City of Santa Clara

Park Amenities & Design Standards

Mission: Parks & Recreation supports a vibrant, active quality of life for all ages, abilities and interests of the Santa Clara community through excellent parks and recreation facilities, community services, programs and events while preserving natural resources and supporting habitat for wildlife.

Parks & Recreation Department
Administrative Draft as of July 18, 2023
Note: Lay-out intentionally formatted as double-spaced

City of Santa Clara

Parks & Recreation Department

Park Amenities & Design Standards

The City of Santa Clara Parks & Recreation Department (Department) has developed this Park Amenities and Design Standards Manual (Standards) to serve as a reference tool when City staff, project managers, consultants, and private developers who are dedicating improved park land pursuant to the City's Park and Recreational Land Ordinance (SCCC17.35) are planning, designing, constructing, maintaining, and rehabilitating City parks and recreational facilities. These Standards support the Council adopted strategic goal to enhance parks, recreation, sports, and arts assets. These Standards also support the City's General Plan goals to provide exceptional and inclusive parks and recreational experiences, preserve natural resources and enhance the quality of life for all residents. These Standards are to be used for the design of new parks and recreational facilities, and/or the rehabilitation/renewal of existing parks and recreational facilities. The Standards provide guidance to landscape architects, grounds maintenance staff and others as to what is acceptable and enables effective, efficient maintenance and the lifecycle replacement of assets. These Standards cover a wide range of park elements, identifying specific product types, materials, maintenance, installation practices, etc.

It is understood that City park sites should be easily accessible to the public by various modes of transportation: vehicular, bicycle, and pedestrian. Current Federal ADA accessibility guidelines must be incorporated into the design of parks, park facilities and amenities. ADA accessibility should be fully accommodated at all sites. It is also understood that all new park facilities, elements and components must conform to the most recent uniform building codes, California laws, regulations and safety guidelines. Finally, where applicable, all current City

ordinances, Public Works standards and Utilities standards will be followed. Such guidelines are published elsewhere.

The production of the City Park Standards meets the following four objectives:

- To provide a comprehensive reference document that clearly represents the City's preferred standard parks components.

- To support the consistent, citywide identification and implementation of safe, cost effective, easily maintained, structurally sound and environmentally sustainable components.

- To review and select amenities that support the City's goal of an active, inclusive, age-friendly, and healthy quality of life.

- To integrate enterprise asset identification, management, and lifecycle maintenance through standardization of key park components.

Each section (chapter) may include text, images, and detail to clearly communicate the City's Park Standards. Any substitution of the preferred amenities, facility configurations, materials, equipment, or best practice will require prior City review and approval; submittals of a "like product" must meet or exceed the functional, aesthetic and capacity requirements and include the rationale with ample time for Departmental review and approval by the Director of Parks & Recreation (Director) or designee. Information in this document is not intended to replace or function as project specifications, construction documents, or contract documents. Project construction plans and specifications document shall include all necessary details and specifications.

These Park Amenity & Design Standards may be amended and updated, as needed.

For further information or guidance, please contact:

City of Santa Clara

Parks & Recreation Department

1500 Warburton Avenue

Santa Clara, CA 95050

408-615-2260

Table of Contents

CHAPTER 1 STANDARD PARK AMENITIES

Section 1 – Barbeque Grills & Ash Bins

1. DEFINITION

   A. The purpose of this guideline is to establish minimum standards for the selection and installation of barbeque grill(s), and receptacle(s) for safe storage of extinguished ashes in park picnic areas.

2. STANDARD

   A. One individual barbecue is required per two picnic tables.

   B. A group size barbecue can be shared by four picnic tables.

   C. One (1), flame retardant, heat resistant ash bin with lid is required for each group picnic area if grills are present.

   D. Location of grills and ash bins must be a minimum of 6 feet distance from park benches, pathways, trash cans and landscape foliage.

   E. Accessibility: All barbecues shall be accessible to persons with disabilities.

3. APPLICATION

   A. This section includes the following:

      1) Park location & size of grill

      2) Manufacturer

      3) Type

      4) Installation

   B. NEIGHBORHOOD PARKS - SMALL BARBEQUE GRILL

      1) Manufacturer: Kay Park Recreation Corporation.

2) Type: Pedestal Grill—product number SB16NP. No substitutions are allowed without written approval of the Director or designee.

3) Installation: poured in place concrete footing. The Pedestal Grill has a 20 x 15-inch grill surface. The depth of the hole must be 30 inches and the diameter 10 inches. Installation method and technique shall be according to the manufacturer's guidelines.

C. NEIGHBORHOOD PARKS - LARGE BARBEQUE GRILL

1) Manufacturer: Kay Park Recreation Corporation.

2) Type: Surface Mount Grill—Product number SPD450IG. The Surface Mount Grill has a 38 x 36-inch grill surface. No substitutions may be allowed without written approval by the Director or designee.

3) Installation: poured in place concrete footing. The depth of the hole must be 24 inches with an 18-inch diameter. Installation method and technique shall be according to the manufacturer's guidelines.

D. ASH BIN

1) Manufacturer: Kay Parks www.kaypark.com

2) Product: Steel Coal Ash Receptacle

3) Installation: Surface mount according to manufacturer's directions.

Section 2 – Drinking Fountains

1. DEFINITION

   A. The purpose of this guideline is to establish minimum standards for drinking fountains, bottle fillers, dog bowls and their installation.

2. STANDARD

   A. One drinking fountain per neighborhood park, or

   B. One drinking fountain in the vicinity of an outdoor playground, sport court, trailhead or group picnic area, or stand-alone park restroom building.

   C. Features: dual height. There must be one (1) dog bowl (fountain) per fenced off leash dog area if located inside the area; or one (1) bowl if located outside and in general vicinity of the designated off leash dog areas.

   D. Exceptions: Substitutions allowed upon approval by the Director or designee.

   E. Accessibility: all drinking fountains must provide regular and ADA service.

3. APPLICATION

   A. This section includes the following:

      1) Location

      2) Manufacturer

      3) Type

      4) Installation

   B. Indoor and/or Outdoor Wall Mounted Drinking Fountain

      1) Location: Secured Facility, or Non-secured Facility

      2) Manufacturer: Haws Corporation

3) Type: Dual height wall mounted, 14-gauge stainless steel drinking fountain with No. 4 satin finish. Product Number: 1119.14.
4) Installation method and technique shall be according to the manufacturer's guidelines.

C. Pedestal Drinking Fountain with bottle filling station

1) Location: Outdoor
2) Manufacturer: Elkay
3) Type: Pedestal drinking fountain with bottle filling station, stainless steel contoured basin and standard evergreen powder coated galvanized steel pedestal. Option with pet fountain station available. Product Number: LK4420BF1UDB EZH2O
4) Installation method and technique shall be according to the manufacturer's guidelines.

Section 3 – Park Benches & Picnic Tables

1. DEFINITION

   A. The purpose of this guideline is to establish minimum standards for park benches, picnic tables, and their installation.

2. STANDARD

   A. Benches: A minimum of two (2) park benches are required at playgrounds and sport courts. One (1) bench at a playground must have a back support. The park amenities specification must stipulate whether the bench will be a 6-foot length or an 8-foot length.

   B. Picnic Tables: Neighborhood Parks should include multiple groupings of tables dispersed throughout the park site under shade trees, but no closer than 30 feet of proximate residential units. Picnic areas of greater than a 50-person capacity must provide signage regarding reservation permit requirements. Tables will provide game tops for added recreational amenity use(s).

   C. Exceptions: Substitutions allowed upon approval by the Director or designee.

   D. Accessibility: All benches shall be accessible to persons with disabilities. At least one picnic table per grouping of tables must provide accessibility.

3. APPLICATION

   A. This section includes the following:

      1) Manufacturer

      2) Type

      3) Installation

   B. Park Bench (with back support)

      1) Manufacturer: DuMOR Incorporated

2) Type: Heavy duty bench with back support and two arm rests. Product Number: Bench 58 (black).
3) Installation: Installation method and technique shall be according to the manufacturer's guidelines.

C. Park Bench (without a back support)
1) Manufacturer: DuMor Incorporated
2) Type: Heavy duty bench without back support or arm rests. Product Number: Bench 92.
3) Installation: Installation method and technique shall be according to the manufacturer's guidelines.

D. Picnic Tables (Round)—ADA Accessible and with Game Board Option
1) Manufacturer: Quick Crete Products Corp.
2) Type: Round Precast concrete picnic tables with beveled edges. Tables are ADA accessible. Product Number: examples include, QR42FC, QR42FC3.
3) Installation method and technique shall be according to the manufacturer's guidelines.

E. Picnic Tables (Square or Rectangular)—ADA Accessible with Game Board Option
1) Manufacturer: Quick Crete Products Corp.
2) Rectangular Precast concrete picnic tables with beveled edges. Tables are ADA accessible. Product Number: examples include, QLBT72PT, QS42FC3.
3) Installation method and technique shall be according to the manufacturer's guidelines

Section 4 – Park Restrooms

1. DEFINITION

   The purpose of this guideline is to establish minimum standards and capacities for park restrooms.

2. STANDARDS

   A. Mini Parks of under one acre in size do not require a restroom.

   B. Mini Parks and Neighborhood Parks of between 1 acre to 2.5 acres require a minimum of one restroom building with a minimum of one (1) gender neutral water closet.

   C. Exception: Neighborhood Parks of 2.5 acres or less in size that are designed and dedicated to City by Park Development Agreement may propose for review and potential approval, a restroom of similar quantity and quality to a Park Restroom in a building adjacent to the park by recorded public access agreement provided it is open and accessible open from 6:00 a.m. to 10:00 p.m. for a lit park facility, or 6 a.m. to 30 minutes after sunset for an unlit park facility.

   D. Neighborhood Parks of greater than 2.5 acres and/or those with athletic facilities, shall provide a restroom with sufficient number of fixtures to serve the occupancy load of the park following applicable standards in the Plumbing Code. This may be required at Plan check review and approval. If an occupancy load has not been calculated for a park, or a park has both formal programmed areas and informal unprogrammed areas, a minimum of three toilet stalls per gender, or six gender neutral stalls is required. Parks with a multi-field sports complex with 3 or more fields will be required to fully serve the intended load/capacity of the facility. Restroom Standard Loads/Fixtures (See Table).

Table Bathroom Occupancy and Fixtures			
Male Occupancy	Quantity of water closet(s) & urinal(s)	Female Occupancy	Quantity of water closet(s)
1-100	1+1	1-25	1
		26-50	2
		51-100	3
101-200	2+2	101-200	4
201-400	3+3	201-300	6
		301-400	8
400+	1 fixture each per 500 additional	400+	Add 1 fixture per 125 additional

A. The Restroom may be a custom designed and constructed on site restroom to serve the park's recreation program(s), or it can be an approved standard prefabricated restroom building.

B. Self-Locking Door Mechanisms. Where practical, restrooms should have automatic door openers and locking mechanisms to provide remote opening/closing features.

C. Service Chase: restroom buildings should have a service and supply chase. Such area will be of sufficient size to accommodate any required maintenance, clean out access,

wet and dry utility spaces for custodial care and cleaning supplies, security features' connectivity, and location of irrigation control, WIFI, etc.

3. APPLICATION

A. This section includes the following by fixture:

1) Manufacturer
2) Fixture type
3) Installation

B. Toilet

1) Manufacturer: American Standard Inc.
2) Type: AFWALL FloWise Elongated Flushometer Toilet. Product Number: 2257.001. High efficiency low consumption toilet. Operated from 1.1gpf to 1.6gpf. Substitutions may be allowed upon approval by the Director or designee.
3) Installation method and technique shall be according to the manufacturer's guidelines.

C. Flushometer

1) Manufacturer: Sloan
2) Type: Flush valve for AFWALL FloWise Elongated Flushometer Toilet. Product Number: G2 Optima Plus. Substitutions may be allowed if flush valve is a handsfree/touchless valve that is fully compatible with the specified toilet, and readily available locally.
3) Installation method and technique shall be according to the manufacturer's guidelines.

D. Urinal

1) Manufacturer: American Standard Inc.
2) Type: WASHBROOK FloWise Universal Urinal. Product Number: 6590.001. Ultra-high efficiency low consumption urinal. Operated from 0.125gpf to 1.0gpf. Substitutions may be allowed upon approval by the Director or designee.
3) Installation method and technique shall be according to the manufacturer's guidelines.

E. Urinal Flushometer.

1) Manufacturer: Sloan.
2) Type ECOS Single Flush and Dual Flush Flushometer. Substitutions may be allowed if flush valve is a handsfree/touchless valve and fully compatible with the specified toilet and upon approval by the Director or designee.
3) Installation method and technique shall be according to the manufacturer's guidelines.

F. Faucet

1) Manufacturer: Chicago Faucets Inc.
2) Type: HyTronic Contemporary Sink Faucet with Dual Beam Infrared Sensor. Product Number: 116.212.AB.1. Single-hole contemporary electronic integral spout 0.5gpm. Substitutions upon approval by the Director or designee.
3) Installation method and technique shall be according to the manufacturer's guidelines may be allowed if a low flow, handsfree/touchless, and has the ability to sense a leak and trigger automatic shut off.

G. Sink/Lavatory

1) Manufacturer: American Standard.
2) Type: Lucerne Wall Hung Lavatory. Product Number: 0356.041. Single Center faucet hole. D shaped bowl, wall hung sink. Substitutions may be allowed upon approval by the Director or designee.
3) Installation method and technique shall be according to the manufacturer's guidelines.

H. Partitions

1) Manufacturer: Bradley Corporation.
2) Type: Floor Mounted Overhead Braced Restroom Partitions. Product Number: Series 400 Sentinel. Options include stainless steel wrap around gravity hinge, stainless steel concealed slide latch, and continuous steel brackets. Substitutions may be allowed upon approval by the Director or designee provided they are of similar material and provide a graffiti, etch resistant surface that promotes ease of cleaning and sanitizing.
3) Installation method and technique shall be according to the manufacturer's guidelines.
4) Partition height between stalls should be six (6) foot above floor.

I. Grab Bar

1) Manufacturer: BOBRICK Washroom Equipment.
2) Type: 1.5-inch Diameter Stainless Steel Grab Bar with Snap Flange. Product Number: Series B-6806 Satin Finish. Placement and angle to be determined by Architect. Substitutions may be allowed upon approval by the Director or designee.

3) Installation method and technique shall be according to the manufacturer's guidelines.

4) Required in shower areas per ADA guidelines.

J. Mirrors

1) Manufacturer: BOBRICK Washroom Equipment.

2) Type: Mirror with Stainless Steel Channel Frame. Product Number: Series B-1656. Tempered Glass 24 x 36-inch mirror. Substitutions may be allowed upon approval by the Director or designee.

3) Installation method and technique shall be according to the manufacturer's guidelines.

K. Electronic Locks & Camera(s)

1) A lockable, weather-proof infrastructure cabinet or dedicated space separate from the custodial/maintenance chase or closet is required for computer and smart irrigation controller.

2) Electronic Locks: Manufacturer and type and installation/location(s) TBD, depending upon site

3) Camera: Manufacturer and type and installation/location(s) TBD, depending upon site

1. TRASH CANS

   A. FEATURES

      1) All trash receptacles shall be accessible to persons with disabilities and located immediately adjacent to an accessible path of travel.

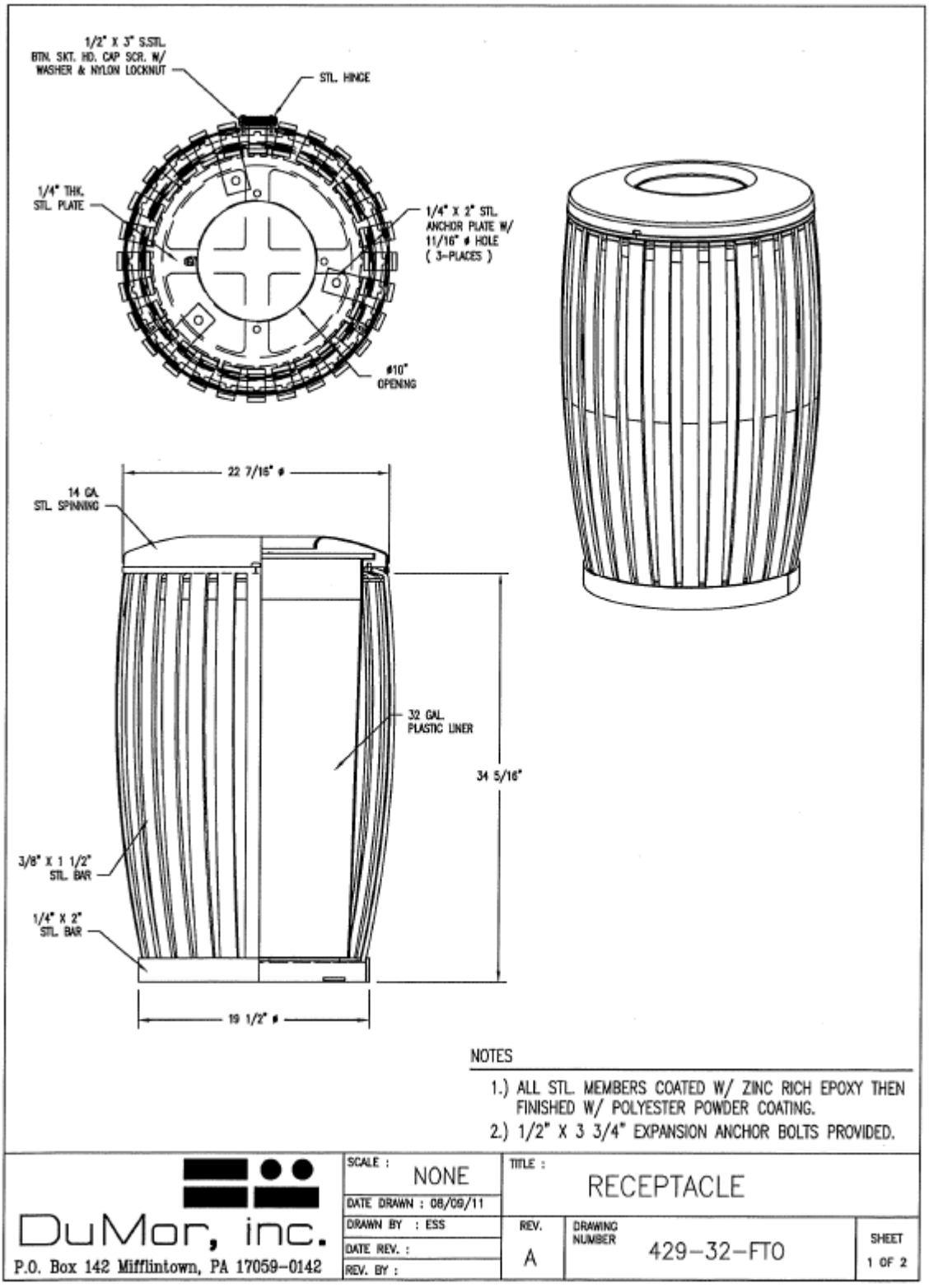
   B. STANDARD

      1) A sufficient number of trash receptacles shall be provided to serve the users of the park along the path of travel, and/or a convenient distance from a major park amenity, but no less than one for each park.

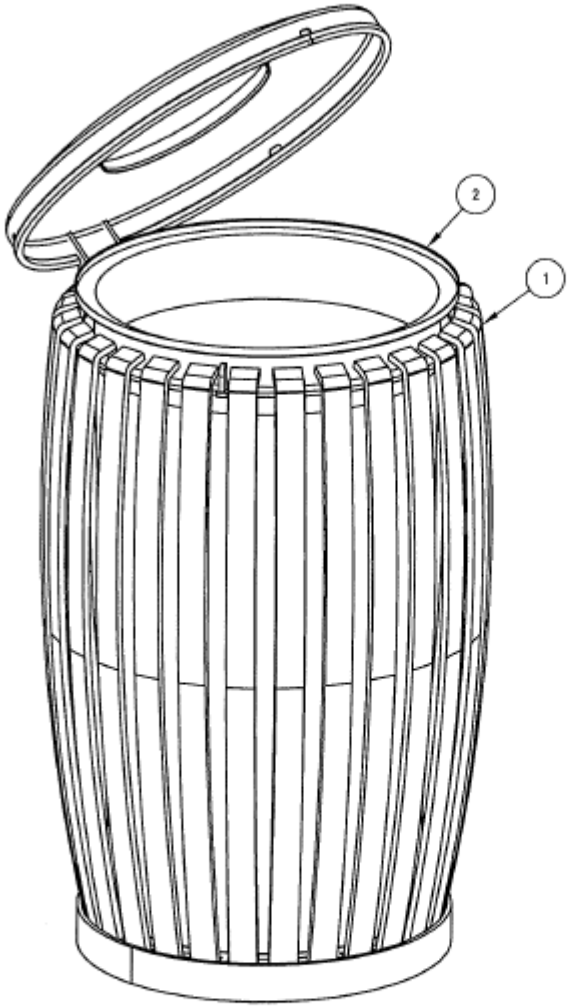
   C. Manufacturer:

      1) DuMor Site Furnishings

      2) 32 gallon all steel design with optional steel shield and polyester powder finish in Black. Product Number: 102-32SH. Substitutions of color may be allowed upon approval by the Director or designee.


1/2" X 3" S.STL. BTN. SKT. HD. CAP SCR. W/ WASHER & NYLON LOCKNUT
STL. HINGE
1/4" THK. STL. PLATE
1/4" X 2" STL. ANCHOR PLATE W/ 11/16" ø HOLE (3-PLACES)
ø10" OPENING
22 7/16" ø
14 GA. STL. SPINNING
32 GAL. PLASTIC LINER
34 5/16"
3/8" X 1 1/2" STL. BAR
1/4" X 2" STL. BAR
19 1/2" ø
NOTES
1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED.
DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142
SCALE : NONE
DATE DRAWN : 08/09/11
DRAWN BY : ESS
DATE REV. :
REV. BY :
TITLE : RECEPTACLE
REV. A
DRAWING NUMBER 429-32-FTO
SHEET 1 OF 2

NOTE:
1.) THE ACTUAL PARTS WILL NOT BE NUMBERED: NUMBERS ONLY APPLY TO DRAWING.
2.) RECEPTACLE FULLY ASSEMBLED AT FACTORY.



ITEM	QTY	PART NO	DESCRIPTION
1	1	0-429-FTO	30 GAL STL RECEPT ASMBLY, FLAT TOP COVER
2	1	5-44-053	32 GAL PLASTIC LINER
3	1	K-ANCO660-3	1/2" X 3 3/4" SS ANCHOR KIT (3PCS)

DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142

SCALE : NONE	TITLE : RECEPTACLE			
DATE DRAWN : 08/09/11				
DRAWN BY : ESS	REV. A	DRAWING NUMBER 429-32-FTO		SHEET 2 OF 2
DATE REV. :				
REV. BY :				

NOTES:

1.) DURING ASSEMBLY PROCEDURE; DO NOT COMPLETELY TIGHTEN HARDWARE.
2.) THE ACTUAL PARTS WILL NOT BE NUMBERED. NUMBERS ONLY APPLY TO DRAWING.
3.) UPON COMPLETION OF ASSEMBLY SQUARE ALL COMPONENTS THEN TIGHTEN ALL HARDWARE.
4.) MOUNT AND ANCHOR AS SPECIFIED.

