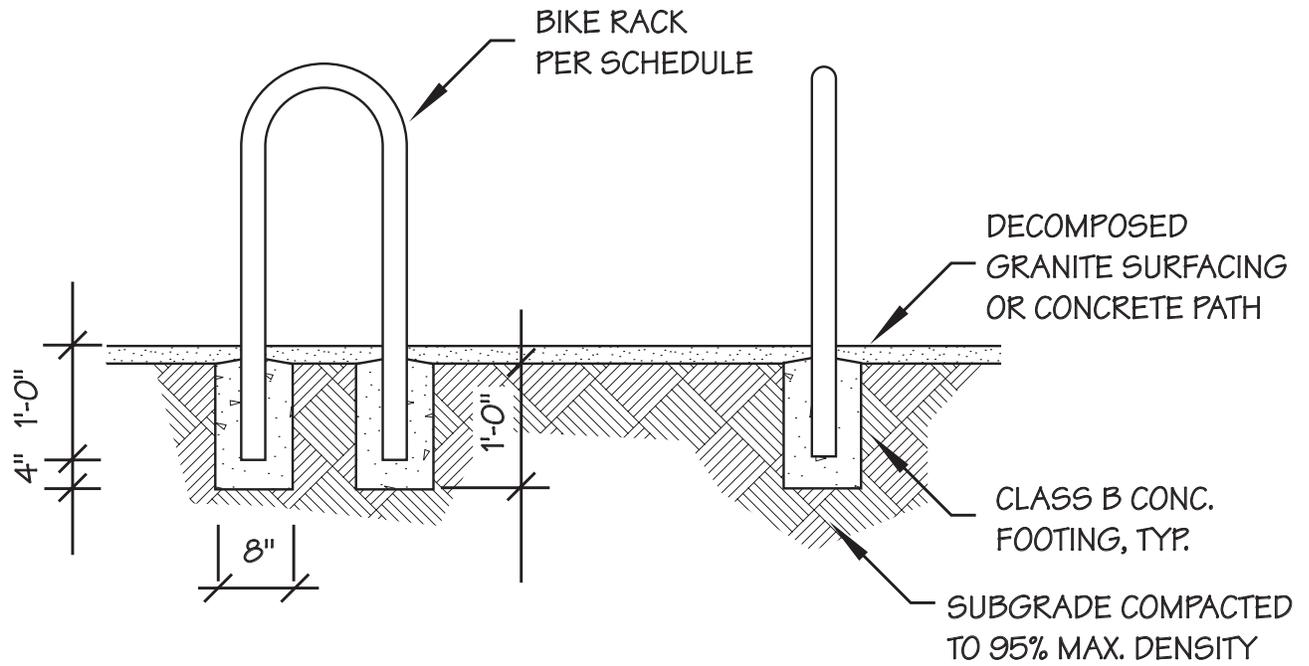
SITE FURNISHINGS

NOTE: GRILL LEG TO BE ENCASED IN A SCH. 40 4" STEEL PIPE CONTINUOUS WELD AT BOTTOM OF GRILL. 4" STEEL PIPE AND WORK TO BE SUPPLIED BY PIMA COUNTY.



SINGLE GRILL FOOTING DETAIL
not to scale

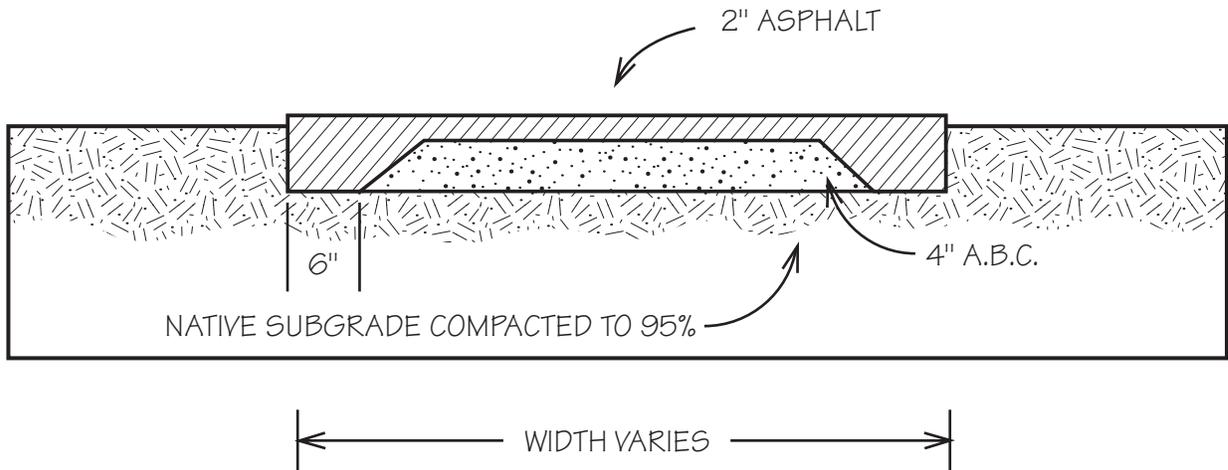
SITE FURNISHINGS



BIKE RACK DETAIL
not to scale

TRAILS

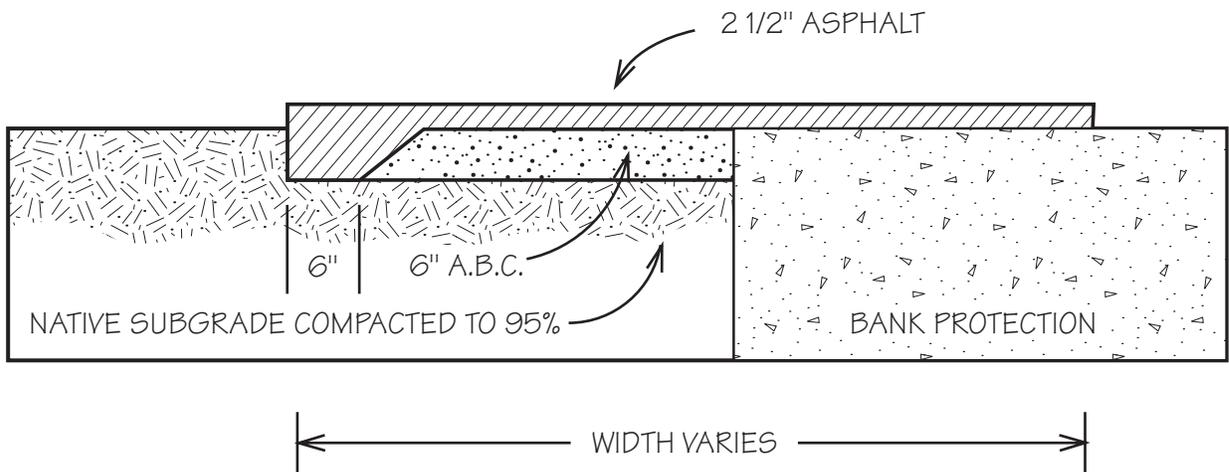
PAVED PATHWAY DETAIL - MINIMUM SPECIFICATIONS



PAVED PATHWAY DETAIL MINIMUM SPECIFICATIONS
not to scale

TRAILS

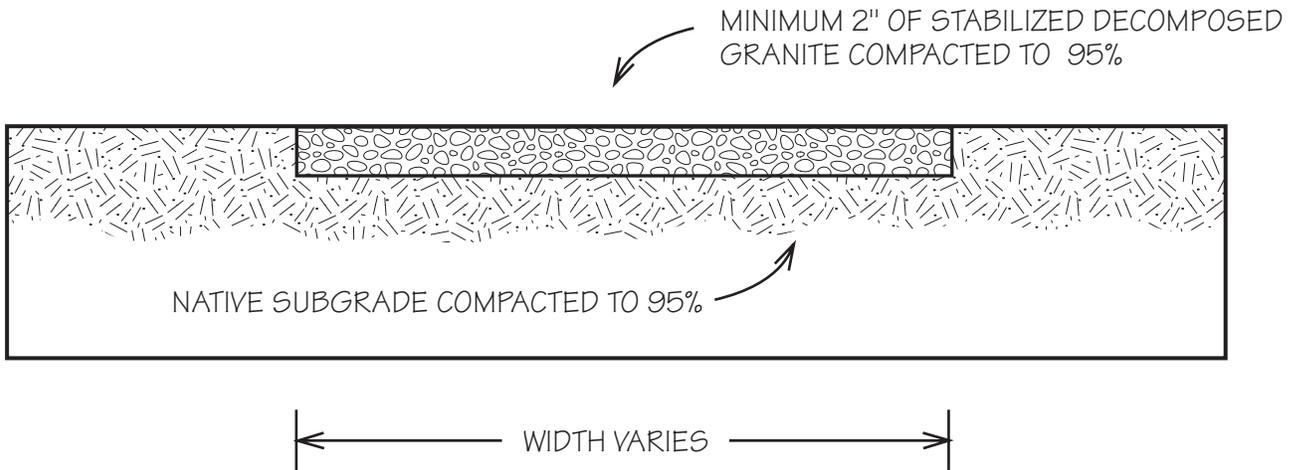
PAVED PATHWAY DETAIL - MINIMUM SPECIFICATIONS for RIVER PARK PATHWAYS PARTIALLY CONSTRUCTED OVER BANK PROTECTION



PAVED PATHWAY DETAIL MINIMUM SPECIFICATIONS
not to scale

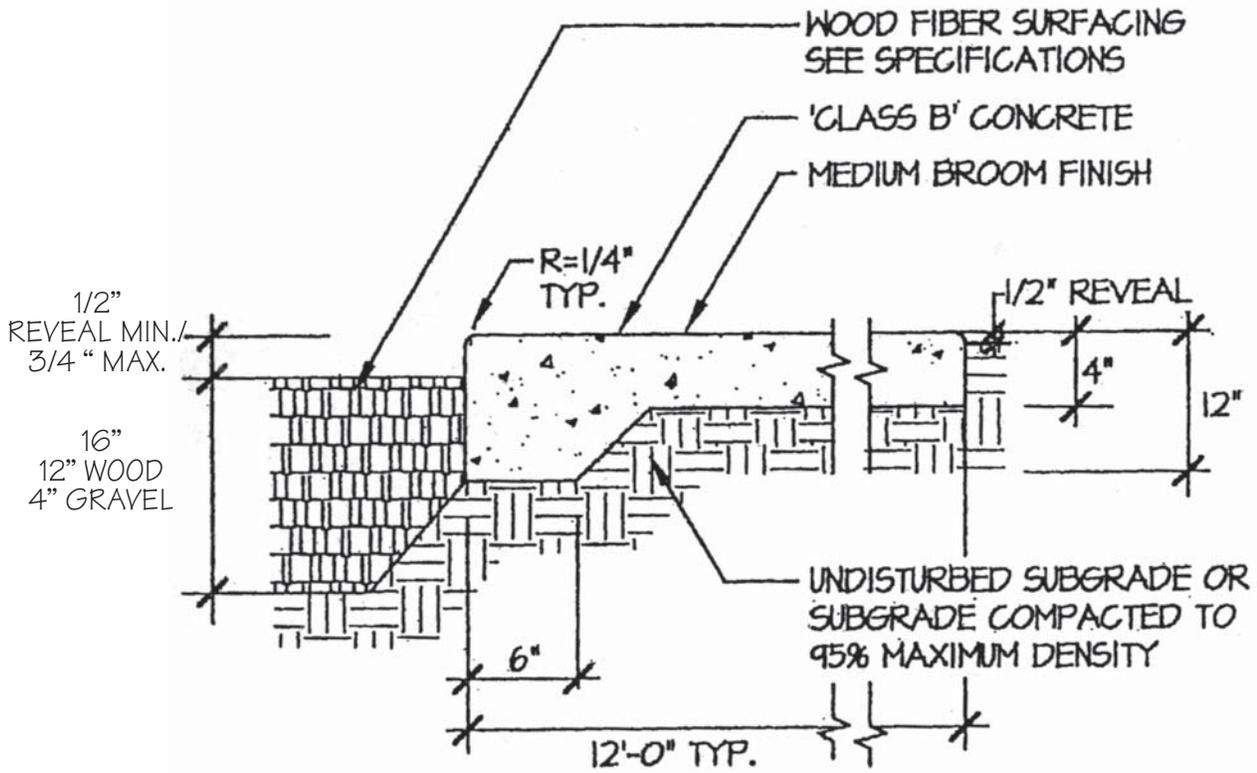
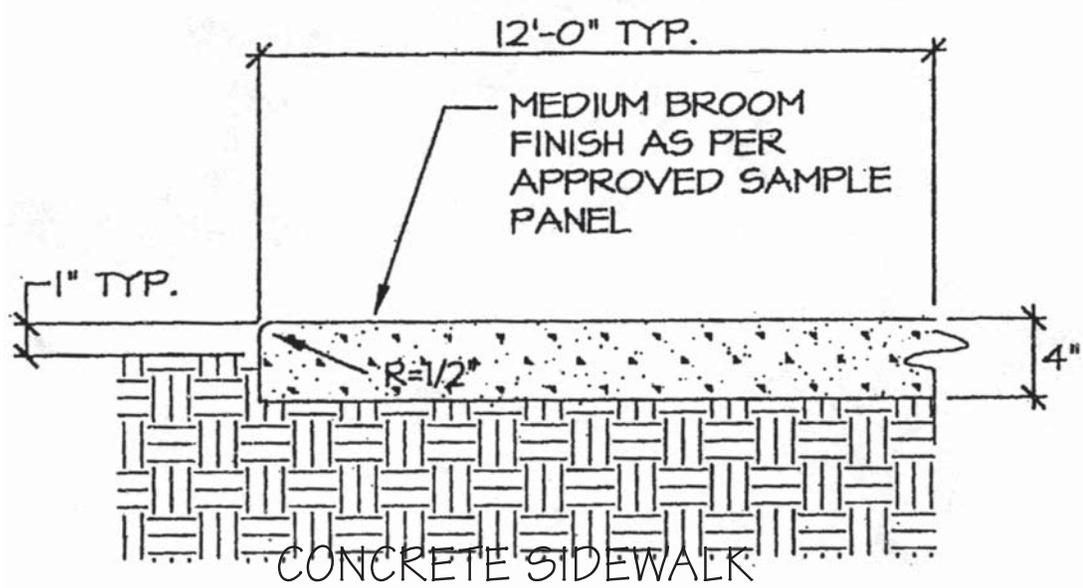
TRAILS