TOOLS REQ'D

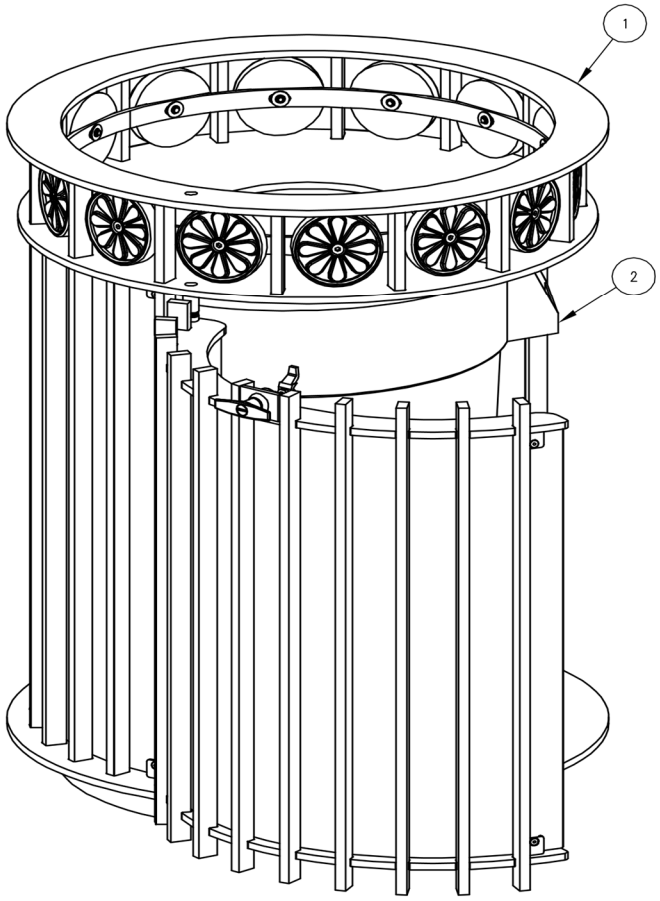
3/4" WRENCH
1/2" MASONRY DRILL BIT
DRILL

PARTS LIST

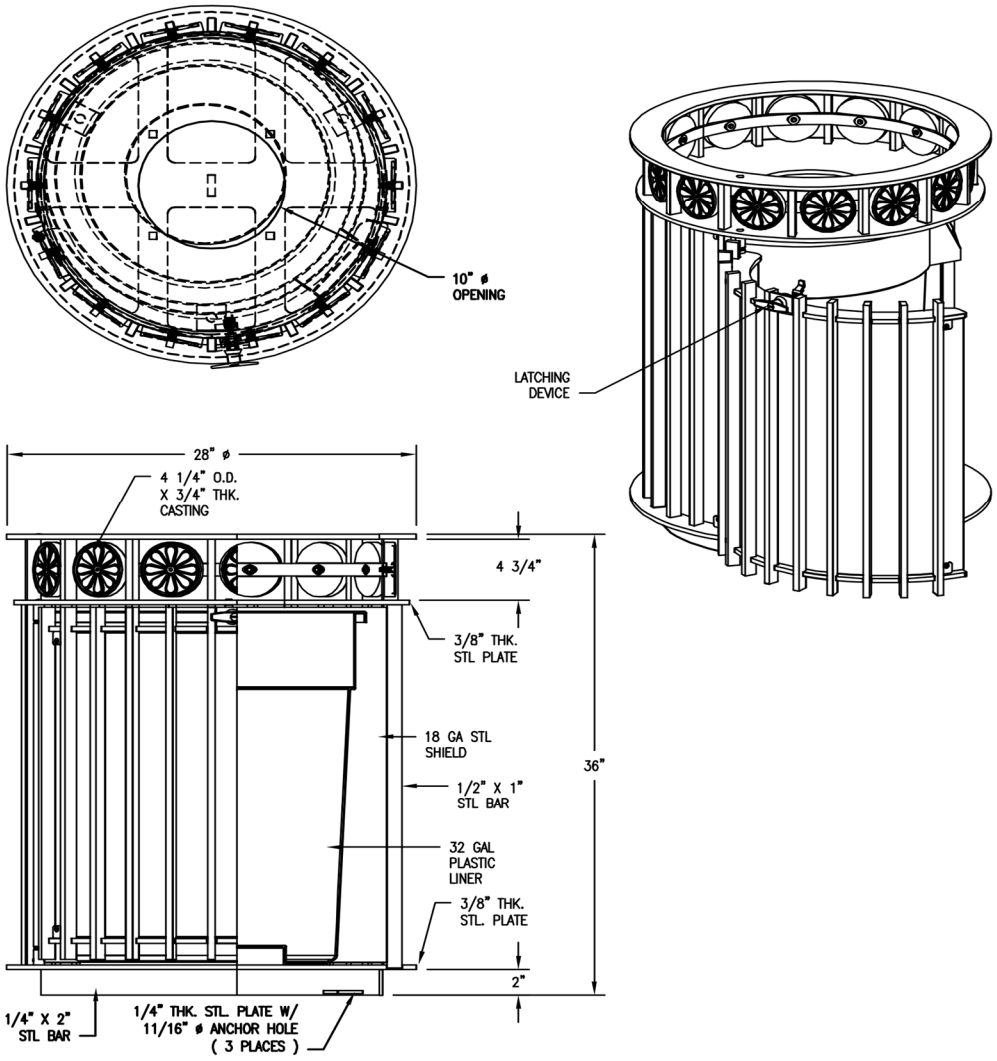
ITEM	QTY	PART NO	DESCRIPTION
1	1	0-102-30SH-FTO	30 GAL STL RECEPT ASMBLY W/ FLT TOP
2	1	49-32	32 GAL PL LINER W/ HANDLE, BLK

KITS PROVIDED

ITEM	QTY	PART NO	DESCRIPTION
3	1	K-ANC0860-3	1/2" X 3 3/4" SS ANCHOR KIT (3PCS)



DuMor, inc.	ASSEMBLY INSTRUCTIONS	DATE DRAWN : 12/01/00 DRAWN BY : HD DATE REV. : 8/7/17 REV. BY : JSB	REV. F	DRAWING NUMBER 102-32SH-FTO	SHEET 2 OF 2



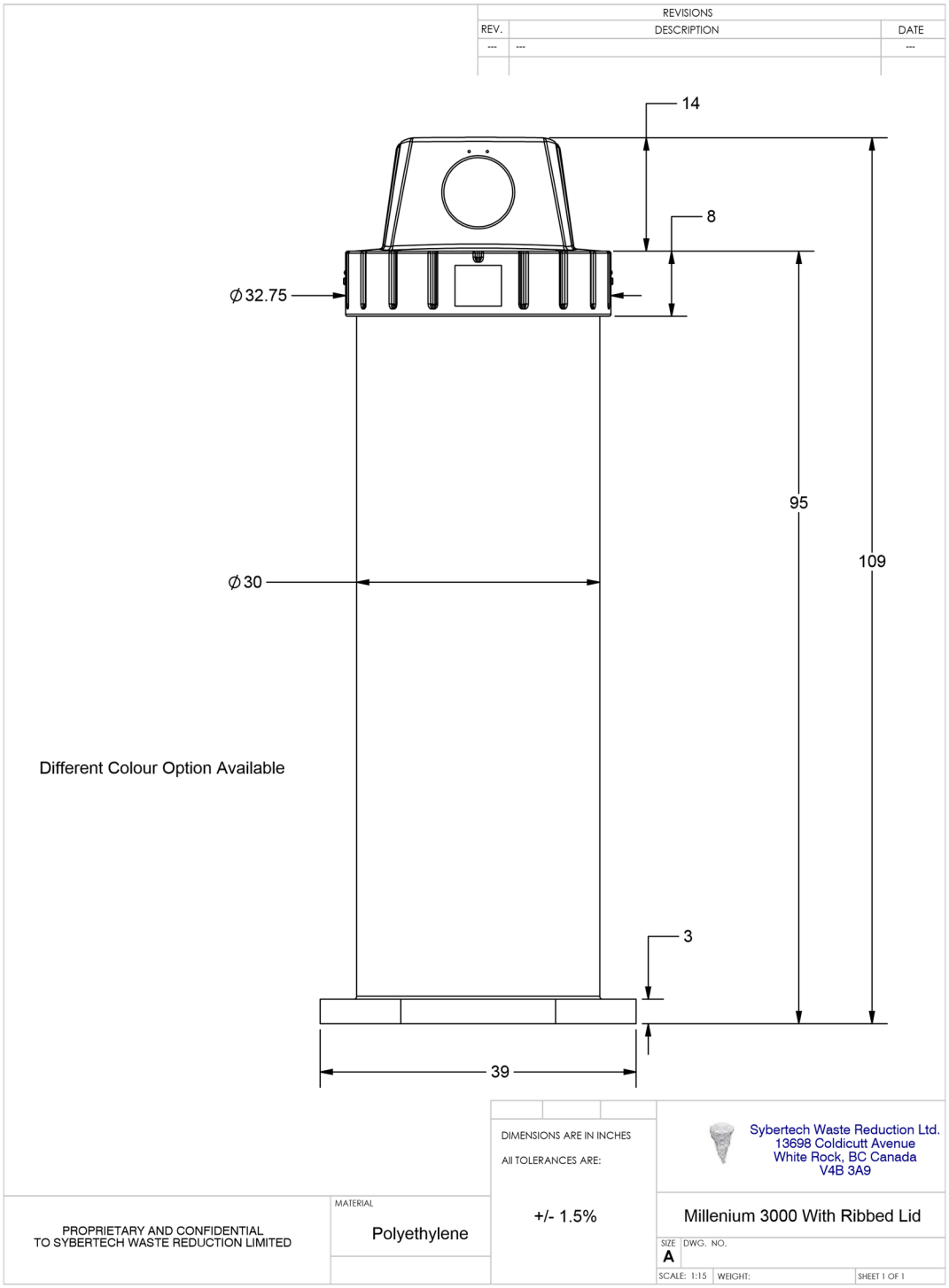
NOTES:

1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED.
3.) SIDE OF RECEPTACLE HINGES OPEN FOR REMOVAL OF LINER.
4.) LATCH PROVIDED W/ KEY, USE OF KEY OPTIONAL.
5.) RECEPTACLE FULLY ASSEMBLED AT FACTORY.

DuMor, inc.	RECEPTACLE	DATE DRAWN : 12/01/00 DRAWN BY : HD DATE REV. : 8/7/17 REV. BY : JSB	REV. F	DRAWING NUMBER 102-32SH-FTO	SHEET 1 OF 2

D. Alternate in-ground trash receptacle.

1) Will be specified by the City where and when required. Sybertech Waste Reduction Ltd. One-piece polyethylene container-no leach in or out, 300-gallon Capacity, 8-foot-tall, 30-inch diameter cylinder buried into the ground 5 feet. Product Number Millennium 3000. (See Fig. 5.)



2. INSTALLATION

A. At least one trash receptacle shall be located within convenient proximity of each:

1) Park building including community center and/or restroom.

2) Picnic area

3) Playground area

4) Athletic fields and sports courts

5) Entry into the park from the parking area

3. Dog Waste Station

A. FEATURES

1) All trash receptacles shall be accessible to persons with disabilities and located immediately adjacent to an accessible path of travel.

B. STANDARD

1) Manufacturer: DogiPot or equivalent.

2) Free Standing 10 gal., bag dispenser, covered waste receptacle in a green smooth finish. Model #1003-L

3) Material for bag dispenser shall be metal.

4) 8 ft. telescopic post set in concrete.

C. INSTALLATION

1) Santa Clara City Code Chapter 6.30 DOGS AND CATS (6.30.010 Restraint of dogs.), states: The owner of any dog shall keep and maintain such dog under their own physical restraint by use of a leash not to exceed six feet in length, or shall keep such dog sufficiently confined behind a fence of reasonable height. Signage referring to Santa Clara City Code 6.030.010 should be added to the Dog Waste Station wherever and whenever feasible.

2) At Santa Clara City parks larger than 1.0 acre at least one dog waste bag dispenser station should be installed at appropriate location(s) and should not be intrusive or placed immediately adjacent to picnic tables and barbecues or protrude into pathways.

3) Additional signage may be required on the reverse side of the station's Post (meaning two signs with varying message may be required.)

4) City to determine appropriate language on signs, multilingual if necessary, including citation of City Code sections pertaining to leash law, nuisance animals and others as required by City Parks & Recreation.

Dog waste bag dispenser stations should be installed at the entrances of off leash dog areas.

DOGIPOTDOGIPOT® TELESCOPING POST® PET STATION ((ITEMITEM 1301-P #1003-L))

SPECIFICATION, INSTALLATION AND OPERATION SHEET

(A) DOGIPOT® PET SIGN (ITEm #1203 / 1204)

- H: 18" x W: 11.5"
- 14 gauge reflective aluminum •
- Weight: 1.35 lbs.
- Forest green on white

(B) ALumINum DOGIPOT® JuNIOr BAG DISPENSEr (ITEm #1002-2)

- H: 15'5" x W: 9.4" x D: 3.25"
- 12 gauge powder coated forest green aluminum
- Weight: 7 lbs.
- 400 bag capacity
- Two diamond shaped bag dispenser slots
- Front locking access panel
- Clearly posted instructions

(c) STEEL TrASH rEcEPTAcLE wITH LID (ITEm #1206-L)

- H: 23" x 11.5" diameter
- 16 gauge powder coated forest green steel
- Weight: 14.6 lbs.
- 10 gallon capacity with interior trash liner bag retainer bands
- Attached stainless steel hinged lid
- One (1) box 50 count DOGIPOT® Smart Liner Trash Bags™ included (5 lbs.) (ITEM #1404)

(D) TELEScOPIc GALVANIZED STEEL mOuNTING POST (ITEm #1301-P)

- 2" x 2" x 8'
- 11 gauge galvanized steel
- Weight: 15 lbs.

TOTAL HEIGHT FrOm ABOVE GrOuND:

- 6'.6"

SPAcE BETwEEN DISPENSEr AND SIGN:

- 1.0"

SPAcE BETwEEN rEcEPTAcLE AND DISPENSEr:

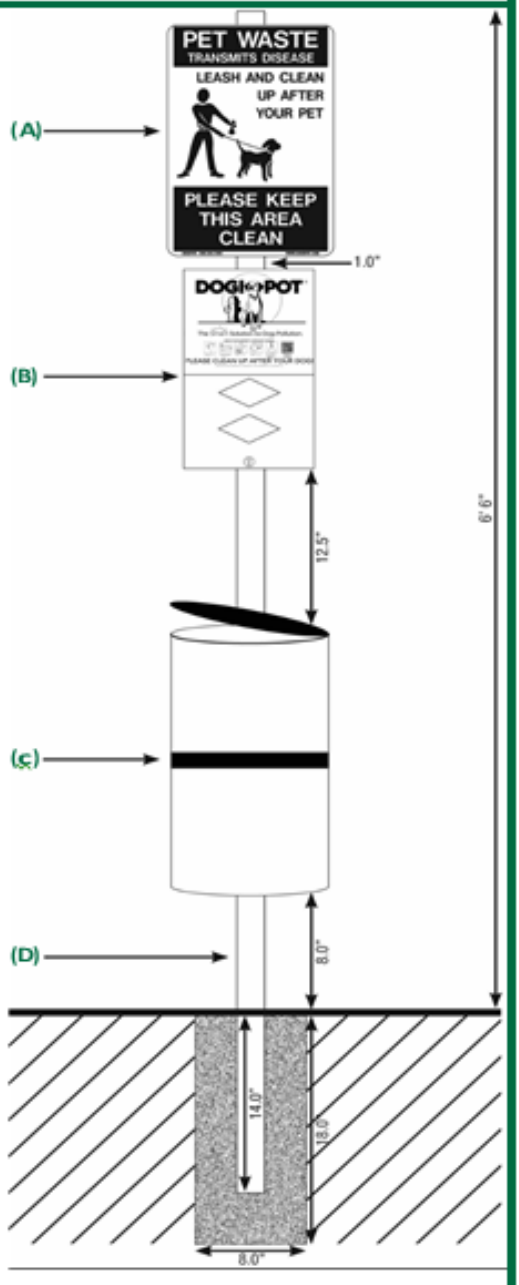
- 12.5"

SPAcE BETwEEN GrOuND AND rEcEPTAcLE:

- 8.0"

HOLE:

- D: 18.0" x W: 8.0"
- Fill with 40 lbs. "ready to use" cement



TOTAL SHIP wEIGHT: 45 LBS.
(mOuNTING HArDwArE INCLuDED)

Section 6 – Signage

1. DEFINITION

A. The purpose of this guideline is to establish minimum standards for park signage which includes wayfinding.

B. All signs used in public park areas should have a cohesive design theme consistent with City standards and which incorporate current City branding.

2. DESIGN STANDARD

A. Park signage includes:

1) Directional signs to the public park (wayfinding)

2) Park entry monument signs that designate the park name. Two alternatives are available:

a. Rectangular concrete sign with City seal and inset letters.

b. The traditional City Park Sign with brown wood plank with blue inset letters

3) Directory or way finding sign with map(s)

4) Intra-park directional signage

5) Park amenity signs – according to City branding guidelines and approved by City.

3. APPLICATION

A. The Park name sign and/or monument sign should be visible from multiple angles and associated with public access from public right of way near a major intersection or point of access and have visual prominence.

B. The park name sign must not be obscured by plants or utility boxes.

C. The City seal is required to be on the park name sign and/or the entry monument sign.

D. Any use of the City seal must be approved in advance by the City Manager's Office.

E. Coordinate an inspection date & time with Director. Inspection to be conducted by Director or designee.

1) Review accuracy of construction before final acceptance.

4. QUALITY ASSURANCE

A. Information herein contained indicates the types of materials and the quality of workmanship for full compliance with the City signage standard.

B. The work covered under this section includes supplying and installing all materials and equipment required for park signage.

5. MATERIALS

A. Concrete sign (see Attachment 1.0)

B. Manufacture: Quikcrete

C. Beveled on all eight (8) edges above monument base.

D. 30"h, 96"w, 6"d

1) City seal: 11" diameter affixed with vandal proof screw in center.

a. Park sign letters 6"h recessed 1/2"

b. City letters 3.25"h recessed 1/4"

c. Recessed field area 1/2" deep

d. Border top, right side, bottom 2"

e. Border at city emblem 20"w, 16" h

f. Two holes @ 56" on center equally spaced (28” from center) with threaded acme nut embedded into concrete top and bottom for lifting eye on top and anchor rod on bottom.

g. Finish smooth top, sides and bottom, sign field is a light exposed aggregate.

h. Back of sign is sanded finish.

i. All edges have a finished radius 3/8”

j. Contact City for current fonts to match current City branding and logos.

k. Sign base 12" h, 84"w, 12"d

l. Mow band 36"d, 108"w

E. Wood Sign

a. Sign board 2x12x96 (1.5x11 nominal)

b. Rot resistant wood (cedar, redwood, etc.)

c. Corners radius 6"

d. Letters all caps 5.5"h

e. Posts 6x6x50" (5.5x5.5x60 nominal)

f. Top of post chamfered 1" all four edges

g. Upper sign mounted 5" from top of post to top edge of sign

h. Lower sign mounted 20" from top of post to top edge of sign

i. Posts added depth of one inch to accept sign

j. Edges of signs radius 1/2" front and back

k. Mow band 30" d, 120"w

l. Sign surface mounted to H-bracket embedded into concrete

m. H-bracket 4"×24"×1/4"

n. Sign boards mounted to posts using 4 carriage bolts (3/8” x 5”) and the nut is at the back of the post.

o. Nut recessed into the post to avoid injuries.

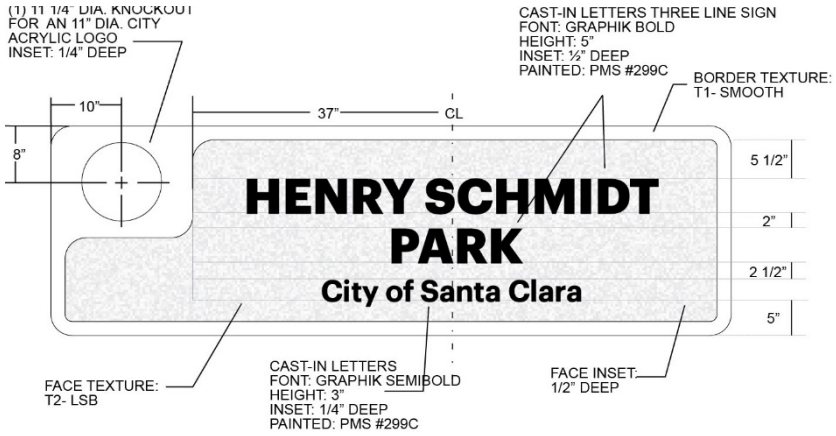
p. Bolts should be flush with back of post.

q. Posts should be 6’ apart and evenly spaced off the center line of the mow band

r. Paint Color—Entire sign must be primed.

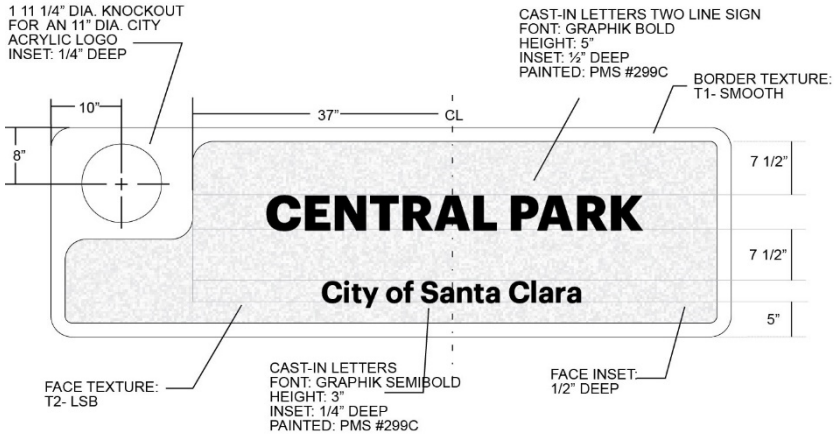
s. Color of letters, blue.

t. Color of the stain— (Oxford Brown).

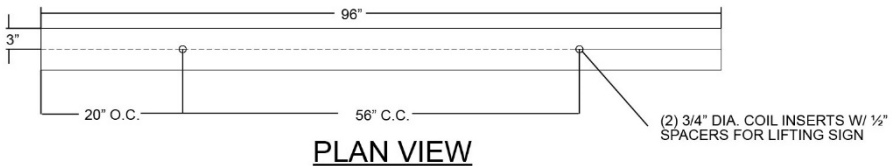


ALL EDGES TO HAVE 1/4" RADIUS MIN.
MANUFACTURING TOLERANCE +/- 1/4"
PRODUCT: ONE SIDED SIGN (96"L X 30"HT)
CONCRETE COLOR: C1-NATURAL
CONCRETE TEXTURE: SEE BELOW
SEALER: STANDARD GLOSS SEALER

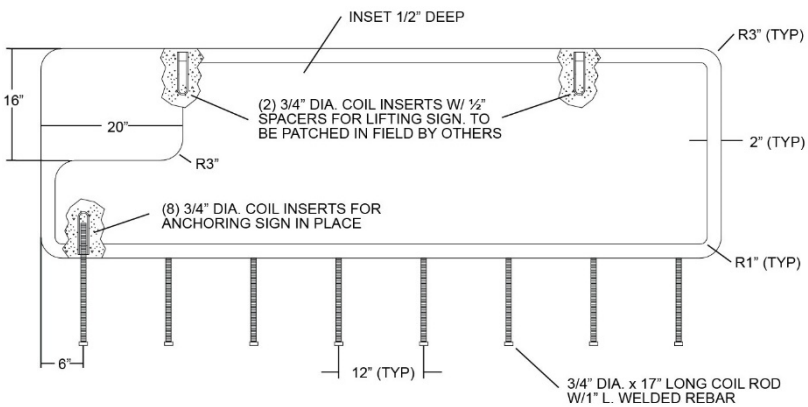
FRONT ELEVATION VIEW THREE LINE SIGN



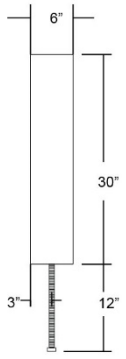
FRONT ELEVATION VIEW TWO LINE SIGN



PLAN VIEW



ELEVATION VIEW



SIDE VIEW

CHAPTER 2 Wet Utilities (Irrigation, Storm Water, Sewer)

Section 1 – General Irrigation

1. DEFINITION

   A. The purpose of this guideline is to establish minimum standards for general irrigation.

2. SCOPE: The Work of this Section shall consist of furnishing all labor, materials, equipment, attachments, and services necessary for the execution and completion of all **Irrigation Work** as shown on the Plans and as described in the Standards including, but not necessarily limited to, the following:

   A. Provide complete operating irrigation systems which integrates with the Rain Bird centralized irrigation system;
   B. Installation of new and refurbishment of existing irrigation systems as necessary to provide complete operating irrigation systems for all planting areas within the Work Limits.
   C. 120-volt electrical service for and connection to the controller.
   D. Irrigation Controller placement can be on a pedestal or in the building.
      1) Pedestal:
         i. The controller enclosure shall be stainless steel, lockable, sized to fit the controller and the other electrical component.
         ii. Irrigation controller electrical pedestal shall be stainless steel enclosure, or City-approved equal.
      2) Building:
         i. City preference: direct connect the controller by ethernet to the wireless access point (WAP)
         ii. Alternate: cell phone connection then radio.

E. Coordination of work with other sections of this document and/or other City Departments.

F. Sleeving: install according to plans.

G. Testing: confirm complete functionality of irrigation distribution system and full operation by controller.

H. Clean-up.

I. As-Builts by means of Global Positioning System (GPS) in electronic format preferably via AutoCAD, or PDF as an alternate.

J. Replacements, Repairs, Guarantees and Warranty Work shall be defined and confirmed by Director or designee.

3. STANDARDS

A. The irrigation design must include a holistic approach to landscape maintenance and management with the aim of conserving water, applying drought control techniques, and addressing specific site conditions and plant selection. The preference of irrigation water source should be in the following priority order:

1) Recycled Water (whenever connection to recycled water supply line is available and/or feasible) as per State Regulations.

2) Potable Water

B. Drip irrigation should be included in the irrigation design wherever and whenever applicable.

C. The irrigation design must provide for the separation of irrigation zones and sprinkler type based on the water requirements of the plants (hydration zones).

D. The work covered under this section includes supplying and installing all materials and equipment required for a complete operational automatic irrigation system.

E. The information herein contained indicates the types of materials and the quality of workmanship to ensure maximum efficacy of the irrigation system.

F. Completion of work shall mean the full and exact compliance and conformity with all the provisions of the contract documents.

4. SUBMITTALS

A. Provide manufacturer's product data sheets for each item specified.

B. Due to maintenance and repair issues, there shall be no substitutions for the materials listed in Parks & Recreation Specifications unless specifically authorized by the Director or designee.

C. Product certificates shall be required by manufacturers for products not specifically named on plans, or Parks & Recreation Specifications certifying that each product furnished meets the specifications shown on the plans.

D. Materials List: Contractor shall submit a complete materials list for approval by the City's Inspector prior to performing any work. Catalog data and full descriptive literature must be submitted whenever the use of items different than those specified is requested. For example, the notarized certificate must be submitted by plastic pipe and fitting manufacturer indicating that material complies with the Project Specifications, unless material has been approved by the Director or designee. Material list shall be submitted using the following format:

Item	Description	Manufacturer	Model No.
1	Pressure Supply Line	Lasco	Sch. 40
2	Lawn Head	Rain bird	2400

E. Provide a one-year warranty from the date of Substantial Completion to cover all defective material and workmanship.

5. QUALITY ASSURANCE

A. Landscape irrigation system installation shall only be performed by a firm that has a minimum of five (5) years full-time experience with similar projects in the successful installation of underground landscape irrigation systems. The firm shall be state certified or a licensed subcontractor or a locally registered subcontractor in California. Crews shall be controlled and directed by a foreman who is thoroughly familiar with the type of materials being installed and the manufacturer's recommended methods of installation.

B. Manufacturer’s Qualifications:

1) Employ only manufacturers with at least five (5) years’ experience making the specified materials as a current catalog and regular production item.

6. IRRIGATION DESIGN MODIFICATIONS

A. Slight layout modifications may be made only as necessary to meet field conditions and only as acceptable to the Landscape Architect and in accordance with South Bay Water Recycling standards. Piping shown on drawings is diagrammatically routed for clarity, route to avoid conflict with specimen plants and adjust as necessary to landscape construction.

B. Design Criteria:

1) The Architect or Landscape Architect shall have the right, at any stage of the design and construction phases, to reject any work, layout, or materials, that do not comply with the requirements of the Contract Documents.

2) Such rejected work or material shall be immediately removed from the site and acceptable work or material substituted in its place.

3) Contractor shall be responsible for verification at the site of all conditions and dimensions shown on the drawings prior to commencement of work.

7. AS-BUILT DRAWING/CLOSEOUT SUBMITTALS

A. After completion of piping installation, the Contractor shall furnish to the Architect an electronically reproducible "AS-BUILT" drawing (i.e., PDF or AutoCAD) showing all sprinkler heads, valves, and pipelines to reasonable scale, and provide a minimum of two dimensions taken from fixed obvious objects to point of connection, directional turns of all mainline piping, each automatic and manual control valve, each shut off valve, and each quick coupling valve. The plans shall be provided on or before the date of work review for provisional acceptance. GPS coordinates for each item listed below, shall be noted on the plans, and recorded on Compact Disk (CD) in WR format (See data dictionary for required information), on an Excel spread sheet to City for approval.

B. The Contractor shall also furnish a drawing showing a graphic representation of sprinkler zones and recommendations for controller time settings for each valve.

1) Instruction sheets and parts lists covering all operating equipment shall be bound into folders and furnished to the Landscape Architect.

2) Backflow preventer test report (passing).

C. Show locations and depths of the following tie-ins and modifications to existing irrigation system:

1) Point of connection, Water Meter and Backflow Assembly. (GPS)

2) Routing of irrigation pressure lines (dimension maximum 100 feet along routing).

3) Irrigation remote control valves, master valves filters, etc. (GPS)

4) Quick coupling valves. (GPS)

5) Routing of control wires.

6) Controllers. (GPS)

7) Flow Meters. (GPS)

8) Related equipment (as may be directed).

8. INSPECTIONS

A. Inspections will be required for:

1) Pressure test of irrigation main line.

2) System layout.

3) Coverage test.

4) Final inspection/start of maintenance.

5) Final acceptance.

B. Inspection Requests: Contractor shall notify the Public Works Landscape Inspector a minimum of 48 hours (two business days) in advance for all inspections including the following:

1) Pressure supply line installation and testing.

2) System layout.

3) Coverage tests.

4) Final Inspection.

C. Evidence of Inspection by Others: When inspections have been conducted by individuals and/or entities other than the Public Works Landscape Inspector and the respective Parks Division Manager, Contractor shall show evidence of when and by whom these inspections were made.

F. Requirements for Inspection: No inspection is to commence without "record" plans available onsite. In the event Contractor calls for an inspection without up to date "record" plans, without completing previously noted corrections, or without preparing the system for inspection, the inspection may be canceled.

G. Closing up Un-inspected Work: Do not allow or cause any of the Work of this Section to be covered up or enclosed until it has been inspected, tested and approved by the Public Works Landscape Inspector.

H. Coverage test: When the irrigation system is completed, Contractor shall perform a coverage test in the presence of the Public Works Landscape Inspector to determine if the water coverage for planting areas is complete and adequate. The Public Works Landscape Inspector and the Parks Division Manager must accept this test before planting may commence.

I. Hydrostatic test:

1) Prior to the installation of any valves, all pressure lines shall be tested under a hydrostatic pressure of 150 psi for a period of not less than two hours. Ball valves and pressure gauges shall be installed at all terminating ends of the mainline and the remainder of all points in between shall be capped, and the line fully charged with water after all air has been expelled from the line.

2) All hydrostatic tests shall be made in the presence of the Public Works Landscape Inspector or Parks Division Manager. No pressure line shall be backfilled until it has been inspected, tested, approved in writing, and the mainline and valve locations have been noted on the "record" prints.

3) Contractor shall furnish the necessary force pump and all other test equipment and shall perform the test.

9. UTILITIES

A. Prior to excavation, verify in the field the location and depth of all new and existing utilities including potable and/or recycled water mains, existing irrigation, existing pathway lighting wiring, sewer lines, storm drainage and other work that may be damaged by the Contractor's construction.

10. GUARANTEES

A. The entire irrigation system, including all Work done under this Contract, shall be guaranteed against all defects and fault of material and workmanship. The Contractor shall furnish warranties, in writing, certifying that the quality and workmanship of all materials and installation furnished is in accordance with the Contract Documents, in accordance with the original manufacturer's warranties.

   1) The Contractor shall be responsible for the fulfillment of all manufacturers' warranties.
   2) The Contractor shall guarantee materials and workmanship for a period of one year from date of granting Substantial Completion by the City.
   3) The Contractor is responsible for protection of the work until the date of Final Completion.
   4) Should any problem with the irrigation system be discovered within the guarantee period, it shall be corrected by Contractor at no additional expense to City within fourteen (14) calendar days of receipt of written notice from City.

11. MATERIALS

A. Materials and equipment shall be new and shall operate at the manufacturer's published capacities.

B. PIPE—Comply with the following unless otherwise indicated:

   1) Pressure supply lines 2 inches in diameter and up to 8 inches in diameter shall be either Class 315 solvent weld PVC or C900 Class 200.
   2) Pressure supply lines 1-1/2 inches in diameter and smaller shall be minimum schedule 40 PVC ASTM D-1785.
   3) All PVC lateral pipe shall be Schedule 40 ASTM D-1785 Polyvinyl Chloride, Type 1, NSF approved.

4) All irrigation pipes shall be purple in color to prevent potential of cross contamination (potable & recycled waterlines).
5) All crossings (sleeves) under paved areas shall be Schedule 40 PVC, ASTM D-1785.
6) PVC socket fittings shall comply with ASTM D 1785, type 2, IPS, Schedule 40 NSF as manufactured by Sloan Manufacturing Co., or Lasco.

12. TURNOVER ITEMS

A. Controller Charts

1) "Record" prints must be approved by the Public Works Landscape Inspector before charts are prepared.
2) Provide one controller chart for each automatic controller. The chart shall show the entire area covered by the controller, preferably in a single sheet. The chart shall be a reduced copy of the approved "record" print. Reduce the print to a size that is the maximum dimensions that will fit within the controller door without folding. If the controller sequence is illegible at this reduction scale, the chart may be provided as a "multi-sheet" chart to provide adequate legibility.
3) Each control station on the Chart shall be marked with a different color to show its area of coverage.
4) When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being minimum 20 mm in thickness. The chart shall be installed in the controller enclosure using Velcro fasteners, and three different color grease pencils (red, black and blue) shall be provided in the enclosure for maintenance notations on the chart.
5) Controller charts shall be completed prior to the final acceptance inspection.

B. Operation and Maintenance Manuals: Within a minimum of 14 calendar days prior to acceptance of construction, prepare and deliver to the Public Work Landscape Inspector

all required descriptive materials, properly prepared in two individually bound copies of the operation and maintenance manual. The manual shall describe the material installed and shall be in sufficient detail to permit operating personnel to identify, operate, and maintain all equipment. Spare parts lists and related manufacturer's information shall be included for each equipment item installed. Each complete, bound manual shall include the following information:

1) Index sheet stating Contractor's address and telephone number, including names, addresses and telephone numbers of local manufacturer's representatives.
2) Complete operating and maintenance instructions on all major equipment.

C. Materials to be furnished: The following items shall be supplied as part of this Contract and shall be turned over to the Public Works Landscape Inspector at the end of the Project at the Final Acceptance Inspection.

1) Two (2) special tools/wrenches for disassembly and adjustment of each type of irrigation equipment/heads installed that require such special tools/wrenches.
2) Two keys for each type of automatic controller.
3) One valve box cover key.
4) "Record" prints, CD's and "As-Built" Plans at Final Acceptance.
5) Documentation of Water Department's inspection and acceptance of backflow assembly.

Section 2 – Planting Irrigation

1. DEFINITION

A. The purpose of this guideline is to establish minimum standards for planting area irrigation in parks.

2. CONTROLLER WITH REMOTES

A. Minimum of 2 remotes.

B. The Contractor shall furnish Rain Bird electric controller for up to 48 zones, Rain Bird ESP-LXMEF electric controller for more than 48 zones, or equivalent Rain Bird controller, that is completely compatible and must completely integrate with the IQ v2.0 Modular Multi-site Central Control system as indicated on the drawings and as specified herein.

C. The controller(s) shall be installed in the area(s) shown on the drawings.

D. All electrical connections are the responsibility of the Contractor. Materials for electrical service shall comply with the standard specifications, governing utility agency standards, and requirements of all applicable codes. All controllers serving landscape areas that will not be turned over to the City for maintenance shall be powered through a metered electrical service.

E. A typewritten plastic laminated legend shall be attached inside the controller(s) door stating the areas covered by each remote-control valve.

F. Pressure regulator

   1) Wilken or Febco

   2) Shall be installed on all irrigation lines.

   3) Shall have an operating range of 25 PSI to 75 PSI.

G. Master valve

   1) Normally open

   2) Rain bird PEB valve

H. Flow meter

   1) Rain Bird FS200 B or equivalent

I. Wiring Installation

   1) Four (4)14-1 wires shall be installed in rigid conduit from the POC to the irrigation controller for a Flow Sensor and Master Valve. The wires shall be a continuous run

without any junction boxes or splices. They shall be installed in the controller and terminated in a valve box at the POC There shall be sufficient length of wire to allow easy installation.

2) The wires shall be:
    a. One (1) black wire and one (1) red wire, label “Flow Sensor” at the POC and the controller.
    b. One (1) yellow wire and one (1) blue wire, label “Master Valve” at the POC and controller.

3. SPRINKLER HEADS
    A. Pressure regulating sprinkler heads should be incorporated into irrigation design to maximize water conservation and to reduce output variation between heads.
    B. A minimum of two bubblers shall be placed at each tree and placed at the edge of the root ball and the surrounding soil to promote rapid root growth into the surrounding soil.
    C. Recommended manufacturer: Rain Bird.

4. RISERS AND SWING JOINTS
    A. Risers shall be Schedule 40 pipe, 36”, or at anticipated height of plantings. Poly-pipe shall not be used in swing joints.
    B. Swing joints shall be schedule 80 threaded risers with three threaded Marlex fittings.

5. BALL VALVES
    A. Shall be all brass body or approved equal.

6. ISOLATION VALVE

A. Valve shall be a ball valve to be placed before valve manifold.

7. REMOTE CONTROL VALVES

A. Valves shall be Rain Bird PEB valves. Use Teflon tape only on threaded connections. Only one valve shall be placed in a single valve box.

B. Valve shall be installed with threaded elbow or union on mainline side and a union on the lateral side.

C. Valves shall be installed in shrub areas whenever possible. No valves or valve boxes other than quick coupler valves shall be installed within a designated turf area.

8. QUICK-COUPLING VALVES

A. Quick coupling valves shall have locking vinyl cover and shall be 1" in size.

B. Install quick couplers within valve boxes per the Parks & Recreation Department's standards at maximum 75' on center and maximum 50' from ends of all planting areas.

9. VALVE BOXES AND TAGS

A. Valve boxes (bodies and covers) shall be purple in color and shall be 12” x 17” rectangular box installed flush with finish grade. Valve boxes shall be marked “IRRIGATION”. Each valve shall have a Christy zone tag inside the valve box.

10. CONTROL WIRING

A. All wiring to automatic circuit valves shall be UF-14 (14 gauge) UL approved, direct burial wire of a different color than the black and white wires used on the 115-volt AC

power. 18-gauge multi-strand wire shall be used from the controller to a wall mounted junction box below the controller and shall be connected to the 14-gauge zone wires.

B. Wiring from the controller to the valves shall be installed in same trench as the mainline where possible. Where wires are not placed in the trench with the mainline, install in schedule 40 PVC conduit, minimum of 18” below grade.

C. All wire shall be furnished in minimum 2,500' reels and spliced only at valve or “T” locations.

D. Each valve shall have a second wire to serve as a backup if the first wire becomes comprised.

11. BACKFLOW PREVENTER

A. Backflow preventer: A backflow preventer shall be installed on all irrigation sprinkler systems. The assembly shall be the same size as the meter and shall be a Watts 909 Reduced Pressure Zone (RPZ) mounted on Schedule 80 PVC for 2-inch and less. For larger than 2-inch, the assembly shall be mounted on cemented ductile iron pipe or as required by the Purveyor. The location shall comply with regulatory agencies.

12. SOLVENT CEMENT/SOLVENT & CLEANER

A. Solvent Cleaner shall meet ASTM A 2546 standards and be all purpose plastic pipe cleaner.

Section 3 – Execution

1. INSPECTION

A. The contractor must examine the areas and conditions under which landscape irrigation system is to be installed and notify the City of Santa Clara in writing of conditions detrimental to the proper and timely completion of the work.

B. Schedule and complete an inspection date & time with Director, or designee.

1) Review accuracy of construction

2) Do not proceed with the work until unsatisfactory conditions have been corrected and approved.

2. IRRIGATION SYSTEM DESIGN & WATER SUPPLY

A. The irrigation system design is based upon an available water pressure at a specific PSI and flow rate (GPM). Individual stations are designed to this minimum PSI. The system is also designed to withstand the maximum pressure of the determined PSI. Contractor shall verify the size of the existing water supply/meter and the existing operating water pressure at the water supply location shown on the Plans prior to starting construction. Contractor shall notify the Public Works Landscape Inspector in writing of any discrepancies noted. Failure to provide such written notification may cause Contractor to make modifications to the irrigation system as necessary to provide for a fully operational system with 100% coverage at the operating pressure available, all at no additional cost to City.

B. Connection to, or the installation of, the water supply shall be at the location shown on the Plans. Minor changes caused by actual site conditions shall be made at no additional cost to City.

3. COORDINATION

A. Crossings (sleeves) under paved areas (such as sidewalks, roadways, and parking lots) as indicated, shall be installed by the Contractor.

B. Crossings shall be installed prior to construction of paving.

C. The Contractor shall be responsible for coordinating work with all other parties involved with the project and shall coordinate the supply of electrical power to the Timing Device (controller) and tie-in into grounding system.

D. The Contractor shall be responsible for full and complete coverage of all irrigated areas and shall make any necessary minor adjustments at no additional cost to the City of Santa Clara.

4. EXCAVATING AND TRENCHING

A. Underground Service Alert (USA) shall be done prior to excavation and trenching. Where major root systems of large existing trees are encountered, including roots 4” diameter or larger, tunnel to avoid cutting the roots. Contractor is responsible for all damage due to improper work safety techniques, or if no USA was conducted.

B. Restore to their original conditions, all surfaces, existing underground installations, and those damaged or cut because of the excavations.

C. Trenches for pipelines shall be made of sufficient depth to provide the minimum cover from finish grade as follows.

1) 24" minimum cover over main lines.

2) 24" minimum cover over control wires.

3) 18" minimum cover over lateral lines to heads.

D. Make all necessary measurements in the field to ensure precise fit of items in accordance with the original design. Contractor shall coordinate the installation of all irrigation materials with all other work. Special attention shall be given to coordination of piping

locations versus tree and shrub locations, and sleeve locations versus pavement installation to avoid conflicts.

E. Keep trenches free of obstruction and debris. Remove excess soil from the site and leave grade as it was prior to irrigation system installation.

F. Piping shall be routed around shrubs, trees and other permanent obstacles.

G. Permanent resurfacing damaged or removed because of Contractor's operations shall be reconstructed by Contractor to the same dimensions, except for pavement thickness, and with the same type materials used in the original work.

H. Trench resurfacing shall be 1 inch greater in thickness than existing pavement. Concrete pavement shall be removed and replaced in "full panels" with no horizontal dimension less than five (5) feet. Contractor shall review the planned limits and lines of concrete removal and replacement with the Parks & Recreation designee prior to saw cutting for removal work.

5. GRADES

A. Contractor is to keep within the specified material depths with respect to finish grade. Failure to obtain specified material depths may subject Contractor to adjusting the grades or depth of lines until acceptable depths of cover are achieved, all as directed by the Parks & Recreation designee and at no additional cost to City.

6. PIPE-LINE ASSEMBLY

A. Install plastic pipe as recommended by the manufacturer and provide for expansion and contraction. Cut plastic pipe square. Remove burrs at cut ends prior to installation so that a smooth unobstructed flow will be obtained. Provide continuous support of the pipe using an unobstructed even trench bottom that is free of debris.

B. Install remote control valves at locations no closer than 12" to weld edges, buildings, and walls.

C. Plastic pipe fittings shall be solvent welded using solvents and methods as recommended by manufacturer of the pipe, except where screwed connections are required. Pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before applying solvent with a non-synthetic bristle brush. Care should be taken not to use an excess amount of solvent, thereby causing a burr or obstruction to form on the inside of the pipe. Allow the joints to set at least 24 hours before applying pressure on PVC pipe. Flush main and lateral piping on irrigation system to clean out all debris and sediment prior to the installation of heads and nozzles.

D. Pressure test the mains a minimum of 2 hours at 150 PSI. Center-load all plastic pipe prior to pressure testing. The entire system shall be operating properly before any planting operations commence.

E. Sprinkler heads shall be installed so that the top is slightly above finish grade. If finish grade has not been established, set the top of the sprinkler head 4" above grade and lower the sprinkler head when finish grade has been established and sod/mulch has been installed. Heads along curbs and walks shall be set flush to within 1/8" and 6" away from curb or walk. Heads and piping adjacent to buildings shall be a minimum of 12” off face of building. No application of water shall be made within 12” of the exterior building walls. Sprinkler heads adjacent to bus loop shall be located 48” from back of curb or as shown/noted on irrigation plan. Adjust heads having an adjustment stem, for the proper radius and throw for the area involved. Do not allow over-spray on buildings, walkways or on motor vehicles.

F. Irrigation heads shall be installed as designated on the plans and per the Parks & Recreation Department's standard details. Upon coverage testing of the system, if 100%

coverage is not afforded by the system as designed, additional heads shall be added as necessary to achieve 100% coverage.

G. All control wires shall be installed in a neat and orderly fashion underneath the main and lateral pipes, if possible. 10" loops shall be provided at each valve where control wires are connected.

H. All piping and wiring passing under existing or future paving, construction, etc., shall be encased in sleeve(s) as specified, extending at least 12" beyond edges of paving base or construction.

I. Install warning tape directly above pressure piping, 12 inches below finish grade except under paving or slabs or where depth shall be 6 inches.

7. BACKFILLING AND COMPACTING

A. After pressure testing is complete and systems are approved, or sections thereof, backfill excavations and trenches with clean soil, free of rubbish. Dress off all areas to finish grades. Repeat backfilling as required due to settlement.

B. Balance and adjust the irrigation system components for efficient, proper operation. This includes controller synchronization as well as individual controller stations, valves and sprinkler head adjustments. Do not allow over-spray on buildings, walkways or other paving or on automobiles.

C. Backfill shall be uniformly tamped in 4-inch layers under and around the pipe for the full width of the trench and the full length of the pipe. Materials shall be sufficiently damp to permit thorough compaction, free of voids. Backfill shall be compacted to dry density equal to adjacent undisturbed soil and shall conform to adjacent grades.

D. Flooding in lieu of tamping is not allowed without specific prior written approval of the Parks & Recreation Department.

8. RAIN SENSOR

   A. Install rain sensor on exposed surface that is unobstructed from rainfall. Install rain sensor control wiring in rigid conduit as according to plan detail. Preferred location of the rain sensor is within 20 feet of the controller.

9. LABELS

   A. Number each zone valve box on inside of valve box with a Christy zone tag. Numbers shall match the zone numbers on the drawings.
   B. Number each zone valve control wire at the controller with a waterproof marker and tags. Numbers shall match the zone numbers on the drawings.

10. PRESSURE TESTING/SYSTEM DEMONSTRATION

   A. All piping, connectors and valves shall be hydrostatically pressure tested. The mainline test shall last for a minimum of six (6) hours at 100 PSI. All leak areas and equipment shall be replaced, and the system shall be re-tested until no leaks are found. All testing shall be done before backfilling trenches.
   B. Provide a complete demonstration to the City of Santa Clara's Authorized Representative of the operation of all components of the irrigation system as part of close-out procedures.
   C. Provide complete typewritten instructions for operation including recommended watering times, duration, and preventative maintenance.

11. MAINTENANCE

   A. Maintain the irrigation system until the date of Final Completion.
   B. Maintenance shall include work, materials, and replacements necessary to insure a complete properly operating system.

12. CITY'S RESPONSIBILITY FOR MAINTENANCE

A. It is the City's responsibility to maintain the system in working order during the guarantee period, performing necessary minor maintenance, keeping grass from obstructing the sprinkler heads and preventing vandalism and damage during the landscape maintenance operation.

13. CLEAN-UP

A. Upon completion and prior to inspection of the work, clear the site of debris, superfluous materials and equipment.

CHAPTER 3 DRY UTILITIES (ELECTRIC & CITY FIBER)

Section – 1 Utility Design

1. All Exterior Lighting must comply with California's Building Energy Efficiency Standards Title 24, Part6.
2. Design utility corridors in close proximity to roads and major walkways, to reduce future disturbanceof these areas from maintenance and repair operations.
3. Electrical design for park facilities should comply with the current adopted edition of all applicable local, state, federal codes, and standards.
4. The design should provide for the efficient use of energy through proper equipment selection andsystem controls.
5. Oversize electrical panel by 30% for future expansion.

6. Power, telephone, and lighting panels should not protrude into any aisles or corridors. No panels should be installed in fire corridors unless panels are mounted in closets with fire rated doors.
7. Lighting and appliance panel boards must have no less than one spare circuit breaker for every fiveactive circuits.
8. All exterior receptacles must have rainproof enclosures with lockable covers.
9. All parking lot and walkway poles should be twelve (12) to eighteen (18) feet in height depending on the park site.
10. Provide time programmable switches with battery backup device for all exterior lights.
11. Provide interior restroom movement sensors (adjustable by field agency) for all restroom lighting systems.

Section – 2 Lighting

1. Lighting and electrical plans and specifications shall be prepared by a State of California licensed Electrical Engineer.
2. All designs shall comply with the applicable County of Santa Clara requirements including, but not limited to, traffic signal and street lighting requirements, Standard Specification for Public Works Construction, and Title 24 as applicable.
3. Light fixture locations and plant locations shall be coordinated so that plants do not obscure the lights at maturity.
4. Interior sports lighting systems shall consider the use natural light to minimize electricity use during the day. The consultant or developer shall evaluate gymnasium sports lighting systems including use of pulse start metal halide, multi-ballast florescent fixtures and protective covering(s).
5. Consultant or developer shall consider the merits of using occupancy sensors and lighting

automatic lighting control systems to switch lights. This includes but is not limited to automatic lighting controls, day lighting controls, and programmable lighting controllers to minimize energy consumption from lighting.

6. All lighting systems shall use internal reflectors and exterior louvers to reduce light pollution. Use high efficiency lighting with low cut off angles and down-lighting and allow no direct-beam exterior lighting at the property line.
7. Underground conduit improvements shall be in Schedule 40 PVC pipe, minimum size of one inch. Above ground conduit improvements shall be in galvanized rigid steel pipe. When adjacent to a sidewalk, conduit shall be installed parallel to the sidewalk with adequate clearance from irrigation lines and other utilities.
8. Pull boxes for high voltage site and sports lighting shall be placed in the sidewalk or within concrete areas where possible. Pull boxes are required at each light standard when light standards are placed further than 50 feet apart. Pull boxes shall be concrete with a bolt-down cover.
9. All light poles shall be located in shrub beds and mulch areas whenever possible. When light poles are located in turf areas, they shall be adjacent to walkways with a concrete pad. If it is not feasible to locate light poles adjacent to walkways, light poles in turf areas shall have a concrete mow curb at the base.
10. All light fixtures shall be approved by Director or designee.
11. Light poles and irrigation head layout shall be coordinated to allow for full irrigation coverage and to avoid spraying poles.
12. Light pole standards shall not be placed in or near a playground where collision with the pole is likely.
13. Anchor bolts for light poles shall not be exposed. Anchor bolts shall be covered with grout, or a metal shroud provided by the manufacturer.
14. All outdoor lighting controls shall be flush mounted and installed in lockable and vandal-

proof enclosures.

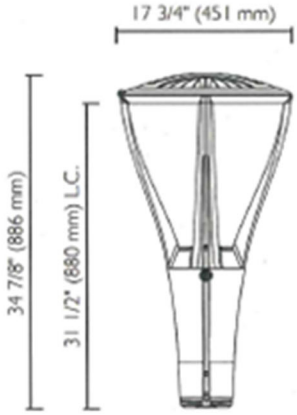
15. Lights recessed in paving or landscaping are discouraged due to potential vandalism and water damage.

Section – 3 Security Lighting

1. All parks shall be designed with security lighting along walkways, on restroom buildings, and in parking areas.
2. Security lights are to be mounted on building walls where possible.
3. The minimum amount of lighting along all walkways and in parking areas shall be 0.5 foot-candles (fc), with a uniformity rate of six.
4. The fixtures shall have a Classification of Type I or cut-off per the Illumination Engineering Society (IES) standards. The refractor shall be U.V. stabilized prismatic acrylic or polycarbonate; glass is not acceptable. Each fixture shall be individually switched by means of a twist-lock photocell.
5. Lighting circuits shall be energized by means of a lighting controller so each system has the capability of being switched off at a pre-determined time.

UrbanScape
Data Sheet

L1A, L2, L3, L4, L4A



UrbanScape is approved by:

lighting facts

ida

MPTC

Conform to the UL 1598 and CSA C22.2 No. 250.0-08 standards

Suitable for operation in an ambient temperature up to 40°C / 104°F - UL certified (Runs cool in almost every climate).