D.G. PATHWAY DETAIL - MINIMUM SPECIFICATIONS



D.G. PATHWAY DETAIL - MINIMUM SPECIFICATIONS
not to scale

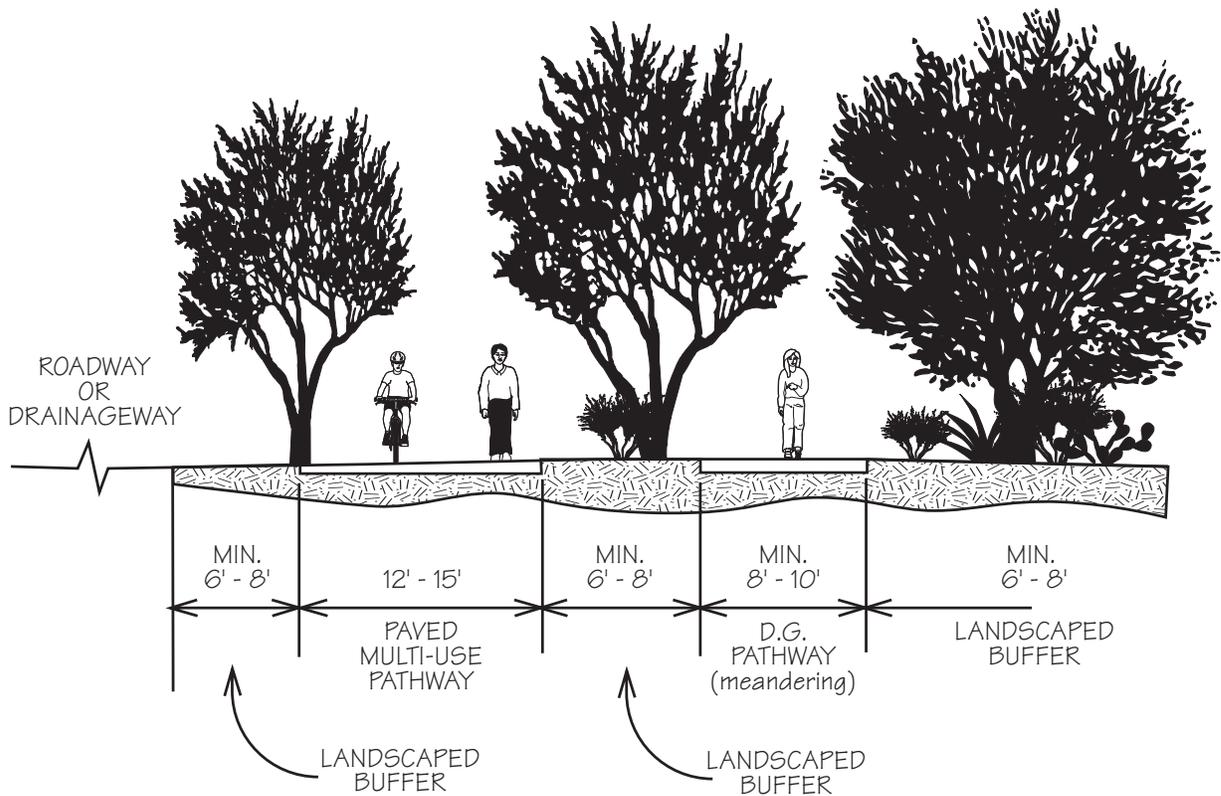
TRAILS



CONCRETE SIDEWALK AT PLAYGROUND DETAIL
not to scale

TRAILS

DIVIDED URBAN PATHWAY



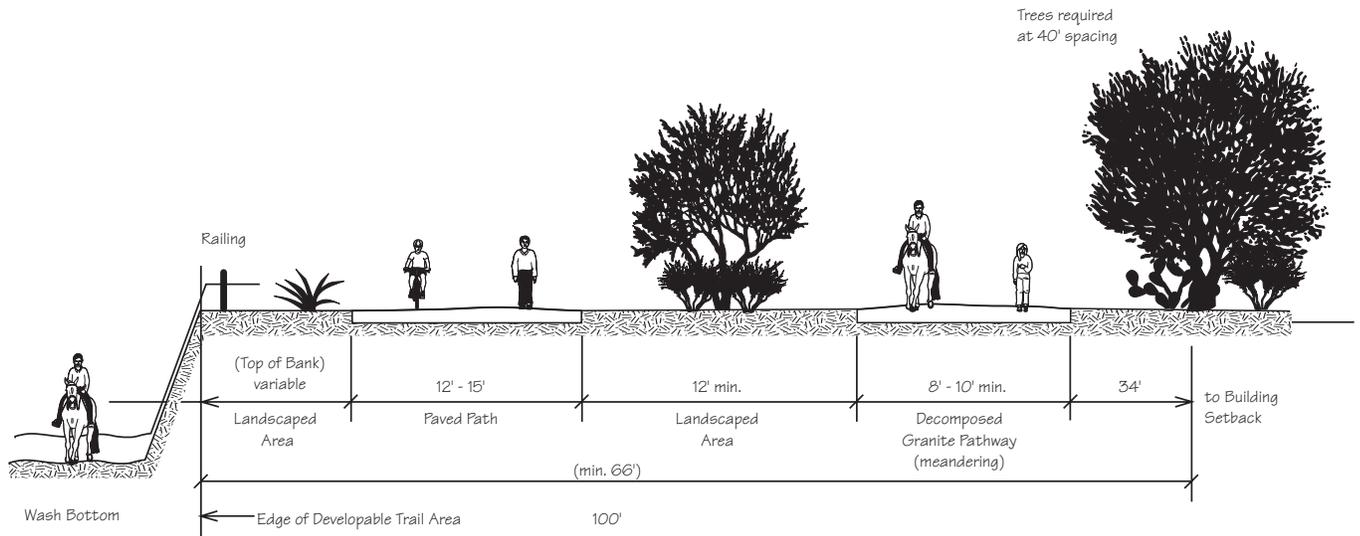
NOTE: Standards expressed are minimums.
Landscaped areas should be wider if possible.

- Minimum corridor width is 50' for pathways constructed to this standard.
- Corridor shall be kept as far from existing and/or future roadways as possible. Corridor may be partially located in a public right-of-way only with the approval of appropriate parks and transportation officials. At least 50% of the corridor shall be located outside of the public right-of-way to ensure minimum quality of experience and safety for trail users.
- Paved path may meander gently to add additional interest (maintain sightlines).
- Trees should be located a minimum of 6' from paths if possible.
- Maintain 2' clear areas along the sides of each path to enhance safety.
- Keep trees at least 10' from buried sewer lines (if applicable).
- Signage should be located a minimum of 3' from the edge of paths for safety.
- Paths should be constructed with slight crowns (slope not to exceed 2%) to enhance drainage and direct runoff to landscaped areas.