The MetroScape meets the ANSI C136.31-2001 table 2, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100 000 cycles by an independent lab)

EPA:
1.7 sq ft

Weight:
32.2 lbs (14.6 kg)

How to calculate the system lumen per watt ratio (LER):
First, visit our website at www.philips.com/lumec and download the IES file (photometric file) of your selected Philips Lumec product. Then, use a photometric software to get the absolute system lumens value and divide by the system wattage. (Example: 35W32LED4KES : Absolute system lumens / 42W = LER)

LED Lamp Details

LED = Philips Lumileds Luxeon R, CRI = 70, CCT = 4000K (+/- 350K)
System (LED + driver) rated life = 100,000 hrs[1]

LAMP	TYPICAL DELIVERED LUMENS	TYPICAL SYSTEM WATTAGE[2] (W)	TYPICAL CURRENT @ 120V (A)	TYPICAL CURRENT @ 208V (A)	TYPICAL CURRENT @ 240V (A)	TYPICAL CURRENT @ 277V (A)	LED CURRENT (mA)	HID EQUIVALENT[3]	LUMINAIRE EFFICACY RATING (LM/W)	BUG RATING
35W32LED4K-R-LE2	3200	35	0.29	0.17	0.16	0.15	350	70 - 100	91.4	B1-U0-G1
35W32LED4K-R-LE3	3200	35	0.29	0.17	0.16	0.15	350	70 - 100	91.4	B1-U0-G1
35W32LED4K-R-LE4	3200	35	0.29	0.17	0.16	0.15	350	70 - 100	91.4	B1-U0-G1
35W32LED4K-R-LE5	3200	35	0.29	0.17	0.16	0.15	350	70 - 100	91.4	B2-U0-G1
55W32LED4K-R-LE2	4500	52	0.40	0.23	0.21	0.19	530	100 - 150	86.5	B1-U0-G1
55W32LED4K-R-LE3	4500	52	0.40	0.23	0.21	0.19	530	100 - 150	86.5	B1-U0-G1
55W32LED4K-R-LE4	4500	52	0.40	0.23	0.21	0.19	530	100 - 150	86.5	B1-U0-G1
55W32LED4K-R-LE5	4500	52	0.40	0.23	0.21	0.19	530	100 - 150	86.5	B2-U0-G1
55W48LED4K-R-LE2	5000	55	0.38	0.22	0.23	0.21	350	100 - 150	90.9	B1-U0-G1
55W48LED4K-R-LE3	5000	55	0.38	0.22	0.23	0.21	350	100 - 150	90.9	B1-U0-G1
55W48LED4K-R-LE4	5000	55	0.38	0.22	0.23	0.21	350	100 - 150	90.9	B1-U0-G1
55W48LED4K-R-LE5	5000	55	0.38	0.22	0.23	0.21	350	100 - 150	90.9	B2-U0-G1
80W48LED4K-R-LE2	7200	79	0.63	0.36	0.34	0.31	530	150-200	91.1	B2-U0-G1
80W48LED4K-R-LE3	7200	79	0.63	0.36	0.34	0.31	530	150-200	91.1	B2-U0-G1
80W48LED4K-R-LE4	7200	79	0.63	0.36	0.34	0.31	530	150-200	91.1	B2-U0-G1
80W48LED4K-R-LE5	7200	79	0.63	0.36	0.34	0.31	530	150-200	91.1	B3-U0-G1
70W64LED4K-R-LE2	6200	71	0.58	0.34	0.32	0.3	350	100 - 150	87.3	B2-U0-G1
70W64LED4K-R-LE3	6200	71	0.58	0.34	0.32	0.3	350	100 - 150	87.3	B3-U0-G1
70W64LED4K-R-LE4	6200	71	0.58	0.34	0.32	0.3	350	100 - 150	87.3	B2-U0-G1
70W64LED4K-R-LE5	6200	71	0.58	0.34	0.32	0.3	350	100 - 150	87.3	B3-U0-G1
110W64LED4K-R-LE2	9300	103	0.8	0.46	0.42	0.38	530	200 - 250	90.3	B3-U0-G2
110W64LED4K-R-LE3	9300	103	0.8	0.46	0.42	0.38	530	200 - 250	90.3	B2-U0-G2
110W64LED4K-R-LE4	9300	103	0.8	0.46	0.42	0.38	530	200 - 250	90.3	B2-U0-G2
110W64LED4K-R-LE5	9300	103	0.8	0.46	0.42	0.38	530	200 - 250	90.3	B4-U0-G2
90W80LED4K-R-LE2	8600	87	0.78	0.43	0.40	0.34	350	150-200	98.9	B2-U0-G2
90W80LED4K-R-LE3	8600	87	0.78	0.43	0.40	0.34	350	150-200	98.9	B2-U0-G2
90W80LED4K-R-LE4	8600	87	0.78	0.43	0.40	0.34	350	150-200	98.9	B2-U0-G2
90W80LED4K-R-LE5	8600	87	0.78	0.43	0.40	0.34	350	150-200	98.9	B4-U0-G2
135W80LED4K-R-LE2	12000	129	1.15	0.61	0.58	0.5	530	250 - 320	93.0	B2-U0-G2
135W80LED4K-R-LE3	12000	129	1.15	0.61	0.58	0.5	530	250 - 320	93.0	B2-U0-G2
135W80LED4K-R-LE4	12000	129	1.15	0.61	0.58	0.5	530	250 - 320	93.0	B2-U0-G2
135W80LED4K-R-LE5	12000	129	1.15	0.61	0.58	0.5	530	250 - 320	93.0	B4-U0-G2

[1] L70 = 100,000 hrs (at ambient temperature = 25°C and forward current = 700 mA)
[2] System wattage includes the lamp and the LED driver.
[3] Equivalence should always be confirmed by a photometric layout.
Note : Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

Optical System

LEDGINE

Composed of high performance acrylic refractors lenses to achieve desired distribution, optimized to get maximum spacing, target lumen and a perfect lighting uniformity. Performance shall be tested per LM63 and LM79 and TM15 (IESNA) certifying its photometric performance.

[1] Photometry available on Philips Lumec web site: www.philips.com/lumec

- **LE2:** Asymetrical
- **LE3:** Asymetrical
- **LE4:** Asymetrical
- **LE5:** Symmetrical (square)

Voltages

120 / 208 / 240 / 277 / 347[1] / 480[1]

[1] Available with Buck option

PHILIPS
LUMEC

Section – 4 Field and Court Lighting

1. Lighting shall meet the current IES standards and the skill level of the highest play activity that is being provided.
2. The design shall be prepared to use the least number of light fixtures and electrical energy required to provide the specified lighting intensities.
3. Spill and glare shall be minimized. Photometric data and lighting density calculations must be provided at the plan check phase.
4. Multi-purpose field lights shall be activated by means of an on-off switch located in a separate lockable (padlock) vandal resistant enclosure. The “On” switch shall be energized by a lighting controller. The controller shall turn the lights “Off” at a predetermined time. Relay switches (contactors) of more than three poles or any other exotic switching equipment shall not be used.
5. When requested provide a proprietary control system capable of turning the sports lighting on and off from a remote location. The control system shall be compatible with the lighting and electrical equipment provided.
6. Lighting poles shall be a maximum height of 70 feet.
7. Field lighting poles shall be located outside the field of play or play areas.
8. Control of sports lighting shall be accomplished with an “on” feature only, energized by a controller, and controller shall turn lights off after set time.

Lighting Levels in foot-candles (FC)

Recreational Use	Horizontal Illumination	Uniformity
Soccer: Recreational Amateur	 20 fc 30 fc	 4:1 or less 3:1 or less
Softball: Infield Outfield	 30 fc 20 fc	 2.5:1 or less 3:1 or less
Baseball Infield Outfiel d	 50 fc 30 fc	 2:1 or less 2.5:1 or less
Tennis	30 fc	4:1 or less
Basketball and Volleyball	30 fc	3:1 or less
Swimming Pool Decks	1 fc	4:1 or less

Section – 5 Telecommunication System

1. All park buildings used for recreation programming need data links in all rooms with exceptions to restrooms, locker rooms, and dressing rooms.
2. Data links are provided using data jacks and phone jacks.
3. Multiple jacks are needed in each room depending on the size and use of the room and must be positioned strategically.
4. Wi-Fi access points and the connectivity between all buildings must also be considered.

This information must be provided on the plan for all new and rehabilitated buildings.

Section – 6 Trenching

1. No shared use of trenches will be allowed between various trades and for incompatible uses. Pipes shall not be installed directly over one another. If shared use of trenches is required, such trenches shall comply with applicable codes and are subject to approval by Public Works Dept. inspector.
2. All main line and lateral line pipe shall be encased with SE 50 plaster or mortar sand.
3. Warning tapes for irrigation main lines and low voltage control wires shall be a minimum of three inches wide and shall run continuously for the entire length of all main line piping and wire. In a trench containing both main line and low voltage control wire, both trench marker tapes shall be installed side by side.

Section – 7 Sleeving

1. Sleeves are required for all electrical lines below paving.
2. Sleeves shall extend a minimum of twelve inches beyond the paved surface above.
3. A pull box shall be provided at each end of sleeves crossing streets or driveways.
4. Electrical Lines: All sleeves for electrical lines shall be Schedule 40 PVC pipe two times the diameterof the wire bundle to be enclosed, two-inch minimum size.

Where electrical lines cross under paving the letter ‘E’ shall be stamped or chiseled on the pavementor curb directly above the sleeve on both ends.

CHAPTER 4 LANDSCAPING

Section 1 – General Plant Palette

The plant palette provides guidelines for plant species to be used in the design of landscape projects for City of Santa Clara Parks & Recreation facilities. For projects that fall within riparian areas or adjacent to natural meadows, Valley Water guidelines should be followed. Contact Valley Water for further information.

The plants selected conform to sustainable design principles for plant selection in that they are either native or adapted to the climate of the City of Santa Clara, including low water use and low maintenance requirements. In general, native plants and drought tolerant non-natives have been preferred, unless the cultural requirement dictates otherwise. Invasive plants found in the California Invasive Plant Council's (Cal-IPC) database are excluded from the approved plant palette.

The list may be used by other City of Santa Clara departments for both design and maintenance. They must also be used by volunteers who propose landscaping projects in public City parks. The list is divided into three levels considering the types of parks that are within the City's park inventory.

- Level 1 – Mini and Neighborhood Parks. This level consists of landscape plants that are appropriate for all standard City parks maintained by City.
- Level 2 – Community Parks and parks within a Community Facilities District (CFD). This level consists of a broader array of landscape plants which are appropriately matched to these types of parks. For example, parks in CFD 2019-1 (Lawrence Station).

- Level 3 – Any City public park that is Privately Maintained. This level has the most comprehensive list of landscape plants for city parks where all facilities are paid for and maintained by the developer or private firm. For example, Meadow Park, Santa Clara Square.

1. DEFINITION

The purpose of this guideline is to establish standards for the landscape design and planting of trees, shrubs, perennials, grasses, groundcovers, vines, wetland plants, etc.

2. APPLICATION

A. This section includes the following:

1) Trees

2) Shrubs, Perennials, Grasses, Groundcovers and Vines

3) Outdoor Classroom and Garden Planting

4) Wetland Plants (Aquatic and Semi-Aquatic)

3. SELECTION CRITERIA

A. Industry Standards

1) American Standard for Nursery Stock

2) Bailey's Hortus Third

3) ASTM Standards

4) Sunset Western Garden Book

4. SUBMITTALS

A. From Contractor/Developer to Parks & Recreation Department Contractors, qualified contractors shall be licensed to do business in the State of California and shall possess a City of Santa Clara business license.

B. Samples for Verification

Each species of tree, shrub, vine, and groundcover shall be tagged, submitted, and approved before installation.

C. Soils Testing

1) Provide a complete soil test/analysis showing soil texture, drainage characteristics, water holding capacity, nutrient levels and organic matter content with indication of all potentially harmful soil characteristics that would inhibit or prevent plant growth.

5. QUALITY ASSURANCE

A. Tree and Shrub Measurements.

1) Measure according to Grades and Standards for Nursery Plants with branches and trunks in their normal position. Do not prune to obtain required sizes. Take measurements 6 inches above ground for trees up to 4-inches and 12-inches above ground for larger sizes.

6. DELIVERY STORAGE AND HANDLING

A. Deliver exterior plants in nursery containers or properly prepared with root ball protected against damage.

B. Root system shall be kept moist until planting.

C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root system from sun scald, drying, sweating, whipping, and tying damage. Do not bend or bind-tie trees or shrubs or destroy their natural shape.

D. Deliver exterior plants after preparations for planting have been completed and install immediately. If planting is delayed more than 6 hours after delivery, set exterior plants in shade, protect from weather and mechanical damage and keep root system moist.

E. Do not stage plants on hot pavement before planting.

7. WARRANTY

A. Warrant the exterior plants for the warranty period indicated against defects including death and unsatisfactory growth.

1) Warranty period for trees, shrubs, and groundcover: From 90 days to 1 year based on the project and starting from date of substantial completion.

2) Contractor shall be responsible for complete and proper planting supports, installation layout, watering, fertilizing, and herbicides during warranty period.

3) If there is infestation of insects on plant material, the contractor must communicate all details to Deputy Parks & Recreation Director or designee for authorization and approval.

Section 2 – Products

1. TREE AND SHRUB MATERIAL

A. Furnish nursery container grown trees and shrubs complying with Grades and Standards for Nursery Plants, with healthy root systems. All trees shall be approved by Landscape Architect prior to planting. Provide well shaped, fully branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

B. Provide trees and shrubs of sizes and grades complying with ANSI Z60.1 for type of trees and shrubs required.

C. Label one exterior plant of each variety with a securely attached waterproof label with common name, scientific name, frequency of fertilization, and frequency of watering.

D. Provide single stem trees with straight trunk, well-balanced crown and intact leader, of height and caliper indicated, complying with Grades and Standards for Nursery Plants for type of trees required.

1) Provide container grown trees.
2) Branching height shall be as specified.
3) Multi-stem trees shall be branched or pruned naturally to retain the natural form of the tree, in relation to caliper, height, and branching according to Grades and Standards for Nursery Plants.

2. GROUNDCOVER AND VINES

A. Provide groundcover of species indicated, established and well rooted in containers and complying with Grades and Standards for Nursery Plants.

B. Provide vines of species indicated complying with Grades and Standards for Nursery Plants. Vines shall be two – year plants with heavy well branched tops, with not less than three runners 18 – inches or more in length with a well-developed roof system.

3. TOPSOIL

A. Topsoil shall be as described in ASTM D 5268, with pH range of 5.5 to 6.5, a minimum of 4 percent organic material content, free of stones and organic materials that are harmful to plant growth.

B. Reuse surface soil stockpiled on site. Clean surface soil of roots, stones, clay lumps, construction spoils, and materials that are harmful to plant growth.

C. Supplement with imported topsoil from offsite sources when quantities are insufficient. Obtain topsoil displaced from naturally well drained sites where topsoil occurs at least 4 inches deep. Do not obtain topsoil from bogs or marshes.

4. ORGANIC SOIL AMENDMENTS

   A. Compost: Well composted, stable, weed free organic matter, pH range of 5.5 to 6.5; moisture content 35 to 55 percent by weight, 100 percent passing through ½ inch sieve.

   B. Peat: Finely divided or granular texture, with a pH range of 5.5 to 6.5, containing partially decomposed peat, native peat, or reed sedge peat having a water absorbing capacity of 1100 to 2000 percent.

5. FERTILIZER

   A. Commercial grade complete fertilizer of neutral character consisting of slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous and potassium. Fertilizer shall correspond to results and recommendations of soils test and shall include minor elements.

6. MULCHES

   A. Mulch shall be native materials and 100 percent organic.

7. STAKES AND GUYS

   A. Upright stakes and guys, rough sawn, sound, new hardwood, redwood, free of knots, holes, cross grain, 2 inches by length shown.

   B. Pre-manufactured staking systems.

   C. Hose chafing guard, reinforced rubber or plastic hose at least ½ inch in diameter, black, cut to lengths required to protect tree trunks from damage.

   D. Stake systems must be approved by the Director or designee.

8. MISCELLANEOUS PRODUCTS

A. Anti-desiccant, water – insoluble emulsion, permeable moisture retarder, film forming for trees and shrubs.

B. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.

9. Comprehensive Plant Palette List

Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Trees					
Acer	spp.	Maples	✓	✓	✓
Acer	rubrum 'bowhall'	Bowhall Red Maple	✓	✓	✓
Acer	griseum 'gingerbread'	Paper Bark Maple	✓	✓	✓
Acer	palmatum	Japanese Maple	✓	✓	✓
Acer	saccharum	Sugar Maple	✓	✓	✓
Acacia	longifolia	Sidney Golden Wattle	✓	✓	✓
Aesculus	californica	California Buckeye	✓	✓	✓
Agonis	flexuosa	Peppermint Tree	✓	✓	✓
Abies	concolor	White Fir	✓	✓	✓
Albizia	julibrissin	Silk Tree	✓	✓	✓
Alnus	cordata	Italian Alder	✓	✓	✓
Arbutus	unedo	Strawberry Tree	✓	✓	✓

Arbutus	Marina'	Marina Arbutus	✓	✓	✓
Betula	nigra	River Birch	✓	✓	✓
Betula	pendula	European White Birch	✓	✓	✓
Betula	papyrifera	Paper Birch	✓	✓	✓
Cedrus	atlantica	Atlas Cedar	✓	✓	✓
Callistemon	citrinus	Lemon Bottlebrush	✓	✓	✓
Callistemon	viminalis	Weeping Bottlebrush	✓	✓	✓
Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Trees					
Calocedrus	decurrens	Incense Cedar	✓	✓	✓
Carpinus	betulus	European Hornbeam	✓	✓	✓
Casuarina	stricta	Drooping She-Oak	✓	✓	✓
Catalpa	speciosa	Western Catalpa	✓	✓	✓
Cedrus	deodara	Deodar Cedar	✓	✓	✓
Celtis	australis	European Hackberry	✓	✓	✓
Celtis	sinensis	Chinese Hackberry	✓	✓	✓
Ceratonia	siliqua	Carob	✓	✓	✓
Cercis	canadensis	Eastern Redbud	✓	✓	✓
Cercis	occidentalis	Western Redbud	✓	✓	✓
Chitalpa	tashkentensis	Chitalpa	✓	✓	✓
Cinnamomum	camphora	Camphor Tree	✓	✓	✓

Cornus	florida	Flowering Dogwood	✓	✓	✓
Cornus	kousa	Kousa Dogwood	✓	✓	✓
Cornus	nuttallii	Western Dogwood	✓	✓	✓
Cotinus	coggygria	Purple Smoke Tree	✓	✓	✓
Crataegus	laevigata	English Hawthorn	✓	✓	✓
Cupaniopsis	anacardioides	Carrot Wood	✓	✓	✓
Eriobotrya	deflexia	Bronze loquat		✓	✓
Eriobotrya	japonica	Loquat		✓	✓
Eucalupyus	spp.	Eucalyptus			✓
Fagus	sylvatica 'purpurea'	Copper Beech	✓	✓	✓
Ficus	microarpa ‘Nitida’	Little Leaf Fig	✓	✓	✓
Fraxinus	spp.	Ash	✓	✓	✓
Fraxinus	angustifolia 'Raywood'	Raywood Ash	✓	✓	✓
Fraxinus	uhdei	Evergreen Ash	✓	✓	✓
Fraxinus	velutina 'Modesto'	Modesto Ash	✓	✓	✓
Geijera	parviflora	Australian Willow	✓	✓	✓
Ginko	biloba	Maidenhair Tree	✓	✓	✓
Glediitsia	triacanthos 'inermis'	Thornless Honeylocust		✓	✓
Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Trees					

Gleditsia	tricanthos inermis	Shademaster Honeylocust			✓
Jacaranda	mimosifolia	Jacaranda	✓	✓	✓
Juglans	nigra	Black Walnut	✓	✓	✓
Lagerstroemia	indica	Crapemyrtle	✓	✓	✓
Laurus	nobilis	Grecian Laurel	✓	✓	✓
Leptospermum	laevigatum	Australian Tea Tree		✓	✓
Ligustrum	lucidum	Glossy Privet		✓	✓
Liquidambar	styraciflua	American Sweet Gum			✓
Lophostemon	confertus	Brisbane Box		✓	✓
Magnolia	grandiflora	Southern Magnolia	✓	✓	✓
Malus	spp.	Apple		✓	✓
Maytenus	boaria	Mayten		✓	✓
Melaleuca	quinquenervia	Cajeput Tree		✓	✓
Metasequoia	glyptostroboides	Dawn Redwood	✓	✓	✓
Metrosideros	excelsus	New Zealand Christmas		✓	✓
Morus	alba ‘Fruitless’	Fruitless Mulberry	✓	✓	✓
Nerium	oleander	Oleander			✓
Olea	europea "Bonita"	Olive (Fruitless)	✓	✓	✓
Olea	europea 'Manzanillo'	Olive		✓	✓
Olea	europea "Swanhill"	Swanhill Olive		✓	✓
Picea	pungens	Blue Spruce		✓	✓

Pinus	canariensis	Canary Island Pine	✓	✓	✓
Pinus	brutia	Afghan Pine	✓	✓	✓
Pinus	halepensis	Aleppo Pine	✓	✓	✓
Pinus	mugo	Swiss mountain Pine	✓	✓	✓
Pinus	pinea	Italian Stone Pine	✓	✓	✓
Pinus	ponderosa	Ponderosa Pine	✓	✓	✓
Pinus	radiata	Monterey Pine	✓	✓	✓
Pinus	sabiniana	Gray Pine	✓	✓	✓
Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Trees					
Pinus	sylvestris	Scots Pine	✓	✓	✓
Pinus	thunbergii	Japanese Black Pine	✓	✓	✓
Pistacia	chinensis	Chinese Pistache		✓	✓
Pittosporum	eugenioides	Pittosporum	✓	✓	✓
Pittosporum	rhombifolium	Queensland Pittosporum	✓	✓	✓
Pittosporum	undulatum	Victorian Box	✓	✓	✓
Platanus	acerfolia 'Bloodgood'	London Plane Tree	✓	✓	✓
Platanus	racemosa	California Sycamore	✓	✓	✓
Platanus	x acerifolia "Columbia"	London Plane or Hybrid Plane	✓	✓	✓
Podocarpus	gracilior	Fern Pine	✓	✓	✓

Podocarpus	macrophyllus	Yew Pine	✓	✓	✓
Populus	nigra 'Italica'	Lombardy Poplar	✓	✓	✓
Prunus	cerasifera 'Krauter Vesuvius'	Purple Leaf Plum	✓	✓	✓
Prunus	ilicifolia	Hollyleaf Cherry	✓	✓	✓
Prunus	persica	Peach	✓	✓	✓
Prunus	spp.	Flowering Cherry, Plum	✓	✓	✓
Prunus	serrulata	East Asian Cherry	✓	✓	✓
Prunus	yedoensis 'Akebono'	Yoshino Flowering Cherry	✓	✓	✓
Pyrus	c. bradford	Bradford Pear	✓	✓	✓
Pyrus	calleryana	Callery Pear	✓	✓	✓
Pyrus	calleryana ‘Aristocrat’	Aristocrat Pear	✓	✓	✓
Pyrus	calleryana 'Aristocrat'	Ornamental Pear	✓	✓	✓
Pyrus	kawakamii	Evergreen Pear	✓	✓	✓
Quercus	spp.	Oak	✓	✓	✓
Quercus	agrifolia	Coast live Oak	✓	✓	✓
Quercus	coccinea	Scarlet Oak	✓	✓	✓
Quercus	ilex	Holly Oak	✓	✓	✓
Quercus	lobata	California White Oak	✓	✓	✓
Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**

Trees					
Quercus	lobata	Valley Oak	✓	✓	✓
Quercus	shumardii	Shumard Oak	✓	✓	✓
Quercus	rubra	Red Oak	✓	✓	✓
Quercus	suber	Cork Oak	✓	✓	✓
Quercus	virginiana 'cathedral'	Southern Livce Oak	✓	✓	✓
Rhus	lancea	African Sumac	✓	✓	✓
Robinia	spp.	Flowering Locust	✓	✓	✓
Robinia	pseudoacacia	Black Locust	✓	✓	✓
Salix	babylonica	Weeping Willow	✓	✓	✓
Salix	matsudana	Corkscrew willow	✓	✓	✓
Sapium	sebiferum	ChineseTallow	✓	✓	✓
Schinus	molle	California Pepper Tree	✓	✓	✓
Sequoia	sempervirens	Coast Redwood		✓	✓
Sequoia	sempervirens 'Aptos Blue'	Aptos Blue Redwood		✓	✓
Sophora	japonica	Japanese Pagoda Tree	✓	✓	✓
Tilia	cordata	Little Leaf Linden	✓	✓	✓
Tilia	tomentosa 'sterling"	Silver Linden	✓	✓	✓
Tristaniopsis	laurina	Laurel leaf box	✓	✓	✓
Ulmus	americana	American Elm	✓	✓	✓

Ulmus	parvfolia "Drake"	Drake's Evergreen Elm	✓	✓	✓
Ulmus	parvifolia	Chinese Elm	✓	✓	✓
Ulmus	parvifora	Evergreen Elm	✓	✓	✓
Zelkova	serrata	Saw Tooth Zelkova	✓	✓	✓
Shrubs					
Abelia	grandiflora	Glossy Abelia		✓	✓
Abutilon	spp.	Flowering Maple	✓	✓	✓
Anigozanthus	spp.	Kangaroo Paw	✓	✓	✓
Arctostaphylos	spp.	Manzanita	✓	✓	✓
Rhododendron	spp.	Rhododendron, Azalea		✓	✓

Scientific Name	Species	Common Name	Level 1 Parks	Level 2 Parks	Level 3 Parks
Shrubs					
Baccharis	pilularis 'pigeon point'	Coyote Brush		✓	
Bougainvillea	spp.	Bougainvillea			✓
Bouteloua	gracilis 'blonde ambition'	Blue Grama Grass		✓	✓
Buddleia	spp.	Butterfly Bush		✓	✓
Buxus	spp.	Boxwood	✓	✓	✓
Calamagrostis	x acut. 'karl foerster'	Feather Weed Grass		✓	✓
Caesalpinia	spp.	Paradise Bush			✓

Callistemon	citrinus	Bottlebrush		✓	✓
Callistemon	viminalis 'Little John'	Dwarf Bottlebrush	✓	✓	✓
Ceanothus	griseum horizonalis	Wild Lilac		✓	✓
Chondropetalum	tectorum	Cape Rush	✓	✓	✓
Cistus	'doris hibberson'	Rockrose		✓	✓
Cistus	x purpureus 'Brilliancy'	Brilliancy Rock Rose		✓	✓
Coleonema	pulchrum 'Sunset Gold'	Sunset Gold Breath of Heaven		✓	✓
Cordyline	spp.	Dracaena		✓	✓
Cornus	alba "White Angel'	Tatarian Dogwood			✓
Cornus	sericea	Red Twig Dogwood			✓
Cotoneaster	spp.	Cotoneaster	✓	✓	✓
Dicksonia	antartica	Tasmanian Tree Fern			✓
Dietes	Bicolor	Fortnigh Lily		✓	✓
Dodonaea	viscosa	Hoopseed Bush	✓	✓	✓
Echium	candicans	Pride of Madera			✓
Escallonia	exoniensis 'Frades'	Escallonia		✓	✓
Euonymus	spp.	Euonymus	✓	✓	✓
Feijoa	sellowiana	Pineapple Guava		✓	✓
Grevillea	lanigera	Wooly Grevillia		✓	✓
Grevillea	'Noelii'	Grevillia		✓	✓
Hakea	suaveolens	Sweet-Scented Hakea		✓	✓

Helictotrichon	semervirens 'pendula'	Blue Oat Grass		✓	✓
Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Shrubs					
Hesperaloe	parviflora 'brakelights'	Red Yucca		✓	✓
Heteromeles	arbutifolia	Toyon	✓	✓	✓
Hydrangea	spp.	Hydrangea		✓	✓
Hydrangea	quercifolia	Oakleaf Hydrangea		✓	✓
Hypericum	moserianum	Gold Flower		✓	✓
Juniperus	chinensis 'Torulosa'	Hollywood Juniper	✓	✓	✓
Lavandula	spp.	Lavender	✓	✓	✓
Lavandula	angustifolia 'Hidcote Blue'	Hidcote Blue English Lavender	✓	✓	✓
Ligustrum	japonicum 'Texanum'	Wax-Leaf Privet		✓	✓
Ligustrum	sinense 'Sunshine'	Sunshine Ligustrum		✓	✓
Loropetalum	spp.	Fringe Flower	✓	✓	✓
Mahonia	aquifolium	Oregon Grape		✓	✓
Muhlenbergia	capilaris 'REGAL MIST'	Regal Mist Pink Muhy		✓	✓
Myrtus	communis 'Compacta'	Dwarf Myrtle		✓	✓
Nandina	domestica	Heavenly Bamboo	✓	✓	✓
Nerium	oleander & cultivars	Oleander		✓	✓

Pennisetum	alopecuroides 'little bunny'	Little Bunny Fountain Grass	✓	✓	✓
Phormium	tenax	New Zealand Flax		✓	✓
Phormium	tenax 'apricot queen'	New Zealamd Flax		✓	✓
Photinia fraseri	fraseri	Photinia		✓	✓
Pittosporum	tobira	Pittosporum	✓	✓	✓
Prunus	caroliniana 'compacta'	Carolina Laurel Cherry	✓	✓	✓
Prunus	ilicifolia	Hollyleaf Cherry	✓	✓	✓
Pyracantha	santa cruz	Firethorn		✓	✓
Rhamnus	californica 'seaview'	Dwarf Coffeeberry	✓	✓	✓
Rhaphiolepis	indica & cultivars	India Hawthorn	✓	✓	✓
Spiraea	japonica 'Gold Mound'	Goldmound Spirea	✓	✓	✓
Spiraea	spp.	Spiraea	✓	✓	✓
Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Shrubs					
Teucrium	fruticans	Bush Germander		✓	✓
Thuja	occidentalis	Arborvitae			✓
Verbena	lilacacina 'de la mina'	Verbena		✓	✓
Viburnum	suspensum	Sandankwa Viburnum		✓	✓
Viburnum	tinus 'Spring Boquet'	Laurustinus		✓	✓
Westringia	fruticosa 'Morning Light'	Coast Rosemary		✓	✓

Xylosma	congestum	Shiny Xylosma		✓	✓
Zauschneria	californica 'burts bluff'	California Fuscia		✓	✓
Perennials					
Agapanthus	africana	Lily of the Nile		✓	✓
Agapanthus	africana 'Peter Pan'	Dwarf Lily of the Nile		✓	✓
Agapanthus	queen anne	Lily of the Nile		✓	✓
Agave	attenuata	Fox Tail Agave		✓	✓
Agave	gemiiflora	Twin Flowered Agave		✓	✓
Agave	Blue Flame'	Blue Flame Agave		✓	✓
Anigozanthos	orange croaa	Orange Kangaroo Paw		✓	✓
Anigozanthos	'Big Red'	Red Kangaroo Paw		✓	✓
Aralia	sieboldii	Japanese Aralia		✓	✓
Arctosstaphylos	manzanita	Pacific Mist Manzanita		✓	✓
Artemisia	Powis Castle'	Powis Castle Artemisia			✓
Aster	spp.	Aster			
Epilobium	bowmans #1	Bowman's California Fuchsia	✓	✓	✓
Eschscholzia	californica	California Poppy			
Dietes	x faassenii	Fortnight Lily		✓	✓
Fuchsia	spp.	Fuchsia			✓
Gaura	spp.	Gaura	✓	✓	✓

Geranium	spp.	Geranium		✓	✓
Hemerocallis	spp.		✓	✓	✓
Hibiscus	spp.	Hibiscus		✓	✓

Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Perennials					
Iris	douglasiana	Purple Douglas Iris		✓	✓
Iris	sibirica	Siberian Iris		✓	✓
Lantana	camara	Yellow Sage		✓	✓
Lantana	montevidensis	Trailing Lantana		✓	✓
Lavendula	spp.	Lavender			✓
Limonium	perezii	Sea Lavender		✓	✓
Lupinus	spp.	Lupine			
Nepeta	spp.	Cat Mint		✓	✓
Paeonia	spp.	Peony			✓
Rosmarinus	officinalis 'Collingwood Ingram'	Prostrate Rosemary	✓	✓	✓
Salvia	clevelandii	Cleveland Sage			✓
Salvia	sylvestris 'Blue hill'	Blue Hill Sage		✓	✓
Salvia.	officianalis	Common Salvia	✓	✓	✓
Salvia	leucantha 'Midnight'	Mexican Bush Sage	✓	✓	✓
Salvia	microphylla 'Hot Lips'	Hot Lips Sage	✓	✓	✓

Teucrium	chamaedrys	Wall Germander		✓	✓
Rosa	meiggili'	Peach Drift Rose		✓	✓
Waldesteina	spp.	Barren Strawberry			✓
Zantedschia	aethiopica	Calla Lilly			✓
Verbena	iilacina 'De La Mina'	Cadros Island Verbena		✓	✓
Veronica	spp.	Veronica			✓
Viola	spp.	Viola		✓	✓
Zauschneria	californica	California Fuchsia		✓	✓
Groundcovers					
Ajuga	reptans	Blue Bugle, Carpet bugleweed			✓
Arctosstaphylos	manzanita	Pacific Mist Manzanita		✓	✓
Contoneaster	horzontalis	Rock Cotoneaster		✓	✓
Coprosma	kirkii	Coprosma	✓	✓	✓
Hedera	canariensis	Algerian Ivy			✓
Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Groundcovers					
Hypericum	calycinum	Creeping St Johnswart		✓	✓
Lamium	galeobdolon	Yellow archangel			✓
Lantana	montevidensis 'Carnaval'	Lantana	✓	✓	✓

Myoporum	parvifolium 'Putah Creek'	Myoporum		✓	✓
Osteospermum	fruticosum	Trailing African Daisy		✓	✓
Senencio	mandraliscae	Blue Chalk Sticks		✓	✓
Thymus	praecox	Elfin Thyme		✓	✓
Trachelospermum	jasminoides	Star Jasmine		✓	✓
Vines					
Clematis	armandii	Evergreen Clematis		✓	✓
Jasminum	spp.	Jasmine		✓	✓
Macfadyena	unguis-cati	Cat's Claw		✓	✓
Parthencocissus	tricuspidata 'veitchii'	Boston Ivy		✓	✓
Trachelospermum	jasminoides	Star Jasmine		✓	✓
Wisteria	sinensis	Chinese Wisteria		✓	✓
Wetland Plants					✓
Bolboschoenus		Alkali Bulrush		✓	✓
Salix	laevigata	Red Willow		✓	✓
Salix	lasiolepis	Arroyo Willow		✓	✓
Schoenoplectus	spp.	California Bulrush		✓	✓
Grasses					✓
Bromus	carinatus	California Brome		✓	✓
Calamagrotis	nutkaensis	Pacific Reed Grass		✓	✓
Chondropetalum	tectorum 'El Campo'	Small Cape Rush		✓	✓

Carex	divulsa	Berkeley Sedge	✓	✓	✓
Deschampsia	caespitosa	California Tufted Hairgrass	✓	✓	✓
Elymus	glaucus	Blue Wildrye		✓	✓
Elymus	triticoides	Creeping Wildrye		✓	✓
Festuca	idahoensis	Idaho Fescue	✓	✓	✓
Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Grasses					
Hordeum	brachyantherus	Meadow Barley	✓	✓	✓
Miscanthus	spp.	Maiden Grass		✓	✓
Pennisetum	spp.	Fountain Grass	✓	✓	✓
Juncus	patens "Elk Blue"	Elk Blue California Gray Rush		✓	✓
Lomandra	longifolia 'Breeze'	Dwarf Mat Rush		✓	✓
Milica	imperfecta	Coast Range Melic		✓	✓
Muhlenbergia	dubia	Pine Muhly	✓	✓	✓
Muhlenbergia	rigens	Deer Grass	✓	✓	✓
Salvia	clevelandii	California Fescue		✓	✓
Stipa	cernua	Nodding Needle Grass		✓	✓
Stipa	pulchra	Purple Needle Grass		✓	✓
Bio-Swale					✓

Calamagrostis	acutiflora	Feather Reed Grass		✓	✓
Carex	tumulicola	Berkeley Sedge	✓	✓	✓
Chondropetalum	spp.	Cape Rush		✓	✓
Bouteloua	gracilis 'blonde ambition'	Blonde Ambition Grama Grass		✓	✓
Deschampsia	caespitosa	California Tufted Hairgrass	✓	✓	✓
Iris	douglasiana	Doulgas Iris		✓	✓
Juncus	patens	California Gray Rush	✓	✓	✓
Semi Aquatic					
Aruncus	spp.	Goat's Beard		✓	✓
Canna	indica	Canna		✓	✓
Carex	elata	Tufted Sedge		✓	✓
Carex	pendula	Weeping or Drooping Sedge		✓	✓
Carex	lenticularis	Lakeshore Sedge		✓	✓
Eloecharis	palustris	Spike Rush		✓	✓
Iris	spp.	Iris		✓	✓
Juncus	effusus 'Spiralis'	Corkscrew Rush		✓	✓
Scientific Name	**Species**	**Common Name**	**Level 1 Parks**	**Level 2 Parks**	**Level 3 Parks**
Semi-aquatic					
Juncus	patens	California Gray Rush		✓	✓

Ligularia	spp.	Ligularia		✓	✓
Lobelia	cardinalis	Lobelia		✓	✓
Lythrum	salicaria	Loosestrife		✓	✓
Ranunculus	aquatilis	Water Buttercup		✓	✓
Sagittaria	spp.	Arrowhead		✓	✓
Thalia	geniculata	Alligator Flag Plant		✓	✓
Zantedeschia	spp.	Common Calla		✓	✓
Annuals					
Various Annuals					✓
Palms					
Chamaerops	humilis	European Fan Palm			✓
Phoenix	canariensis	Canary Island Date Palm			✓
Phoenix	dactylifera	Date Palm			✓
Phoenix	reclinata	Senegal date palm			✓
Phoenix	roebelenii	Pygmy date palm			✓
Rhapis	excelsa	Lady Palm			✓
Rhapis	humilis	Slender Lady Palm			✓
Sabal	palmetto	Cabbage Palm, Sabal palm			✓
Butia	capitata	Pindo Palm			✓
Syagrus	romanzoffiana	Queen Palm			✓

Trachycarpus	fortunei	Chinese Windmill Palm			✓
Washingtonia	filifera	California Fan Palm			✓
Washingtonia	robusta	Washington Palm			✓

11. INVASIVE, NON-NATIVE PLANTS PROHIBITED

    A. No plant listed on the UC IPM Invasive Plants List may be used.

Section 3 Execution

1. EXAMINATION

    A. Landscape Architect shall approve all plant material for compliance with product requirements and shall review site conditions affecting installation and performance. Proceed with installation after unsatisfactory conditions have been corrected.

2. PREPARATION

    A. Protect structures and the work of other trades from damage caused from planting operations.

    B. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil bearing water runoff or airborne dust to adjacent properties and walkways.

    C. Layout individual tree and shrub locations by staking. Obtain Landscape Architect's acceptance of layout before planting.

3. TREE AND SHRUB PLANTING

A. Set balled, potted or boxed stock plumb and in the center of pit with top of root ball slightly above the adjacent finish grade.

B. Remove burlap and wire baskets from upper one third of root balls and sides. Do not remove burlap from under root ball. No non-biodegradable material shall be left on the root ball.

C. Place soil around root ball in layers, tamping to settle mix and eliminate voids. When pit is one – half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of soil.

D. Apply mulch at specified thickness around exterior plantings. Extend mulch 12 inches beyond edge of planting pit and as shown on the drawings. Do not place mulch within 3 inches of trunks or stems.

E. Place fertilizer tablets per manufacturer's recommendation. Apply granular fertilizer after planting and before mulching.

4. GUYING AND STAYING

A. Stake and guy trees across the root ball.

5. TREE AND SHRUB PRUNING

A. Prune trees to remove dead and damaged branches and to provide specified clear trunk. Do not cut tree leaders. Prune shrubs to retain natural character. Pruning shall be done with the direction and supervision of the Landscape Architect.

B. Add a saucer around trees to hold water per landscape drawings.

6. PLANTERS

   A. Planter soil mix shall be as follows: equal parts top soil and coarse sand

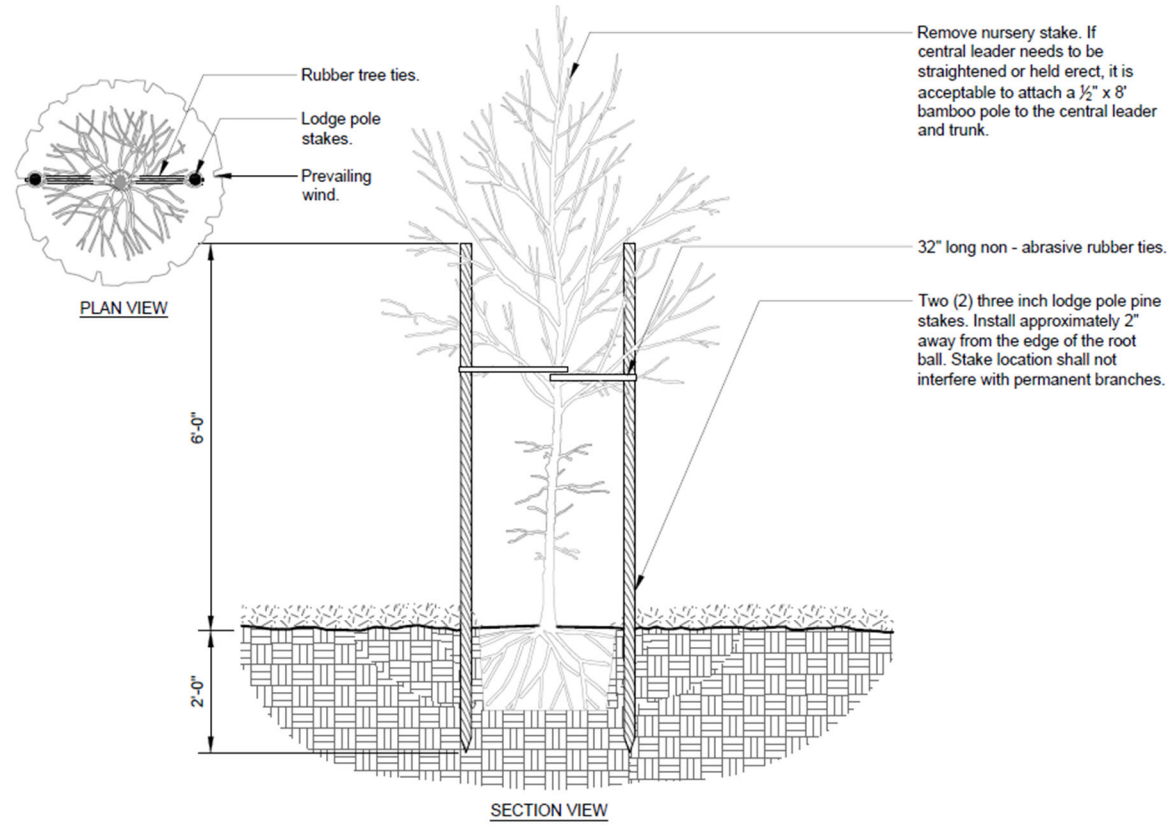
7. GROUNDCOVER PLANTING

   A. Refer to the drawings for the spacing and locations for groundcover and plants.

   B. Dig holes large enough to allow spreading of roots and backfill with planting soil.

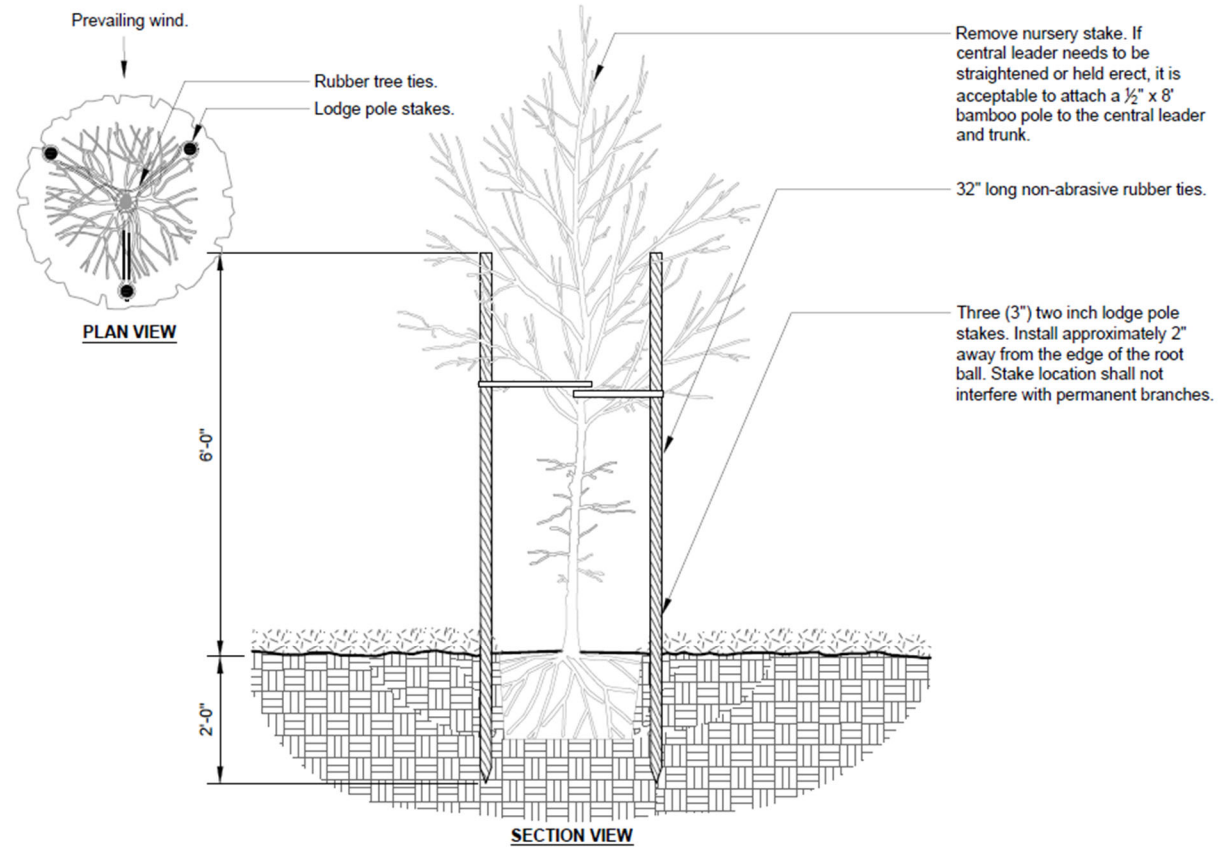
   C. Work soil around roots to eliminate voids. Add a saucer indentation around entire groundcover bed to hold water.

   D. Water thoroughly after planting.



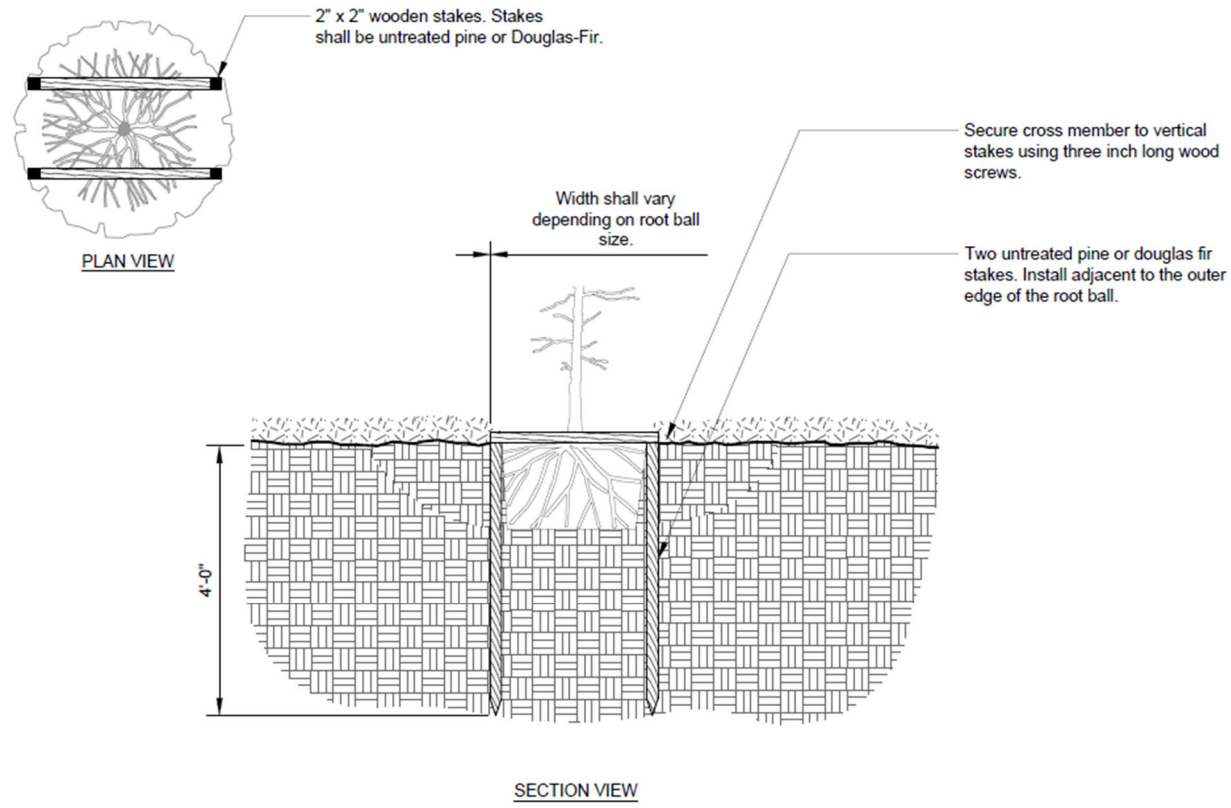
P-X TREE STAKING - LODGE POLES (2)

PLANTING DETAIL P-1

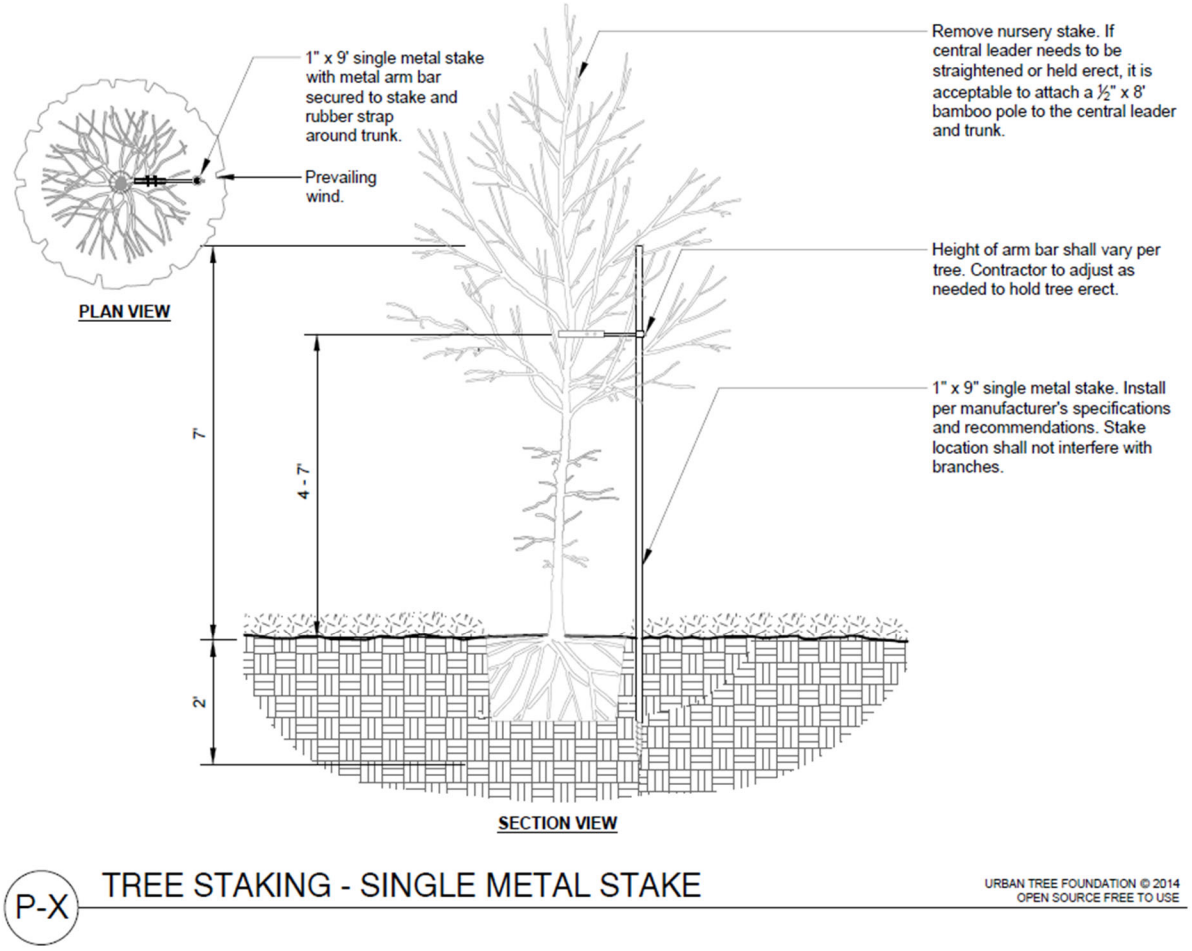


P-X TREE STAKING - LODGE POLES (3)