DIVIDED URBAN PATHWAY
not to scale

TRAILS



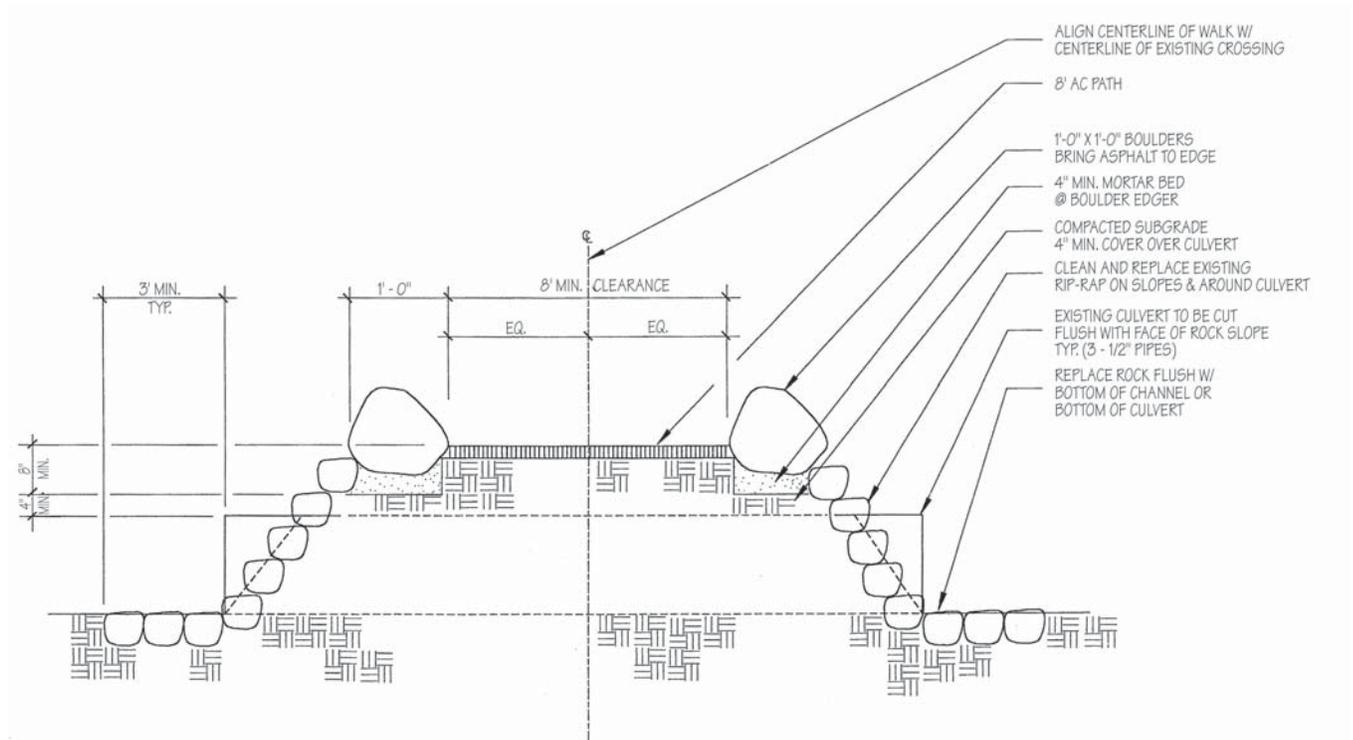
NOTE: Standards expressed are minimums.
Landscaped areas should be wider if possible.

- Minimum corridor width for river parks is 100', unless an exception is approved by parks officials to accommodate site constraints.
- Paved path may meander gently to add additional interest (maintain sightlines).
- Trees should be located a minimum of 6' from paths if possible.
- Maintain 2' clear areas along the sides of each path to enhance safety.
- Keep trees at least 10' from buried sewer lines (if applicable).
- Signage should be located a minimum of 3' from the edge of paths for safety.
- Paths should be constructed with slight crowns (slope not to exceed 2%) to enhance drainage and direct runoff to landscaped areas.



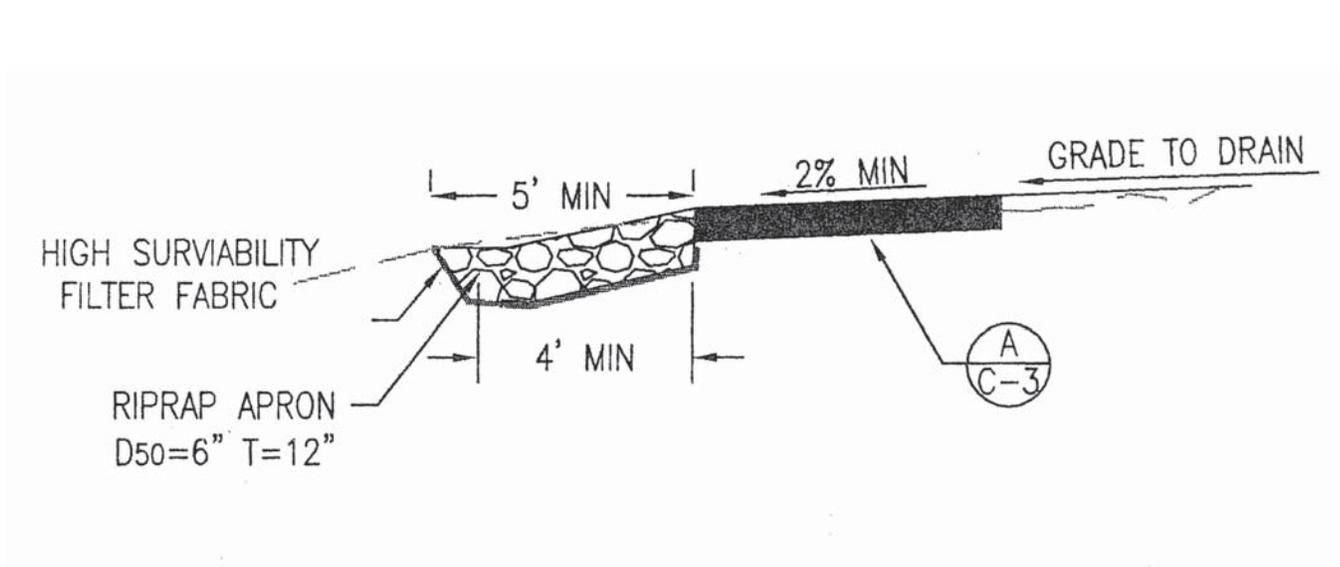
RIVER PARK CROSS SECTION not to scale

EROSION CONTROL

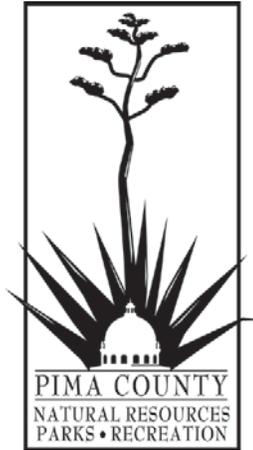


RIP RAP DETAIL
not to scale

EROSION CONTROL



RIP RAP APRON DETAIL
not to scale



Sample Recreation Area Configurations

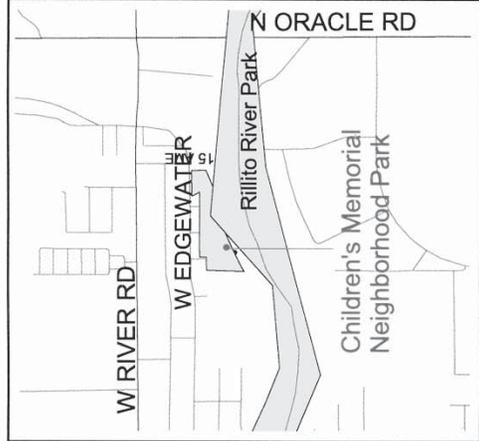
CHILDREN'S MEMORIAL NEIGHBORHOOD PARK



LEGEND

- RAMADAS
- PLAYGROUND
- COURTS
- RESTROOMS
- BALL FIELDS
- EXERCISE STATIONS
- MEMORIAL
- DRINKING WATER
- PAVED TRAIL
- BOUNDARY
- PICNIC TABLES