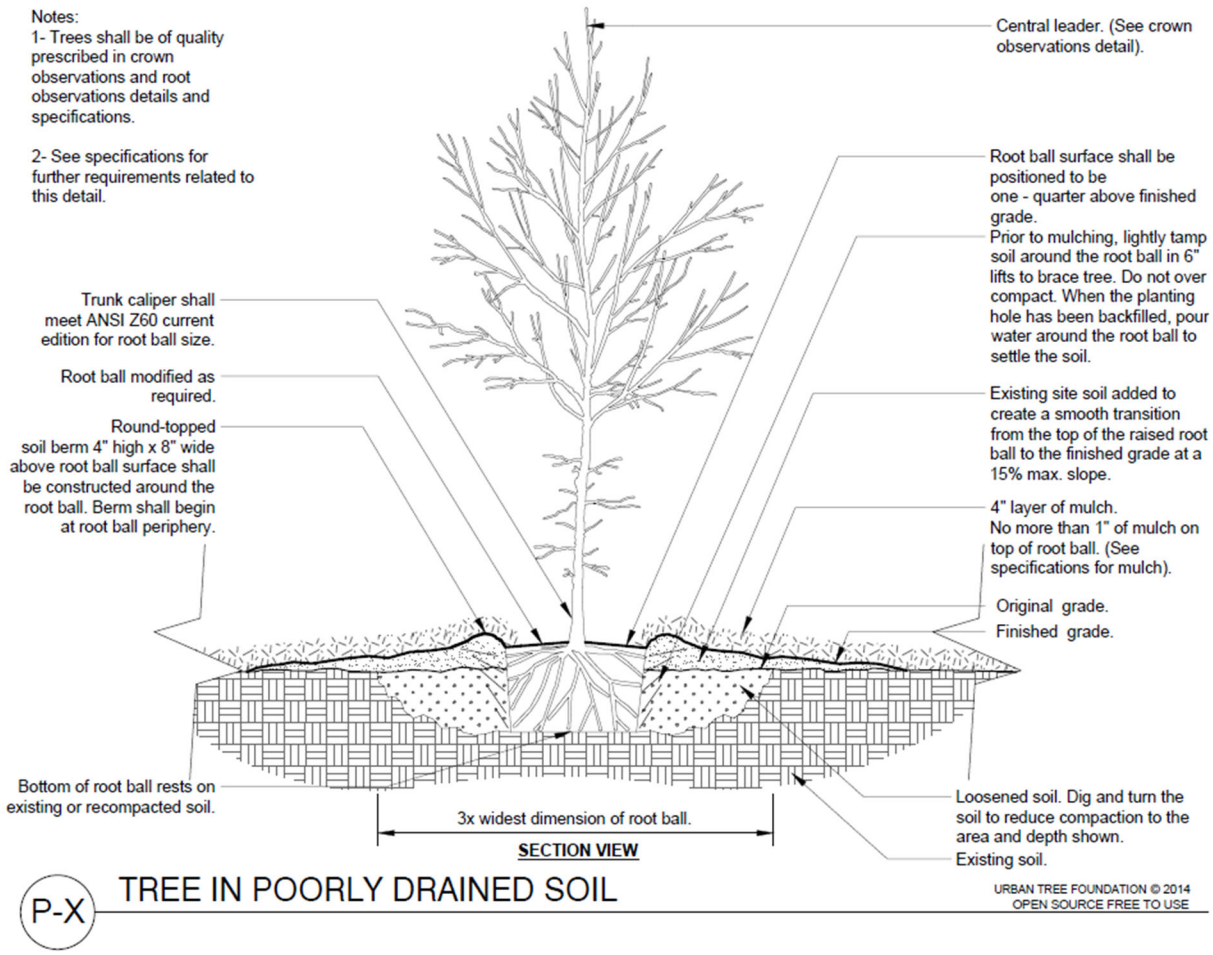
PLANTING DETAIL P-2



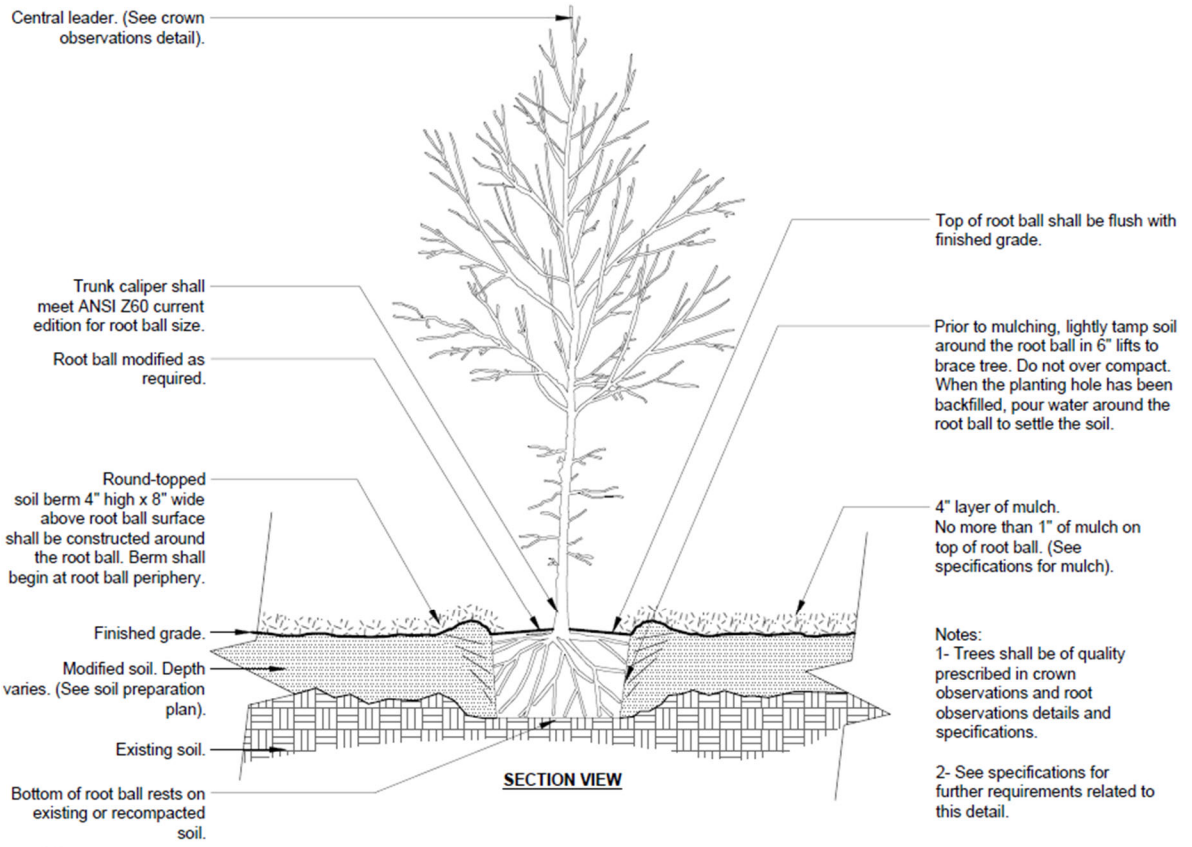
PLANTING DETAIL P-3



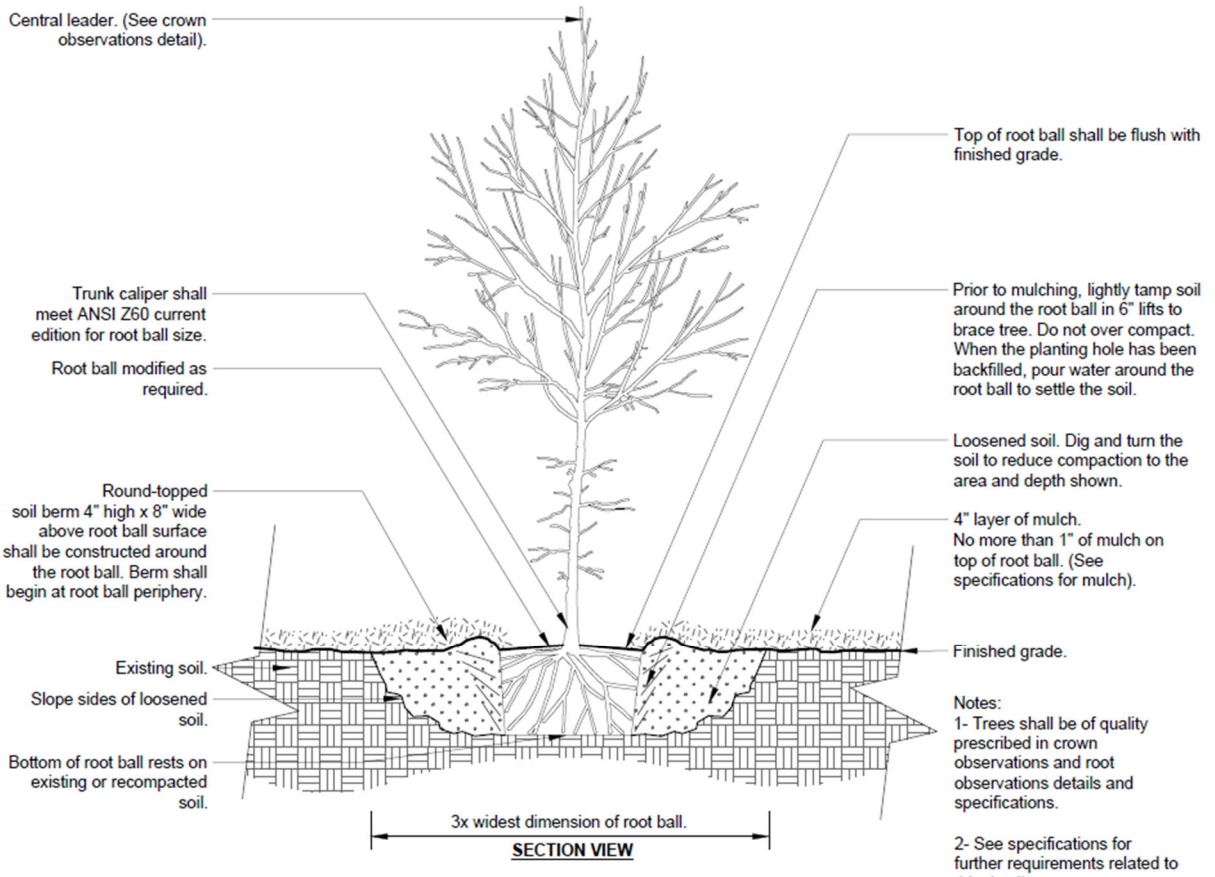
PLANTING DETAIL P-4



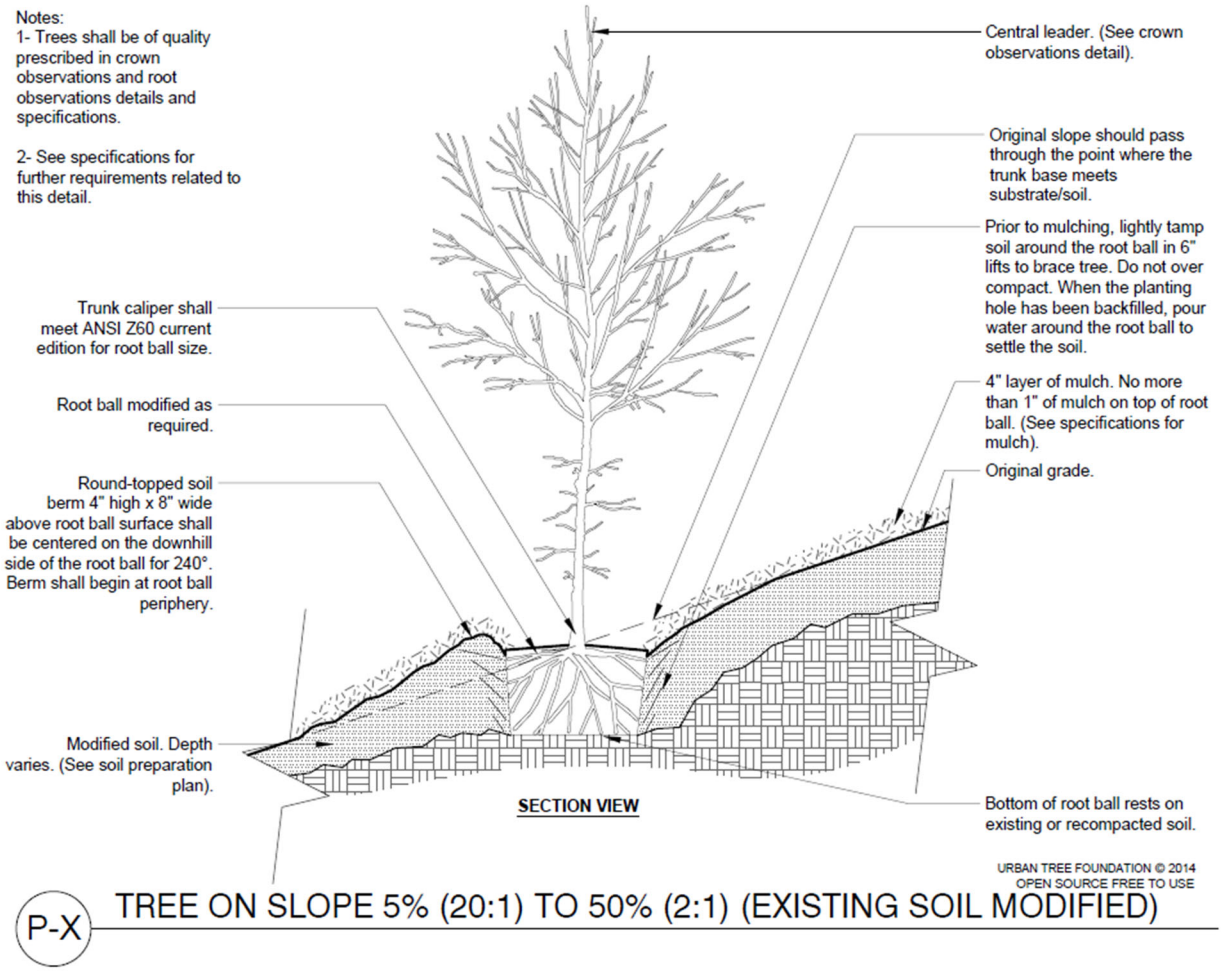
PLANTING DETAIL P-5



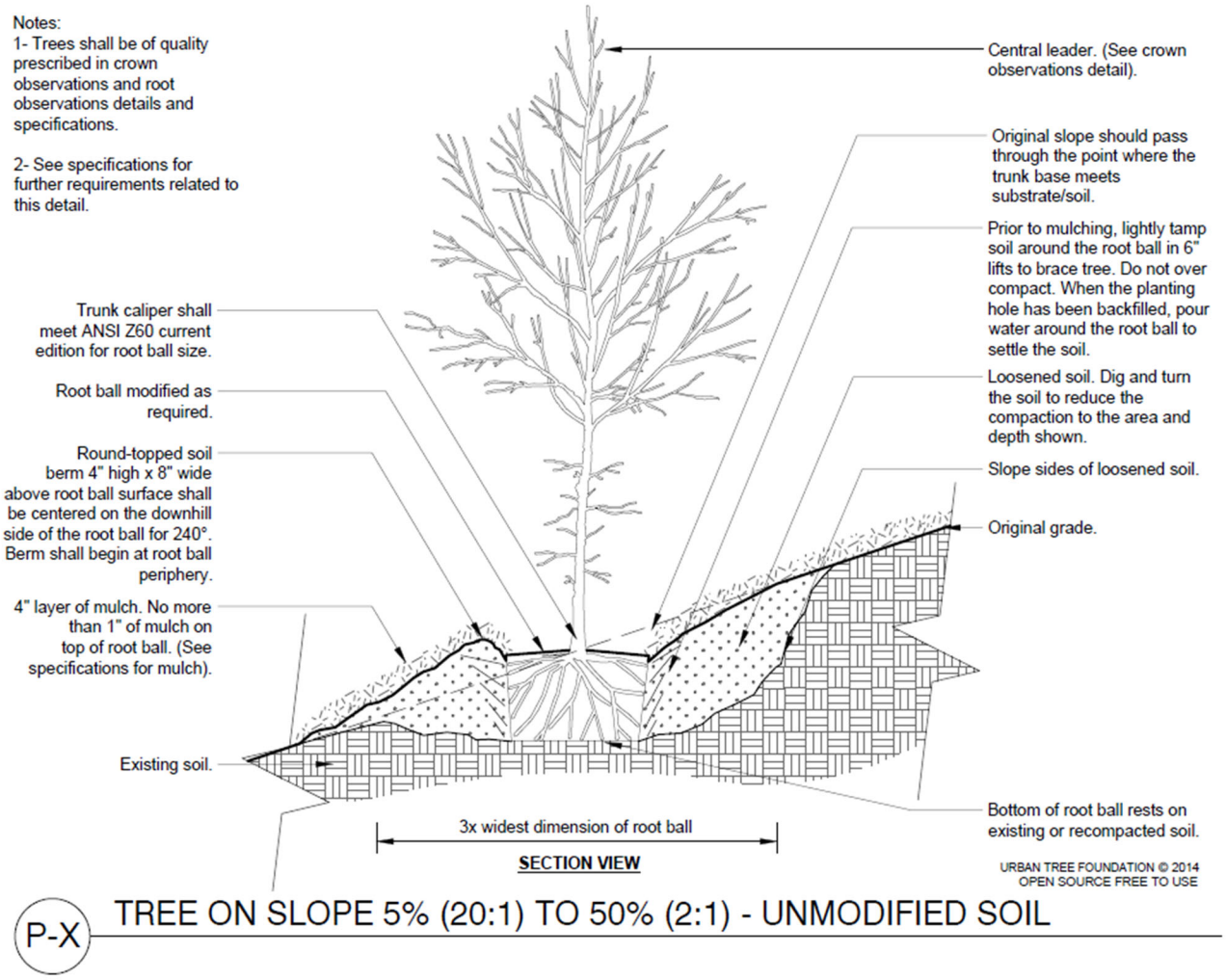
PLANTING DETAIL P-6



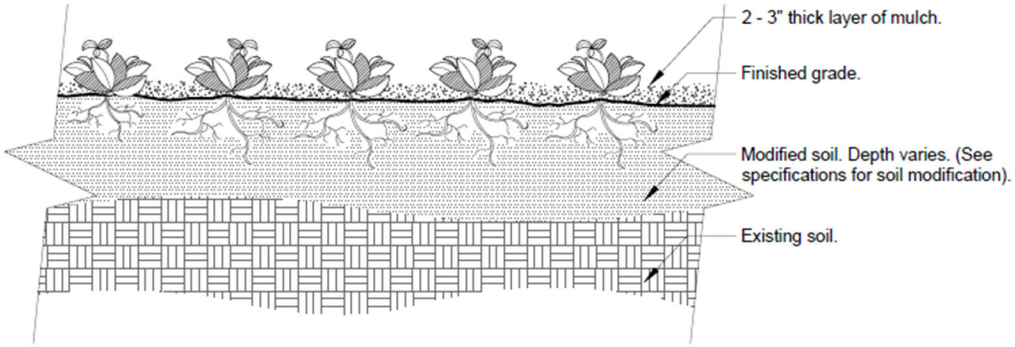
PLANTING DETAIL P-7



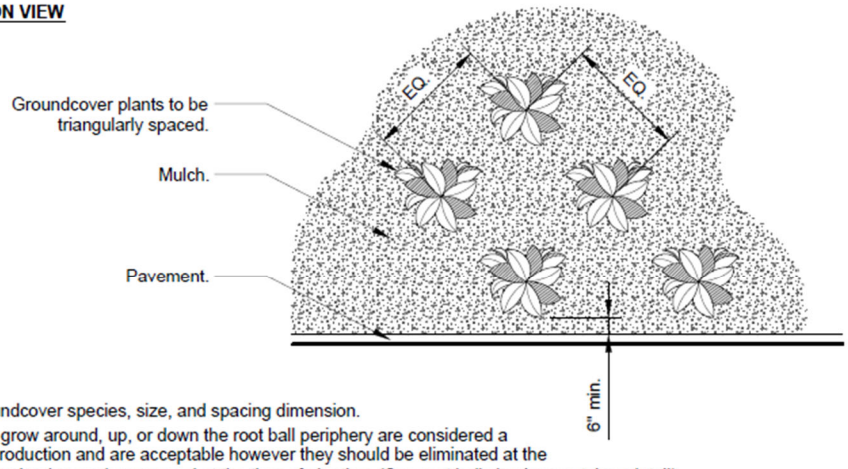
PLANTING DETAIL P-8



PLANTING DETAIL P-9



SECTION VIEW

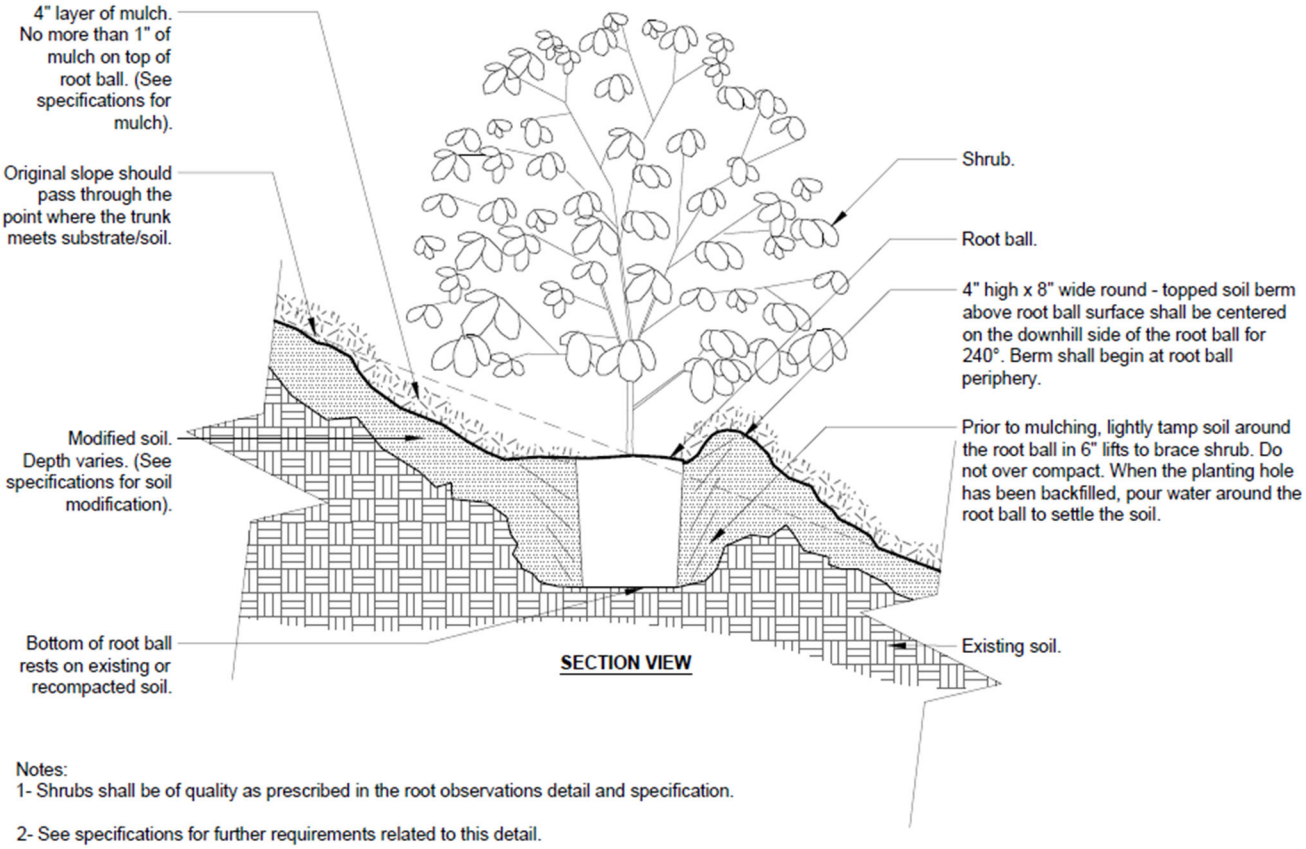


PLAN

Notes:
1- See planting legend for groundcover species, size, and spacing dimension.
2- Small roots (¼" or less) that grow around, up, or down the root ball periphery are considered a normal condition in container production and are acceptable however they should be eliminated at the time of planting. Roots on the periphery can be removed at the time of planting. (See root ball shaving container detail).
3- Settle soil around root ball of each groundcover prior to mulching.

P-X GROUNDCOVER

PLANTING DETAIL P-10

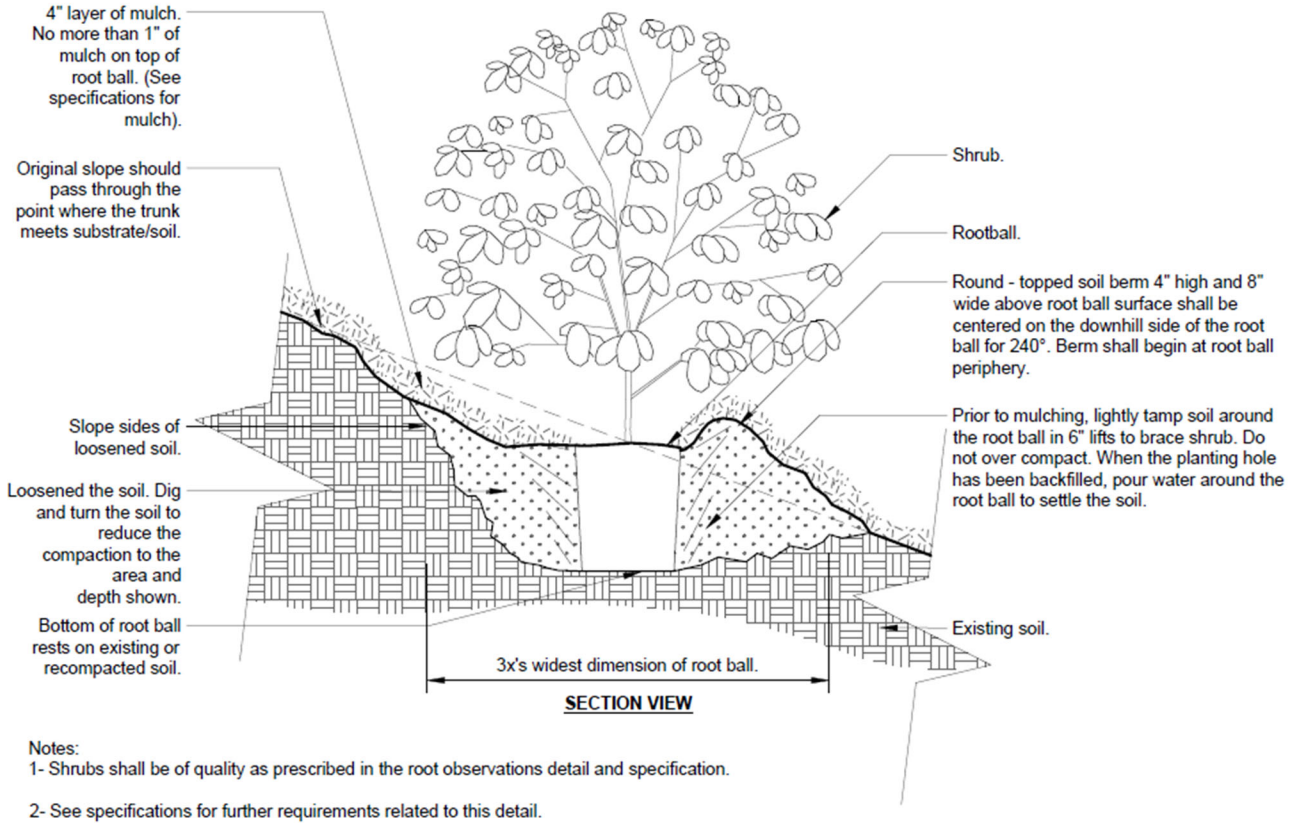


Notes:
1- Shrubs shall be of quality as prescribed in the root observations detail and specification.

2- See specifications for further requirements related to this detail.