100 0 100 200 Feet
 APPROXIMATE SCALE IN FEET
 1:2100



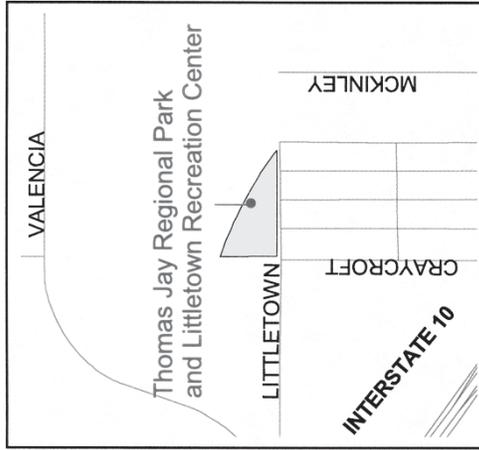
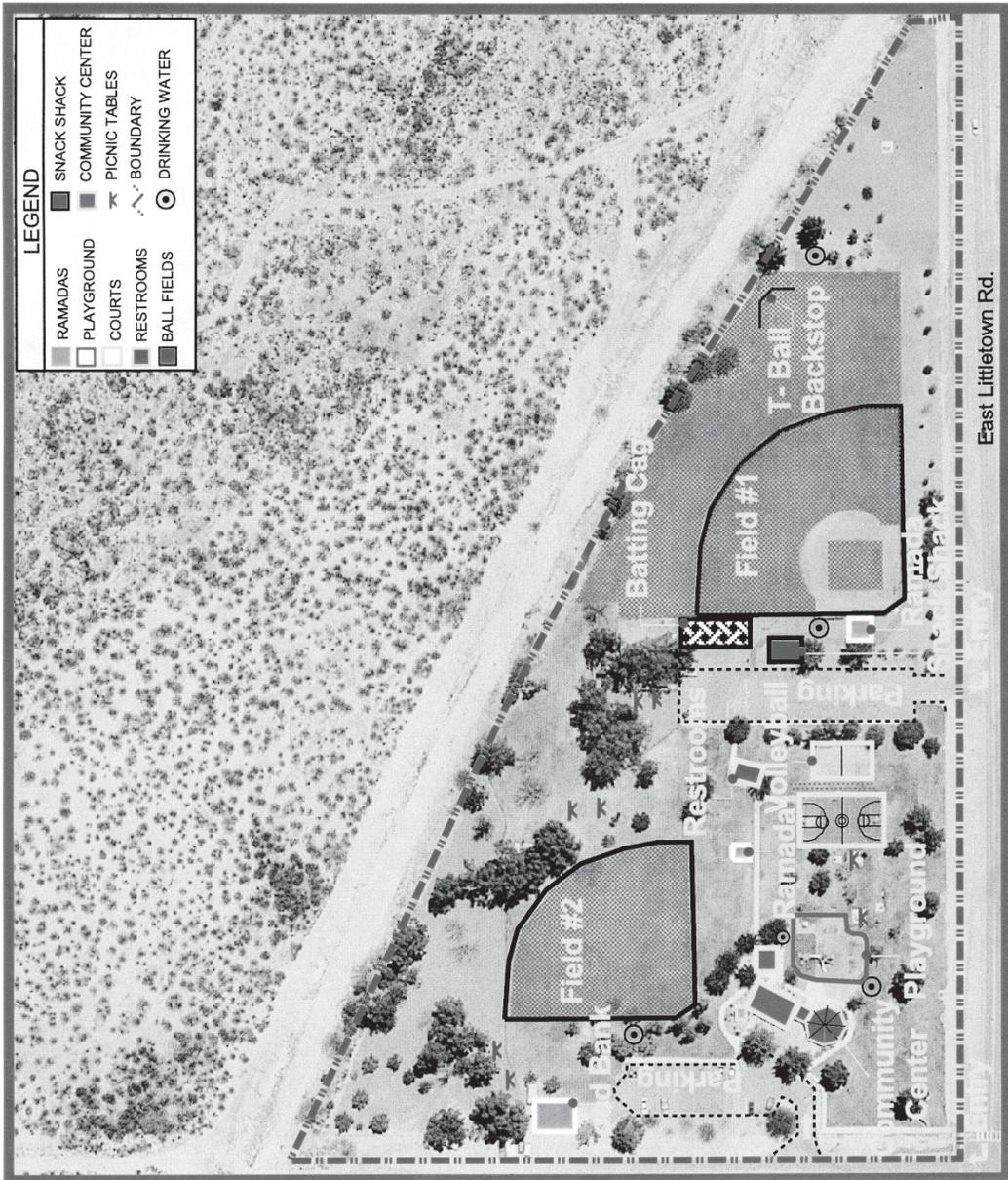
PARK FACILITIES :

ACREAGE :	8.9
RAMADAS W/ TABLES	3
PICNIC TABLES	1
GRILLS	4
DRINKING FOUNTAINS	2
REST ROOM	1
PLAYGROUND	1
T - BALL FIELD	1
BASKETBALL COURT	1
PARKING LOTS	2
MEMORIAL PLAZA	1
EXERCISE STATIONS	5

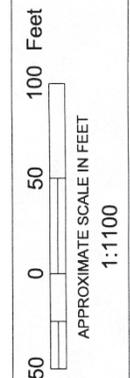
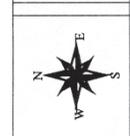
Pima County Natural Resources
 Parks - Recreation
 3500 West River Road
 Tucson, AZ 85741
<http://www.co.pima.az.us/pksrec/>
 Phone (520) 877-6277 Fax (520) 877-6000

Children's Memorial
 Neighborhood Park
 4851 North Fifteenth Ave.
 Tucson, Arizona

THOMAS JAY REGIONAL PARK AND LITTLETOWN RECREATION CENTER



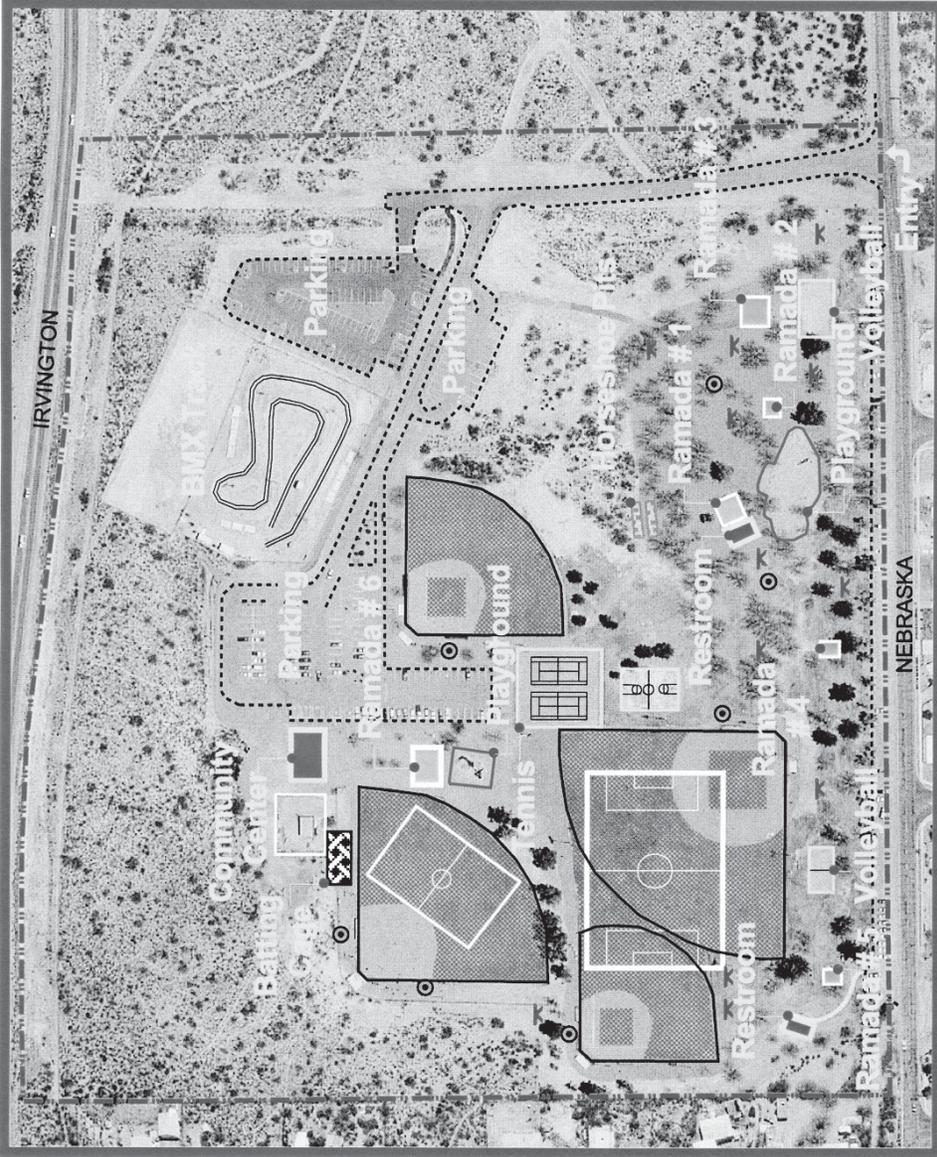
PARK FACILITIES :
ACREAGE : 37.50
1 COMMUNITY CENTER
2 BASEBALL / SOFTBALL
1 VOLLEYBALL COURT
1 BASKETBALL COURT
9 PICNIC TABLES
1 PLAYGROUND
3 RAMADAS W/ TABLES
1 RESTROOM
5 DRINKING FOUNTAINS
1 T-BALL BACKSTOP