P-X SHRUB ON SLOPE 5% (20:1) TO 50% (2:1) - MODIFIED SOIL

PLANTING DETAIL P-11

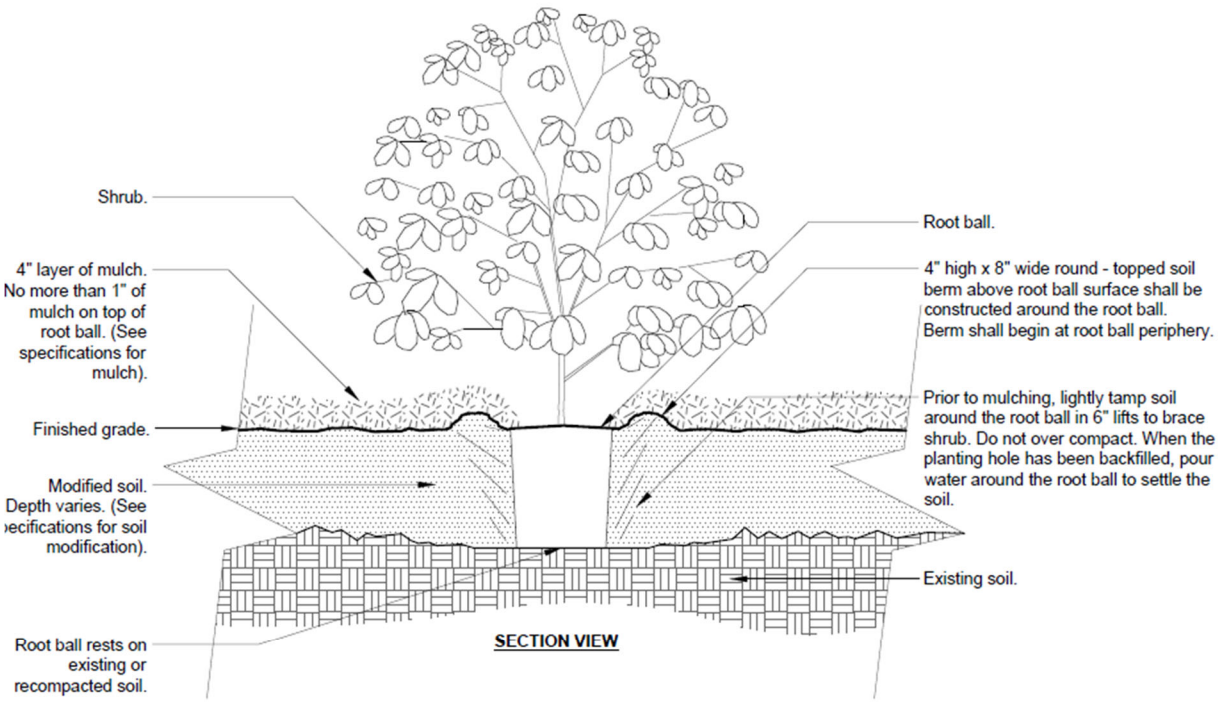


Notes:
1- Shrubs shall be of quality as prescribed in the root observations detail and specification.

2- See specifications for further requirements related to this detail.

P-X SHRUB ON SLOPE 5% (20:1) TO 50% (2:1) - UNMODIFIED SOIL

PLANTING DETAIL P-12

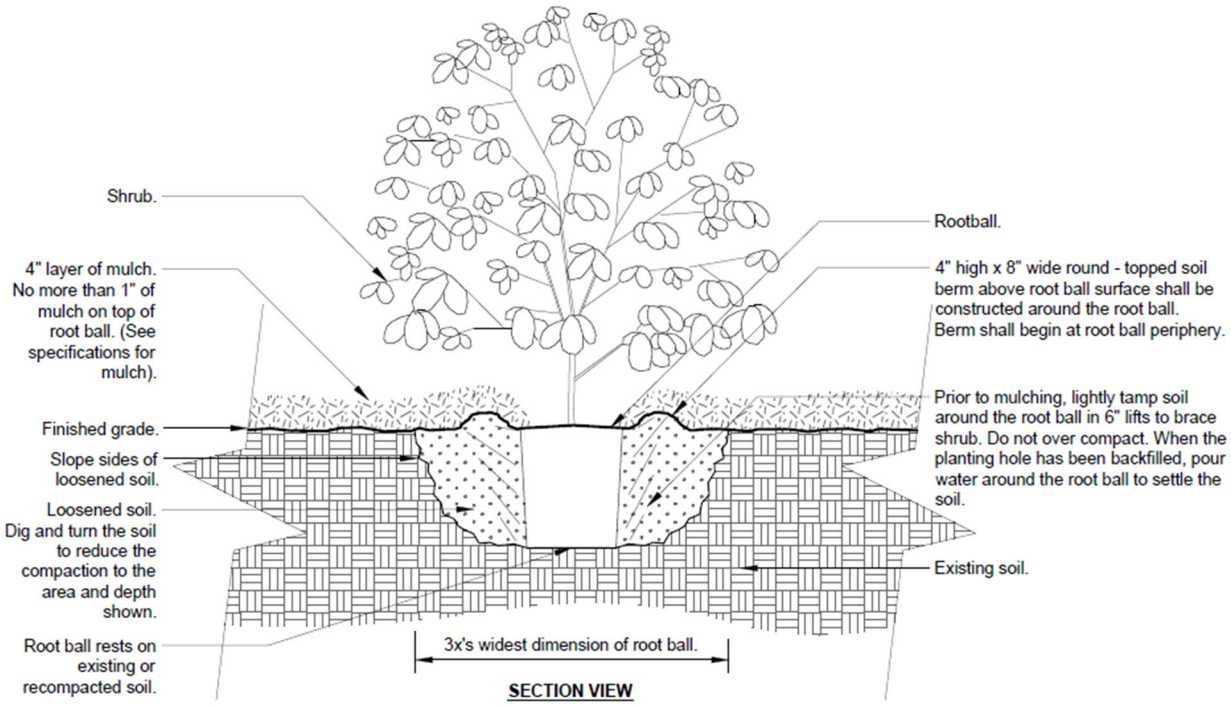


Notes:
1- Shrubs shall be of quality prescribed in the root observations detail and specifications.

2- See specifications for further requirements related to this detail.

P-X SHRUB - MODIFIED SOIL

PLANTING DETAIL P-13

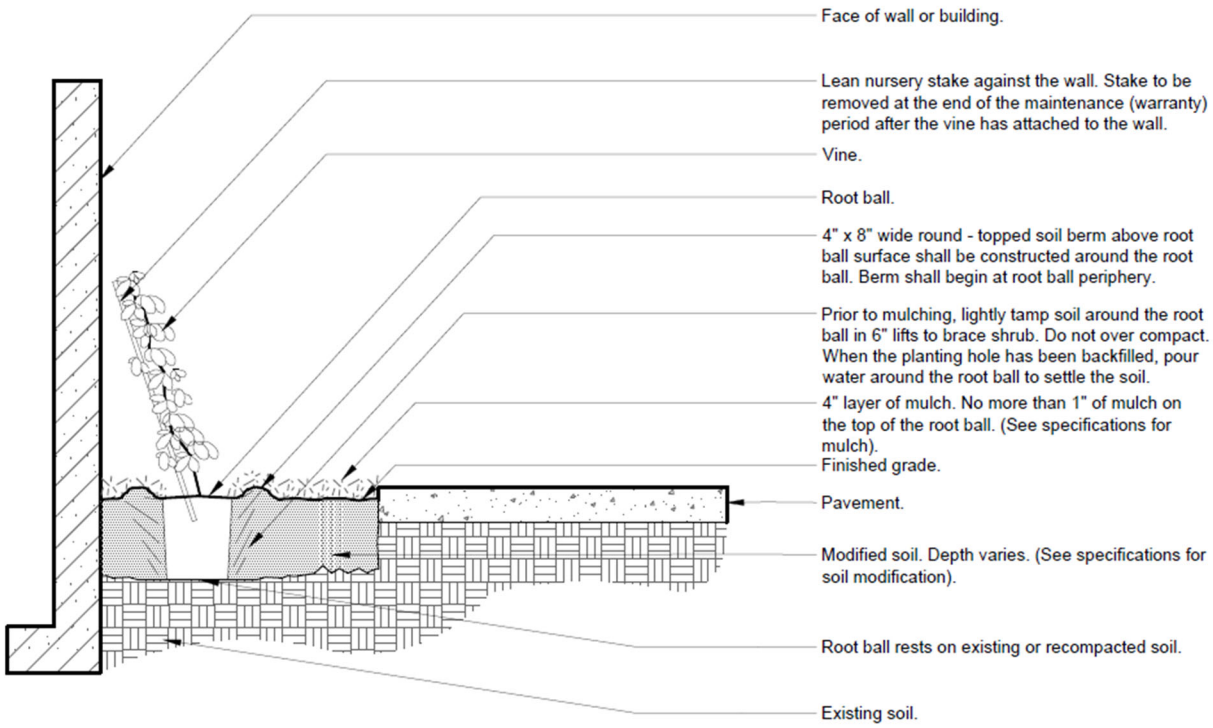


Notes:
1- Shrubs shall be of quality prescribed in the root observations detail and specifications.

2- See specifications for further requirements related to this detail.

P-X SHRUB - UNMODIFIED SOIL

PLANTING DETAIL P-14

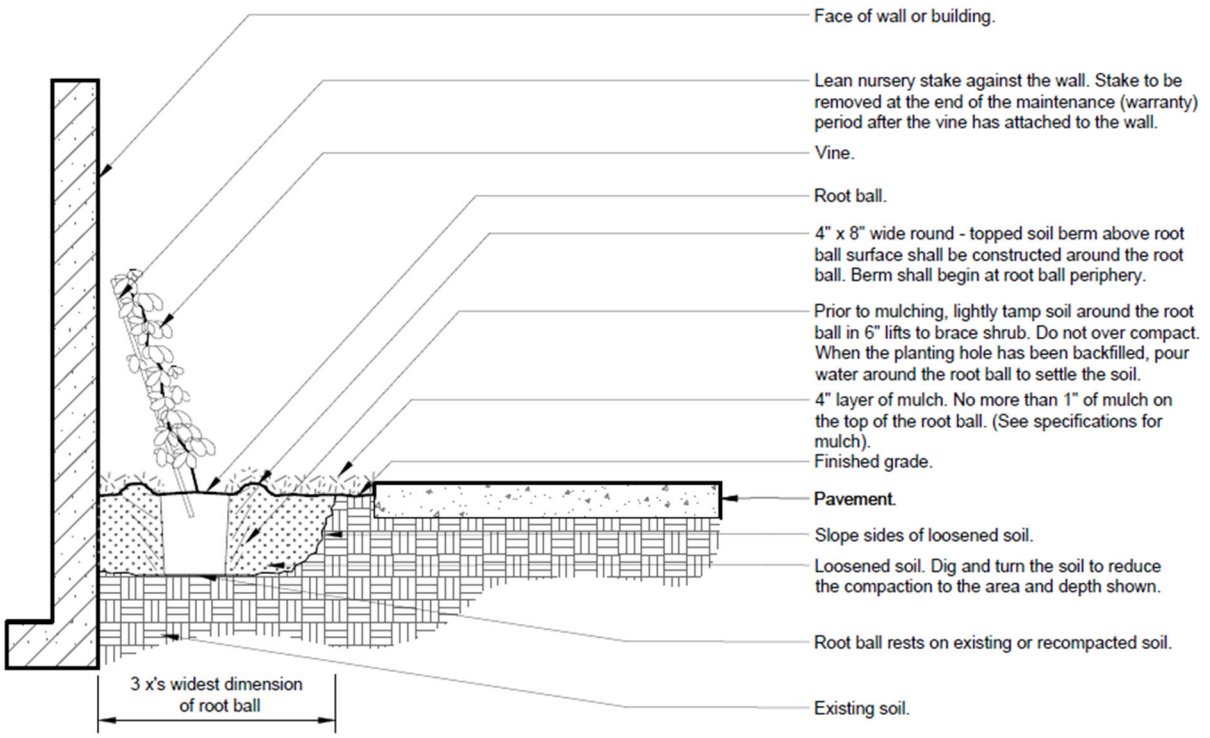


Notes:
1- Vines shall be of quality as prescribed in the root observations detail and specifications.

2- See specifications for further requirements related to this detail.

P-X VINE - MODIFIED SOIL

PLANTING DETAIL P-15



Notes:
1- Vines shall be of quality as prescribed in the root observations detail and specifications.

2- See specifications for further requirements related to this detail.

P-X VINE - UNMODIFIED SOIL

PLANTING DETAIL P-16

CHAPTER 5 ATHLETIC FIELDS & SPORTS COURTS

Section 1 – Baseball Fields

1. PARK SIZE FOR BALL FIELDS

   A. Minimum park size requirement to accommodate regulation ball fields: 2.75 acres

2. DEFINITION

   A. The work covered under this section includes designing and constructing a regulation size baseball field.

   B. This section will cover the field, the dugouts, the spectator area, concessions, and public address system (as applicable).

3. DIMENSIONS

   A. Base length: 90 feet

   B. Mound size: 18 feet diameter; 10-inch height; to be constructed by the City after facility acceptance.

   C. Infield radius: 95 feet from center of mound

   D. Pitching rubber: 60 feet 6 inches from back point of home plate to front of pitching rubber.

   E. Home plate to foul line: minimum: 320 feet; Idea: 320-340 feet.

   F. Home plate to centerfield: minimum: 380 feet; Ideal: 380 - 400 feet.

   G. Backstop to home plate: 30 feet.

   H. Minimum setback: 125 feet from home plate; 100 feet from base to street, parking areas or other park amenities and/or structures.

I. Distance around field: 25 feet minimum flat area wide and clear of any obstructions provided around the outfield limit, except if there is a permanent outfield fence.

4. INFIELD SURFACE

A. Turf

1) Shall be established by sod.

2) The grass type will be determined by the soil type and specific programmed use of the field.

3) Upon installation, all netting at the back of the sod shall be removed.

B. In field mix shall be candlestick mix or approved equivalent.

C. Calcined clay may be added to mix per manufacturer's specifications.

D. The infield mix shall be six inches deep.

E. The finished grade shall be laser graded by a laser grader.

5. INFIELD EQUIPMENT

A. Home plates, bases, base ground anchors, and pitching rubbers shall be provided at the time of construction but shall be installed by the city.

B. For ball diamonds with turf infields, a pitcher's mound cover and a home plate cover shall be provided.

6. INFIELD WATERING

A. All infields shall have a manual irrigation watering system that can water all infield brick dust areas.

B. Enough valves shall be provided depending on the available pressure and the size of the main line at the site.

C. Sprinklers shall be installed along the perimeter of the infield area, 3/4 inch to 1 inch above the brick dust surface.

D. The sprinkler heads shall be Rain Bird 6504 high speed stainless steel.

E. Valves and valve boxes shall be installed at the end of the dugout fence, on the spectator side of the fence out of the path of travel and not blocking any views, Valves shall be Rain Bird GB series valves with the solenoid not wired, Valves shall be installed in rectangular valve boxes at least 14 inches by 20 inches, manufactured by Ametek, Carson, or an approved equal, and installed.

F. Reclaimed water shall be used for all infield watering.

7. FIELD DRAINAGE

A. A sub-grade infield drainage system that meets current regulations shall be installed for all regulation fields.

8. BACKSTOP

A. Permanent backstop required.

B. The back of backstop shall be centered behind the home plate and shall be 30 feet from home plate.

C. Backstops and wings shall be 30 feet in height with a 10-foot cantilever (35 feet total height) behind home plate and extend 60 feet parallel to the first and third base-paths.

D. Wings shall extend an additional 30 feet at a fence height of 30 feet high without a cantilever.

E. The wings shall extend an additional 30 feet at a fence height of 20 feet without a cantilever.

F. Backstop and wing fences shall be constructed with 6-gauge chain link.

9. CONCRETE PADS

   A. The area behind the backstop and wings, from first base to third base, shall be poured concrete; the minimum width of the concrete pad shall be 24 feet, including the bleachers and the access area.

10. BULLPENS

   A. As space permits on lighted fields, 75 feet by 10 feet fenced area with access from the dugouts shall be provided. The fence shall be 8 feet high on all sides. Bullpens shall be located outside the field of play. Alternative bullpen designs may be considered by staff on 80' and 90' fields.

11. WARM UP AREA

   A. As space permits on lighted fields, a flat and unobstructed space shall be provided near the field for two teams to warm up. This area should not be provided if there is an impact on other park activities or facilities.

12. SCOREBOARDS

   A. This is an optional item for ball diamonds.

   B. However, all ball diamonds shall have conduit and wiring installed from the electrical panel to one outfield light pole. Light pole shall be designed with brackets to support future installation of scoreboard.

   C. . Public Address System, conduit wiring and speakers, at City discretion

13. LIGHTING

A. The goal is that all fields at community parks are lighted for night-time use; however, each community park site shall be evaluated for appropriateness for lighting. Lighting will be included at neighborhood park sites with athletic fields whenever possible and appropriate, when lights are provided, access for boom trucks must be provided to facilitate lamp maintenance.
B. Lighting levels shall be per standards specified for each type of field in the sections that follow.
C. Minimum maintained lighting levels shall be 50 foot-candles over the infield and 30 foot-candles over the outfield.

14. DUGOUTS

A. Dugouts shall be located along the first and third baselines, behind the backstop fence.
B. They shall consist of concrete pads at field grade that are sloped away from the field and surrounded by an 8-foot-high 6-gauge chain link with black windscreen fabric on three sides and the top of the dugout.
C. The windscreen fabric on top of the dugout shall be attached at a 9-foot height to the backstop wing, and at the top of the 8-foot-high dugout fence, forming a "roof."
D. The windscreen fabric on back and sides of dugout shall be attached from 18" from ground to 8' in height.
E. The dugouts shall be 30 feet long, 10 feet wide, and equipped with a 25-foot-long aluminum bench, a bat rack (on the home plate side of the dugout), latching gates to the infield swinging into the dugout and gates at each end of the dugout which swing into the dugout.

15. SEATING

A. Spectator seating, when provided, shall consist of tiered concrete structures or portable bleachers containing five (5) rows of seating placed in an area approximately 28 feet by 14 feet. And must be ADA accessible.
B. Bleachers are required on each side of the spectator area.
C. An accessible path of travel to each spectator area is required.
D. An unobstructed area minimum 4 feet wide in front of and on each side of the bleachers and minimum 6 feet wide at the rear of the bleachers shall be provided for accessibility.
E. Concrete walkways shall be provided for access to the area.
F. Companion seating for wheelchair users shall be provided within or immediately adjacent to each bleacher.
G. All concrete shall drain away from the playing field.

16. SHADE

A. Fifty percent (50%) of the spectator area shall be shaded by a shade structure(s) or trees within 5 years of planting.
B. Shade provided by trees shall not interfere with field lights or player safety.

17. TRASH RECEPTACLES

A. All trash receptacles shall be accessible to persons with disabilities and located immediately adjacent to an accessible path of travel.
B. Enough trash receptacles shall be provided to serve the users of the park along the path of travel and/or a convenient distance from a major park amenity, but no less than one for each park.

C. At least one trash receptacle shall be located within convenient proximity of each:

1) Park building including community center and/or restroom.

2) Picnic area

3) Playground area

4) Athletic fields and sports courts

5) Entry into the park from the parking area

18. CEREMONIAL FLAG POLES

A. Location of poles should be in the outfield away from score board.

Section 2 – Softball Fields

1. DIMENSIONS

A. Base length - 60 or 65 feet.

B. Infield radius - 65 feet from center of pitching rubber.

C. Pitching rubber - 50 feet from back point of home plate to front of pitching rubber.

D. Foul line to home plate - Minimum: 300 feet.

E. Centerfield to home plate - Minimum: 325 feet; Ideal: 350 feet.

F. Backstop to home plate - 25 feet.

G. Minimum setback - 75 feet from home plate; 75 feet from base to street, parking areas or other park amenities and/or structures.

H. Distance around field - 25 feet minimum flat area wide and clear of any obstructions provided around the outfield limit, except if there is a permanent outfield fence.

2. INFIELD SURFACE

   A. Candlestick infield mix/Brick dust.

   B. Calcined clay may be added to mix per manufactures specifications.

   C. The infield mix shall be six inches deep.

   D. The finished grade shall be laser graded by a laser grader.

3. INFIELD EQUIPMENT

   A. Home plates, bases, base ground anchors, and pitching rubbers shall be provided at the time of construction but shall be installed by the city.

   B. For ball diamonds with turf infields, a pitcher's mound cover and a home plate cover shall be provided.

4. INFIELD WATERING

   A. All infields shall have a manual irrigation watering system that can water all infield skinned areas.

   B. Enough valves shall be provided depending on the available pressure and the size of the main line at the site.

   C. Sprinklers shall be installed along the perimeter of the infield area, 3/4 inch to 1 inch above the brick dust surface.

   D. The sprinkler heads shall be Rain Bird 6504 high speed stainless steel.

   E. Valves and valve boxes shall be installed at the end of the dugout fence, on the spectator side of the fence out of the path of travel and not blocking any views, Valves

shall be Rain Bird GB series valves with the solenoid not wired, Valves shall be installed in rectangular valve boxes at least 14 inches by 20 inches, manufactured by Ametek, Carson, or an approved equal, and installed.

F. Reclaimed water shall be used for all infield watering.

5. FIELD DRAINAGE

   A. A sub-grade infield drainage system that meets current regulations shall be installed for all regulation fields.

6. BACKSTOP

   A. Permanent backstop required.

   B. The back of backstop shall be centered behind the home plate and shall be 25 feet from home plate.

   C. Backstops and wings shall be 30 feet in height behind home plate and extend 90 feet parallel to the first and third base-paths, including the front of the dugouts.

   D. Backstop and wing fences shall be constructed with 6-gauge chain link.

7. CONCRETE PAD

   A. The area behind the backstop and wings, from first base to third base, shall be poured concrete as shown in the diagram below.

   B. The minimum width of the concrete pad shall be 24 feet.

8. WARM UP AREA

   A. As space permits on lighted fields, a flat and unobstructed space shall be provided near the field for two teams to warm up.

9. SCOREBOARDS

   A. This is an optional item for baseball and softball fields.

   B. Baseball or softball fields shall have conduit and wiring installed from the electrical panel to one outfield light pole capable of supplying electricity to a future scoreboard.

   C. Determination of conduit size and wiring should satisfy scoreboard manufacturer's details and recommendations.

   D. Scoreboards shall have a separate and complete support structure apart from the field lighting and fencing.

10. LIGHTING

   A. The goal is that all fields at community parks are lighted for night-time use; however, each community park site shall be evaluated for appropriateness for lighting, Lighting will be included at neighborhood park sites with athletic fields whenever possible and appropriate, when lights are provided, access for boom trucks must be provided to facilitate lamp maintenance.

   B. Lighting levels shall be per standards specified for each type of field in the sections that follow.

   C. Minimum maintained lighting levels shall be 30 foot-candles over the Infield and 20 foot-candles over the outfield.

11. DUGOUTS

   A. Dugouts shall be located along the first and third baselines, behind the backstop fence.

B. They shall consist of concrete pads at field grade that are sloped away from the field and surrounded by an 8-foot-high 6-gauge chain link with black windscreen fabric on three sides and the top of the dugout.

D. The windscreen fabric on top of the dugout shall be attached at a 9-foot height to the backstop wing, and at the top of the 8-foot-high dugout fence, forming a "roof."

E. The windscreen fabric on the back and sides of dugout shall be attached from 18" from ground to 8' in height.

F. The dugouts shall be 30 feet long, 10 feet wide, and equipped with a 25-foot-long aluminum bench, a bat rack (on the home plate side of the dugout), latching gates to the infield swinging into the dugout and gates at each end of the dugout which swing into the dugout.

12. SEATING

A. Spectator seating, when provided, shall consist of tiered concrete structures or portable bleachers containing five (5) rows of seating placed in an area approximately 28 feet with 14 feet.

B. Bleachers are required on each side of the spectator area.

C. An accessible path of travel to each spectator area is required.

D. An unobstructed area minimum 4 feet wide in front of and on each side of the bleachers and minimum 6 feet wide at the rear of the bleachers shall be provided for accessibility.

E. Concrete walkways shall be provided for access to the area.

13. SHADE

A. Fifty percent (50%) of the spectator area shall be shaded by a shade structure(s) or trees within 5 years of planting.

B. Shade provided by trees shall not interfere with field lights or player safety.

14. TRASH RECEPTACLES

A. All trash receptacles shall be accessible to persons with disabilities and located immediately adjacent to an accessible path of travel.

B. Enough trash receptacles shall be provided to serve the users of the park along the path of travel and/or a convenient distance from a major park amenity, but no less than one for each park.

C. At least one trash receptacle shall be located within convenient proximity of each:

1) Park building including community center and/or restroom.

2) Picnic area

3) Playground area

4) Athletic fields and sports courts

5) Entry into the park from the parking area

Section 3 – Soccer Fields

3.1 Synthetic Soccer Fields

1. SYNTHETIC TURF SURFACE

A. FieldTurf Tarkett® Revolution 360© carpet at 2” monofilament fiber length w/ surelock finger coated backing. Color pantone: FT Green w/ fiber performance index: 81 min.

B. FieldTurf Tarkett® CoolPlay© infill mix to 1-1/4” depth. 58% Silica Sand 32% Cryogenic rubber and 10% rubber encapsulated extruded cork cap.

C. Brock® powerbase/YSR© Shockpad Approx. 1” thick permeable polypropylene.

D. Synthetic turf system testing requirements

1) The artificial grass system must maintain a G-max of less than 200 for the life of the Warranty as per ASTM F1936.

E. The installed artificial grass monofilament FieldTurf shall have the following properties:

Standard	Property	Specification
ASTM D1577	Fiber Denier	14,500
ASTM D5823	Min. Pile Height	2”
ASTM D1577	Fiber Thickness	380 Microns
ASTM D5793	Stitch Gauge	3/4”
ASTM D5848	Pile Weight	36+oz/square yard
ASTM D5848	Primary Backing	8+oz/square yard
ASTM D5848	Secondary Backing	14+oz/square yard
ASTM D5848	Total Weight	58+oz/square yard
ASTM D1335	Tuft Bind (Without Infill)	8+ lbs.
ASTM D5034	Grab Tear (Width)	200 lbs./force
ASTM D5034	Grab Tear (Length)	200 lbs./force
ASTM D4491	Carpet Permeability	>40 inches/hour
ASTM F1936	Impact Attenuation (Gmax)	<200
	Min. Infill Material Depth	1.25 inches
	Min. Extruded Cooling Composite	0.6lbs/square foot
	Min. Sand Infill Component	3.65lbs/square foot
	Min. Cryogenic Rubber Infill	2.0lbs/square foot
	Total Product Weight	958oz/square yard

Variation of +/- 5% on above listed properties is within normal manufacturing tolerances.

2. SYNTHETIC TURF BASE PREPARATION

A. A licensed geotechnical engineer familiar with synthetic turf construction and local experience shall provide synthetic turf base and subgrade recommendations.

B. Recommendations should cover the following items:

1) Depth of custom modified class II permeable base and three reputable suppliers of that material, in proximity to the project

a. Min. and Max. Compaction requirements of base material(s)

2) Existing subgrade preparation and compaction

b. Including or excluding lime or cement treatment

3) Any recommended geotextiles, filter fabrics or soil stabilizers.

C. Synthetic Turf Permeable Base rock of crushed aggregate with min. gradation and characteristics meeting the requirements of a custom modified Class 2 permeable base aggregate complying with the specific gradation shown below:

Sieve Size	Percentage Passing
1"	100
3/4"	80-100
3/8"	30-50
No. 4	25-40
No. 8	10-30
No. 30	7-25
No. 40	5-17
No. 50	0-7
No. 200	0-3

D. Laboratory testing of samples prior to submitting custom modified class 2 permeable base material for review by the design team.