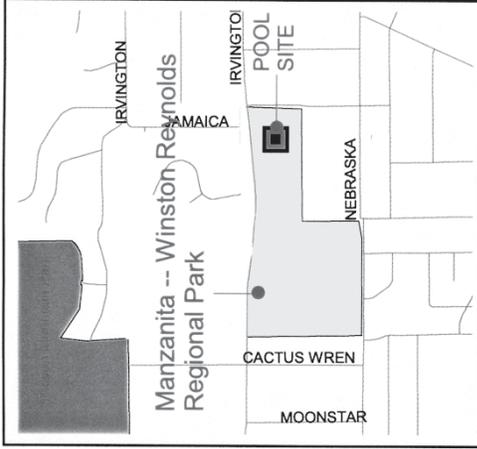
Prima County Natural Resources
Parks - Recreation
3500 West River Road
Tucson, AZ 85741
<http://www.co.pima.az.us/pksrec/>
Fax (520) 877-6277 Phone (520) 877-6000

Thomas Jay Regional Park
and Littletown Recreation Center
6465 South Craycroft Rd.
Tucson, Arizona

MANZANITA -- WINSTON REYNOLDS REGIONAL PARK



Note : Reservable Ramadas are #1 (electricity), #3 (no electricity).
See next page for Recreation Center and Pool Facilities.



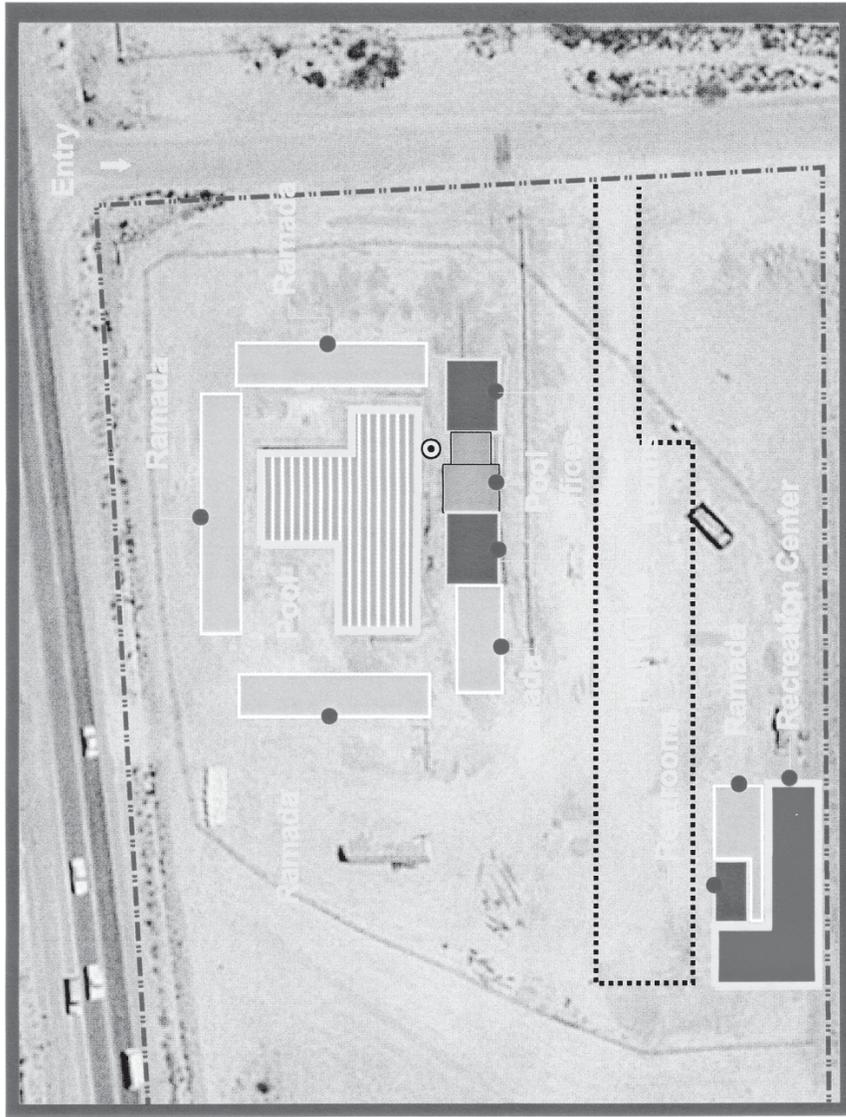
PARK FACILITIES :	
ACREAGE :	50.00
4	BASEBALL / SOFTBALL
2	SOCCER
1	BASKETBALL COURT
2	TENNIS COURTS
12	PICNIC TABLES
2	PLAYGROUNDS
5	RAMADAS W/ TABLES
2	RESTROOMS
7	DRINKING FOUNTAINS
2	HORSESHOE PITS
2	VOLLEYBALL
1	BMX RACETRACK
1	COMMUNITY CENTER
1	POOL

Manzanita (Winston Reynolds)
Regional Park
5200 South Westover Ave.
Tucson, Arizona

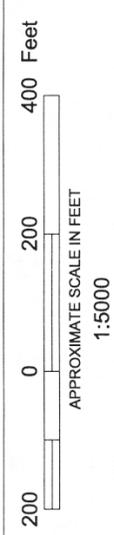
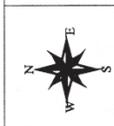
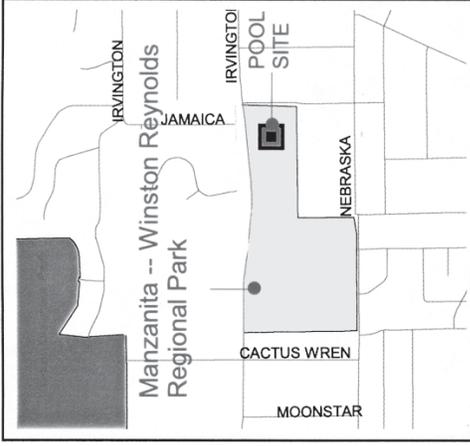
Pinna County Natural Resources
Parks - Recreation
3500 West River Road
Tucson, AZ 85741
<http://www.co.pima.az.us/pksrec/>
Fax (520) 877-6277 Phone (520) 877-6000

200 0 200 400 Feet
APPROXIMATE SCALE IN FEET
1:5000

MANZANITA -- WINSTON REYNOLDS REGIONAL PARK



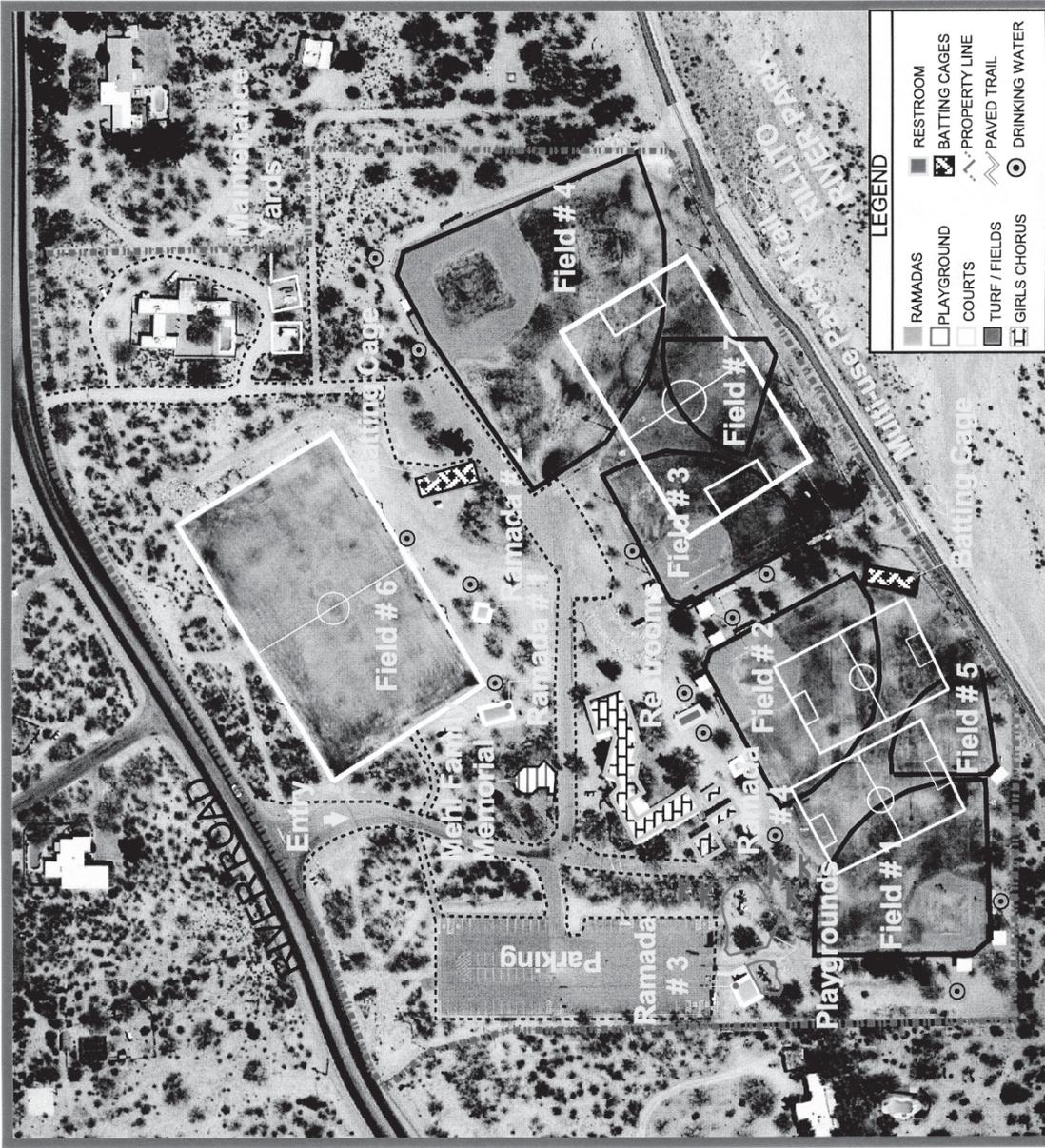
LEGEND	
	RAMADAS
	COMMUNITY CENTER
	PLAYGROUND
	COURTS
	RESTROOMS
	BALL FIELDS
	BMX TRACK
	HORSHOE PITS
	POOL
	PICNIC TABLES
	BOUNDARY
	DRINKING WATER



Pima County Natural Resources
 Parks - Recreation
 3500 West River Road
 Tucson, AZ 85741
<http://www.co.pima.az.us/pksrec/>
 Fax (520) 877-6277 Phone (520) 877-6000

Manzanita - Winston Reynolds
 Regional Park
 5200 South Westover Ave.
 Tucson, Arizona

GEORGE MEHL FAMILY FOOTHILLS DISTRICT PARK

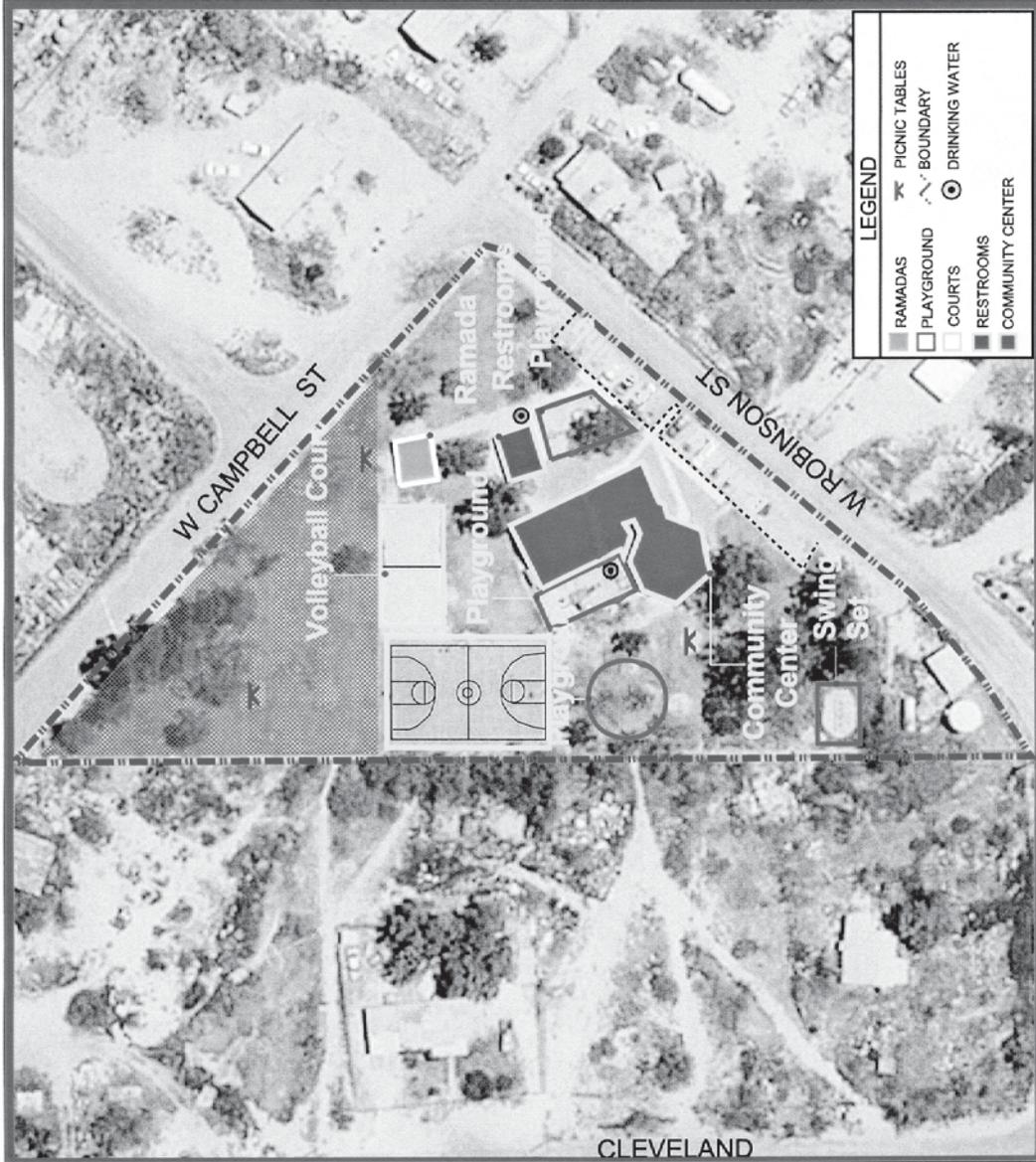


PARK FACILITIES :	
ACREAGE :	30.00
2	BATTING CAGES
5	BASEBALL / SOFTBALL
2	T-BALL TEMPORARY FIELDS
4	SOCCER FIELDS
5	PICNIC TABLES
1	PLAYGROUND
4	RAMADAS W/ TABLES
1	RESTROOMS
13	DRINKING FOUNTAINS

Note : Reservable Ramadas are:
 #1, #2 (electricity)
 #3 (no electricity)

		<p>Pima County Natural Resources Parks - Recreation 3500 West River Road Tucson, AZ 85741 http://www.co.pima.az.us/plsrec/ Phone (520) 877-6277 Fax (520) 877-6000</p>	<p>George Mehl Family Foothills District Park 4010 East River Road Tucson, Arizona</p>
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RILLITO VISTA NEIGHBORHOOD PARK

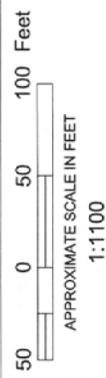


INDEX MAP
1:24000

PARK FACILITIES :

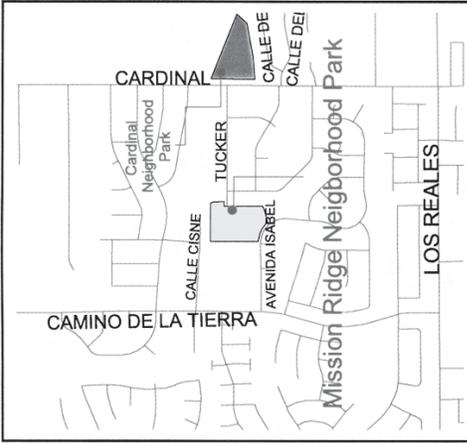
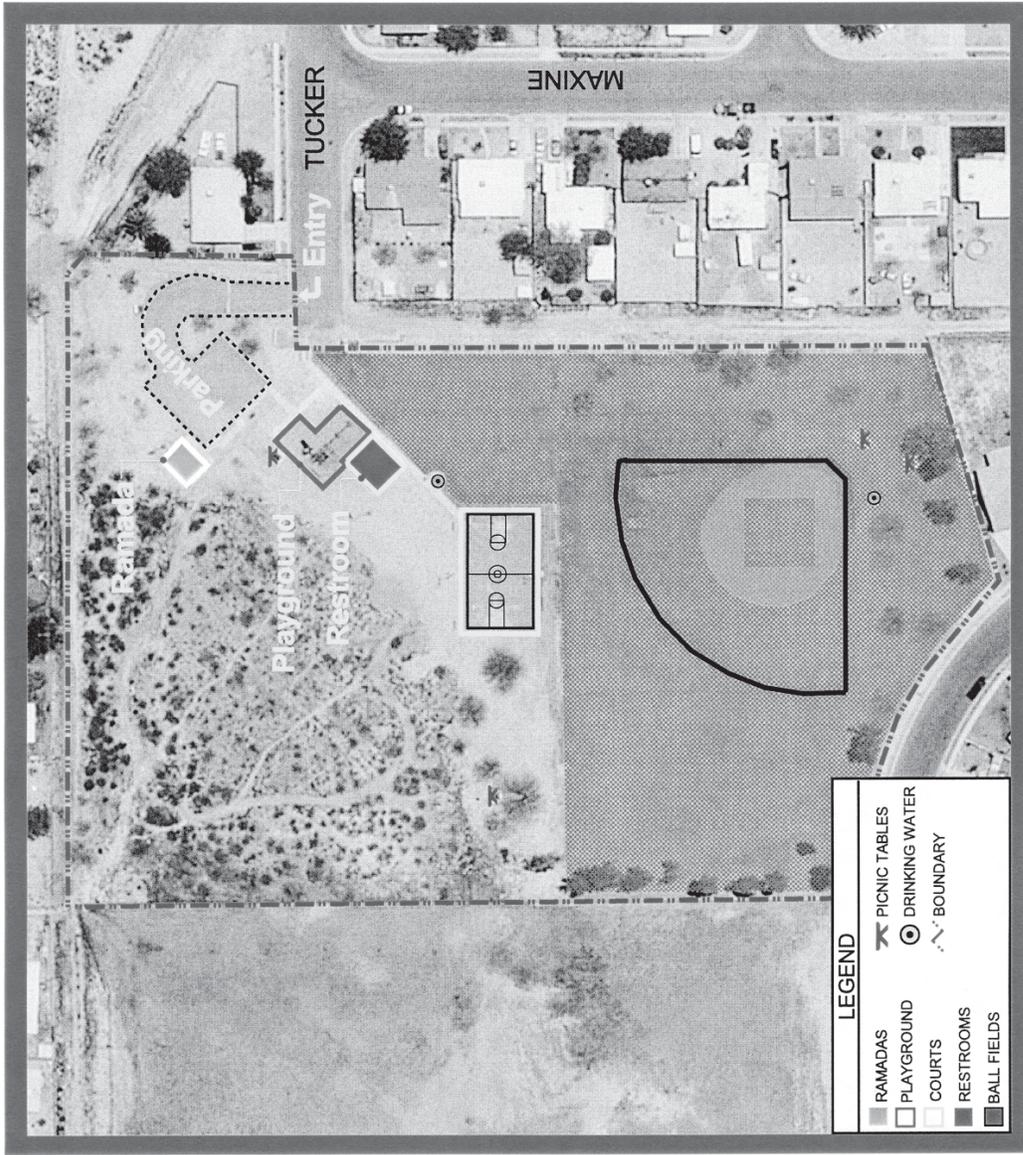
- ACREAGE : 1.72
- 1 COMMUNITY CENTER
- 1 VOLLYBALL COURT
- 1 BASKETBALL COURT
- 3 PICNIC TABLES
- 3 PLAYGROUNDS
- 1 RAMADAS W/ TABLES
- 1 RESTROOM
- 2 DRINKING FOUNTAINS
- 1 SWING SET

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Rillito Vista Neighborhood
Park and Recreation Center
8820 West Robinson Rd.
Tucson, Arizona

MISSION RIDGE NEIGHBORHOOD PARK



PARK FACILITIES :
ACREAGE : 6.73
1 BASEBALL / SOFTBALL
1 BASKETBALL COURT
2 DRINKING FOUNTAINS
1 PLAYGROUND
1 RAMADA W/TABLES
1 REST ROOM
4 PICNIC TABLES



100 0 100 Feet

APPROXIMATE SCALE IN FEET
1:1500

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Parks - Recreation
3500 West River Road
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Mission Ridge Neighborhood Park
3300 West Tucker St.
Tucson, Arizona