	Test Method	Criteria
1)	LA Abrasion Test (ASTM c 131)	Not to Exceed 40
2)	Sulfate Soundness Test (ASTM C 88)	Not to exceed 12% loss
3)	Permeability of Granular Soils (ASTM D 2434-68)	24” Per hour Min.
4)	Particle size and gradation (ASTM D 6913)	Per section 3 Sieve analysis

E. Laboratory testing of material delivered onsite and in place.

	Test Method	Criteria
1)	LA Abrasion Test (ASTM c 131)	Not to Exceed 40
2)	Permeability of Granular Soils (ASTM D 2434-68)	24” Per hour Min.
3)	Particle size and gradation (ASTM D 6913)	Per section 3 Sieve analysis

F. Laboratory testing of material Installed in place per the contract documents.

	Test Method	Criteria
1)	Permeability of Granular Soils (ASTM D 2434-68)	24” Per hour Min.
2)	Particle size and gradation (ASTM D 6913)	Per section 3 Sieve analysis
3)	Compaction testing (ASTM D 698)	Per Geotechnical Engineer

G. Onsite testing of material Installed prior to placement of Synthetic Turf

	Test Method	Criteria
1)	Permeability of base stone (ASTM F 2898-11)	15” Per hour Min.
2)	Particle size and gradation (ASTM D 6913)	Per section 3 Sieve analysis

H. Onsite testing of material Installed after placement of Synthetic Turf

	Test Method	Criteria
1)	Infiltration rate of synthetic turf (ASTM D 3385-09)	24” Per hour Min.

3. SYNTHETIC TURF DRAINAGE

A. An impermeable liner below the custom modified Class II permeable base is required unless indicated otherwise by the geotechnical engineer.

1) A 30 mil HDPE liner shall be installed with heat welded and thermally fused seems.

B. ADS AdvanEdge 1”x12” flat drains w/ filter sleeves shall be installed 15’-20’ O.C. or as directed by the project civil engineer.

1) Flat Panel Drains shall connect to large perimeter Storm Drain trenches with a min. holding capacity of a 10yr storm event or as directed by the project Civil engineer.

C. Perimeter Storm Drainpipe.

1) 4” through 10” solid wall and perforated drainpipe shall be smooth interior wall conforming to AASHTO M252

2) 12” through 36” solid wall and perforated drainpipe shall be smooth interior wall conforming AASHTO M294 Type S.

D. Perimeter Drainage Trench.

1) Shall be contained by the impermeable liner or as recommended by the geotechnical engineer.

2) ½- inch crushed aggregate drain rock for encasing perforated drainage piping consisting of clean, washed, virgin, well-graded, crushed stone, free of shale, clay, organic materials, and debris shall fill the entire perimeter trench compacted and installed in lifts as directed by the geotechnical engineer.

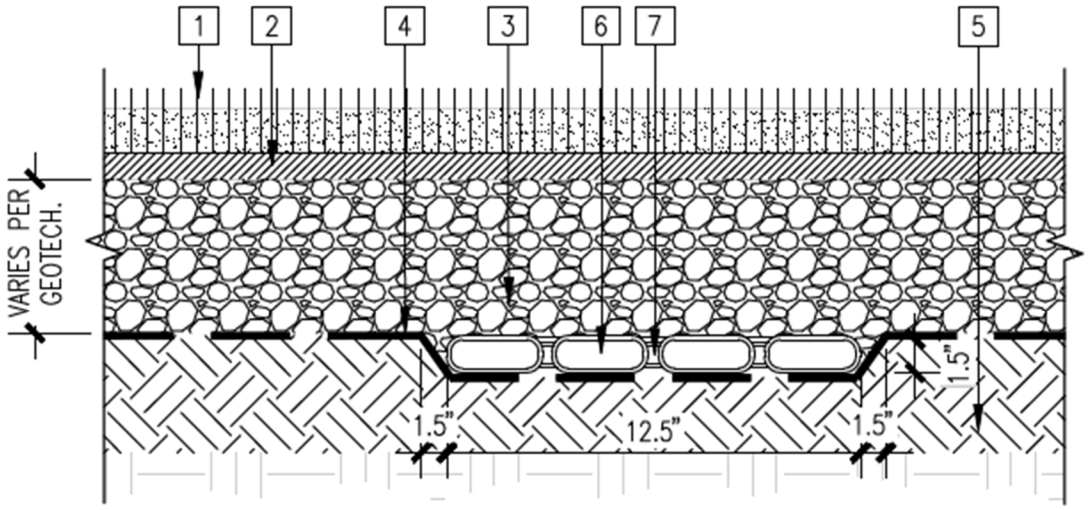
3) Drain rock shall be wrapped in Mirafi 140N filter fabric or as recommended by the geotechnical engineer.

4) Comply with the testing requirements of aggregate material under synthetic turf.

C. Leveling Course: 3/8-inch virgin crushed aggregate rock for leveling above the perimeter trench consisting of clean, washed, virgin, well-graded, crushed stone, free of shale, clay, organic materials, and debris.

1) Provide leveling course for top 2” above perimeter drainage trenches directly below the shock pad.

2) Comply with testing requirements of aggregate material under synthetic turf.



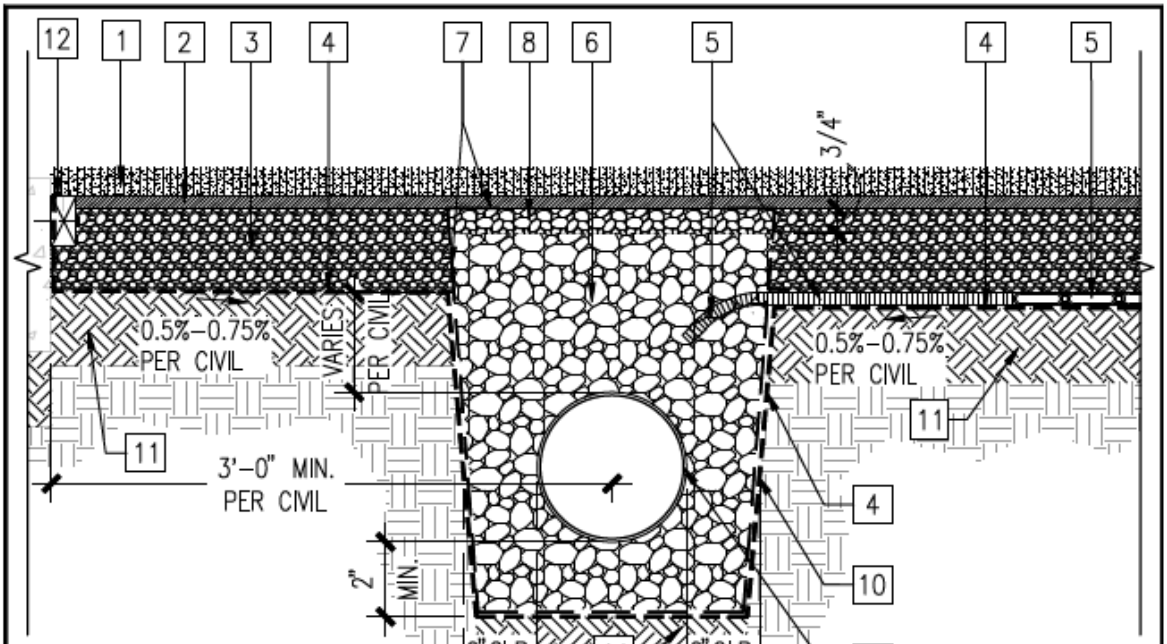
1. SYNTHETIC TURF SYSTEM, FIELDTURF® REVOLUTION 360© "CARPET" W/ COOL PLAY© INFILL PER PARK AMENITY DESIGN STANDARD SPECIFICATIONS CHAPTER 4, SECTION 3 OR APPROVED EQUAL FOR SYNTHETIC TURF SOCCER FIELDS
2. COMPOSITE SHOCK PAD, BROCK® POWERBASE/YSR© PER PARK AMENITY DESIGN STANDARD SPECIFICATIONS CHAPTER 4, SECTION 3 OR APPROVED EQUAL FOR SYNTHETIC TURF SOCCER FIELDS
3. CUSTOM MODIFIED CLASS 2 PERMEABLE AGGREGATE BASE MOISTURE CONDITIONED & COMPACTED PER GEOTECHNICAL ENGINEER
4. POLYFLEX® 30 MIL. HDPE IMPERMEABLE LINER OR APPROVED EQUAL WITH HEAT WELDED/THERMALLY FUSED SEAMS WITH A 24" OVERLAP MIN.
5. SUBGRADE MOISTURE CONDITIONED AND COMPACTED TO THE REQUIRED RELATIVE DENSITY PER THE GEOTECHNICAL ENGINEER.
6. FLAT PANEL DRAIN, 1" X 12" ADS ADVANEDGE© DRAINS W/ FILTER FABRIC SLEEVES TRENCHED INTO SUB-GRADE
7. SECURE FLAT PANEL DRAIN SYSTEM PER MANUF. RECOMMENDATIONS

NOTE:

A: SLOPE COMPACTED SUBGRADE FOR SYSTEM 0.5%–0.75% TO PERIMETER SUBDRAINS, PER CIVIL

B: ANY SUBSTITUTION REQUEST SUBMITTED AS AN "OR EQUAL" SHALL MEET THE REQUIREMENTS OF THE SPECIFICATIONS AS WELL AS THE MATERIAL TYPES AND PERFORMANCE STANDARDS OF THE SPECIFIED SYSTEM, INCLUDING BUT NOT LIMITED TO: 1) INFILL MATERIAL TYPE, CHARACTERISTICS, DEPTHS, QUANTITIES AND PERCENTAGES, 2) DENSITY, MINIMUM GAUGE, LENGTH AND TYPE OF FIBER, 3) BACKING MATERIALS AND COATINGS, 4) PERCOLATION RATES OF THE BACKING AND OVERALL SYSTEM, 5) DRAINAGE 6) WARRANTEE TYPE, LIMITATIONS, COVERAGE AND DURATIONS, 7) UV RESISTANCE, 8) SHEER STRENGTH AND TUFT BIND, 9) SEWN SEEMS, 10) ROLL LAYOUT AND PATTERNS 11) ALL OTHER CHARACTERISTICS OF THE SPECIFIED SYSTEM.

	DRAWN BY: C. LINDSAY	SOCCER FIELD SYNTHETIC TURF SYSTEM	AF-1
	CHECKED BY: D. SEALE		
	APPROVED BY: J. TEIXEIRA		
	DATE: MARCH, 2018	CITY OF SANTA CLARA	CHAPTER 4 SECTION 3



1. SYNTHETIC TURF SYSTEM
2. SHOCK PAD
3. CUSTOM MODIFIED CLASS 2 PERMEABLE AGGREGATE BASE
4. IMPERMEABLE LINER
5. FLAT PANEL DRAINS, LAP INTO DRAINAGE TRENCH, TYP
6. ¾" MINUS WASHED DRAIN ROCK COMPACTED PER GEOTECHNICAL
7. WRAP DRAIN ROCK W/ MIRAFI 140N FILTER FABRIC AND LAP 6" OVER THE TOP OF THE LEVELING COURSE FREE FROM WRINKLES, TYP
8. LEVELING COURSE, ⅜" MINUS WASHED DRAIN ROCK COMPACTED TO ALLOW FOR DRAINAGE AND PREVENT ALL SETTLING
9. PERFORATED DRAIN PIPE. SLOPE AND SIZE PER CIVIL ENGINEER
10. BATTER SIDES OF TRENCH
11. COMPACTED SUBGRADE PER GEOTECHNICAL
12. 2x4 TREX HEADER SECURED W/ ¼x4 SIMPSON STRONG TIE BLUE TITEN FASTENERS 18" O.C.

1 / AF

NOTE:

A: ADHERE IMPERMEABLE LINER AROUND ADDITIONAL PENETRATIONS W/ WATER TIGHT SEALS, TYP.

B: ANY SUBSTITUTION REQUEST SUBMITTED AS AN "OR EQUAL" SHALL MEET THE REQUIREMENTS OF THE SPECIFICATIONS AS WELL AS THE MATERIAL TYPES AND PERFORMANCE STANDARDS OF THE SPECIFIED SYSTEM, INCLUDING BUT NOT LIMITED TO: 1) INFILL MATERIAL TYPE, CHARACTERISTICS, DEPTHS, QUANTITIES AND PERCENTAGES, 2) DENSITY, MINIMUM GAUGE, LENGTH AND TYPE OF FIBER, 3) BACKING MATERIALS AND COATINGS, 4)PERCOLATION RATES OF THE BACKING AND OVERALL SYSTEM, 5) DRAINAGE 6) WARRANTEE TYPE, LIMITATIONS, COVERAGE AND DURATIONS , 7) UV RESISTANCE, 8) SHEER STRENGTH AND TUFT BIND, 9) SEWN SEEMS, 10) ROLL LAYOUT AND PATTERNS 11) ALL OTHER CHARACTERISTICS OF THE SPECIFIED SYSTEM.

DRAWN BY: C. LINDSAY	SYNTHETIC TURF PERIMETER DRAIN SYSTEM	AF-2
CHECKED BY: D. SEALE		
APPROVED BY: J. TEIXEIRA		
DATE: JANUARY, 2018	CITY OF SANTA CLARA	CHAPTER 4 SECTION 3

3.2 Natural Soccer Fields

1. NATURAL TURF SURFACE

   Nursery-grown sod shall have the following characteristics:

   A. Sod for planting areas shall be dense, healthy, field-grown on sandy soil with grass having been mowed at 1-inch height before lifting from field.

   B. Sod shall be dark green in color, relatively free of thatch, free from disease, weeds, and harmful insects.

   C. Sod shall be reasonably free of objectionable grassy and broadleaf weeds. Sod shall be considered weed free if no more than 2 such weeds are found per 100 sq feet of sod.

   D. Sod shall be rejected if found to contain the following weeds: common bermudagrass, quack grass, Johnson grass, nimble weed, thistle, bindweed, bentgrass, perennial sorrel, and bromegrass.

   E. Sod variety shall be: Primary choice shall be Latitude 36, a with the secondary choice being Sports Turf Grass – Bandera. The sod shall be pre-ordered and grown atop the native sand base.

2. NATURAL TURF SOIL

   A. TOPSOIL: Site to be rough graded to elevations shown on Civil Drawings.

   B. All topsoil to be used for planting, shall have a complete soil analysis performed in a report from a reputable soil testing laboratory.

   C. Root zone for sand-based turf and materials (USGA Root Zone Mix)

      - Refer to planting details for depth.
      - Recommendations for nutrients must be submitted to the landscape architect for review.

- USGA Amended Rootzone Mix shall be the following:

a. 70% USGA Sand

b. 20% Peat Moss / Canadian Sphagnum

c. 10% Organic Greenwaste Compost

d. Mycorrhiza per manufacturer

3. NATURAL TURF BASE PREPARATION

A. Gravel base shall be placed above the prepared subgrade and below USGA Rootzone mix. See planting details for required depth

B. ASTM C-136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates shall be performed prior to delivery to the site.

C. Compact per Geotechnical Engineer's recommendations.

Section 4 – Basketball Courts

4.1 Outdoor Basketball Courts

1. DIMENSIONS

A. Playing area - 84 feet by 50 feet for full court; 47 feet by 50 feet for half court.

B. Setback - Court surface shall extend a minimum of 5 feet around the entire playing field and a minimum of 10 feet between 2 courts that are placed side-by-side.

C. Court Gradient - 1.0 to 1.5 percent along the width (shortest dimension) of the court.

D. Parks & Recreation may consider a non-standard court based on community input and recreation program for the park.

E. Placement of the court shall consider the overall court design giving attention to aesthetics, adjacent planting areas, grass, and pathways balancing hardscape with the natural environment.

2. SURFACE

   A. Courts (including the 5' safety zone) shall have a poured concrete surface with a medium broom finish to prevent slipping.

3. PLACEMENT

   A. Attention should be given to the path of travel and safe access to and from the court.

   B. When there is a light pole between the courts, the minimum distance shall be 17'1" (which includes 13" for the width of the pole and 8' clear on each side between the light pole and the court).

   C. Where two or more courts are provided at one site, the courts should be configured for multipurpose use, per Basketball Court Placement Diagram on page 15.

4. MARKINGS

   A. All markings on the playing surface shall be applied as shown below, using a wear-resistant, colored substance.

   B. All lines shall be a minimum of 2 inches wide, unless otherwise noted.

   C. The color of the markings shall be determined during the final design.

   D. Score lines shall not negatively impact play.

5. BASKETBALL GOAL STANDARD

   A. Permanent installation

      1) Bison Mega Duty Basketball Unit

         a. Steel rectangular backboard 42” x 60”

      2) First Team, Inc. Tyrant gooseneck systems

a. Acrylic rectangular backboard 36”x60”

B. Removable installation

1) Captain Internal Acrylic HD Breakaway

a. Backboard 32” x 60” breakaway rim

C. Co-located goals for multi-sports use must be reviewed by Parks & Recreation Department considering key criteria of compatibility, aesthetics, and need.

6. TRASH CANS

A. One trash can to be located outside of the perimeter & adjacent to each court.

7. QUICK COUPLER

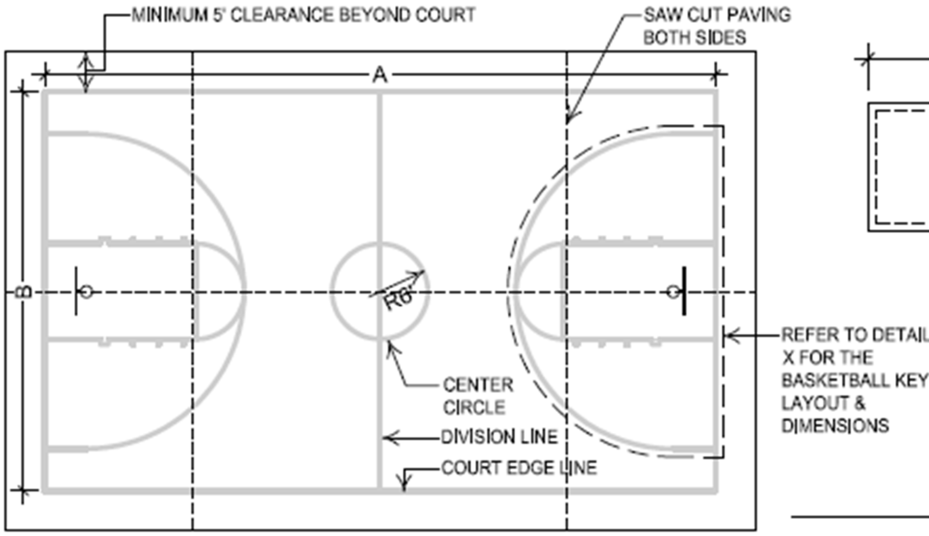
A. Hose bib can be located outside the perimeter & adjacent to each court.

1) One quick coupler shall be provided for every two courts.

2) Quick couplers shall be located so that water flows away from the quick couplers when hosing down the courts (on the high side of the slope).

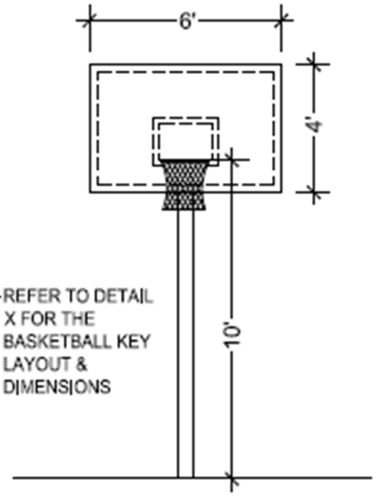
3) Quick couplers shall be of a larger enough size with pressure to allow washing courts.

4) Preference to use recycled water if available.

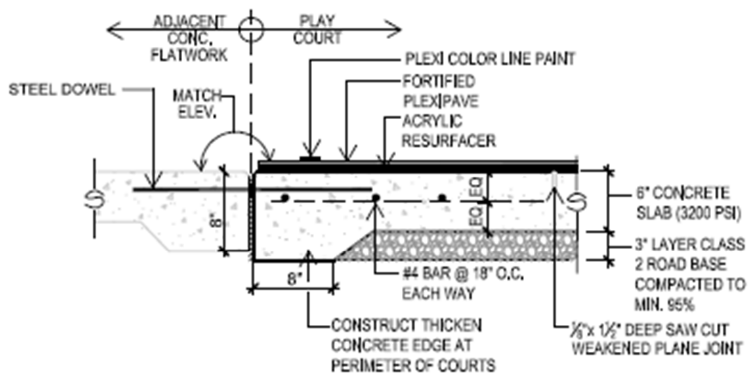


BASKETBALL COURT (FULL)

PLAN VIEW
SCALE: 1" =20'



POST, BACKBOARD, NET & RIM



1c COURT PAVING
3/4"=1'-0"

COURT EQUIPMENT
BASKETBALL

PRODUCT: x
MODEL No.: x
POST & SUPPORT MEMEBER FINISH: x
CONTACT: x
PHONE: x
INSALLATION NOTE: x

BASKETBALL COURT DIMENSIONS			
	YOUTH	HIGH SCHOOL	COLLEGE
A	74'	84'	94'
B	42'	50'	50'
R	19.75'	19.75'	20.75'

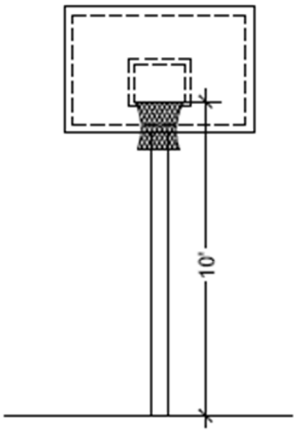
NOTES:

1. ALL COURT LINES TO BE 2" THICK
2. SURFACE PER SPECS.
3. INSTALL REGULATION BACKBOARD, HOOP AND NETTING. POLE INSTALLATION PER MANUFACTURER SPECS.
4. 5' PLAY ZONE AROUND COURT, 10' MINIMUM TO ADJACENT COURTS.

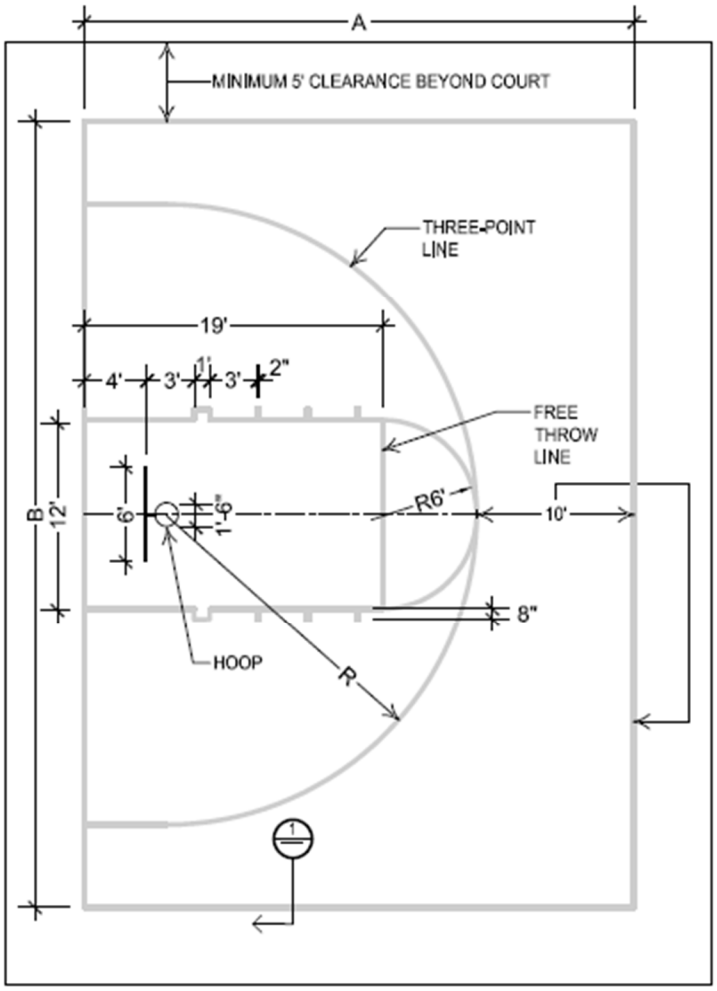
BASKETBALL COURT TYPICAL LAYOUT (FULL)

David Volz Design
Landscape Architects and Park Planners

SANTA CLARA SPORT COURTS STANDARD PLANS	BASKETBALL COURT (FULL)	
	HARDCOURT DETAILS	DETAIL NO. XX



POST, BACKBOARD, RIM & NET



"MAINTAIN A MINIMUM OF 10' FROM TOP OF KEY

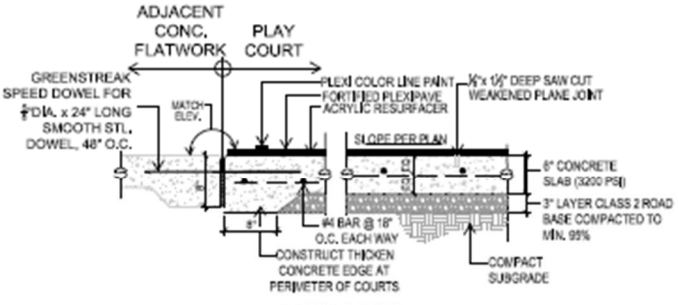
NOTES:

1. ALL COURT LINES TO BE 2" THICK
2. SURFACE PER SPECS.
3. INSTALL REGULATION BACKBOARD, HOOP AND NETTING. POLE INSTALLATION PER MANUFACTURER SPECS.
4. ALLOW FOR 5' PLAY ZONE AROUND COURT, 10' MINIMUM TO ADJACENT COURTS.

BASKETBALL COURT DIMENSIONS	
A	MIN. 35' *
B	MIN. 42' - MAX. 50'
R	19.75'

* IF (A) DISTANCE IS LESS THAN 35' MUST RECEIVE CITY APPROVAL.

BASKETBALL COURT (HALF)
PLAN VIEW
SCALE: 1" =10'



COURT PAVING
1/2"=1'-0"

COURT EQUIPMENT

BASKETBALL

PRODUCT: x
MODEL No.: x
POST & SUPPORT MEMEBER FINISH: x
CONTACT: x
PHONE: x
INSALLATION NOTE: x

BASKETBALL COURT TYPICAL LAYOUT (HALF)

SANTA CLARA SPORT COURTS STANDARD PLANS	BASKETBALL COURT (HALF)	
	HARDCOURT DETAILS	DETAIL NO. XX

4.2 Indoor Basketball Courts

1. DIMENSIONS

A. Playing area – 94 feet by 50 feet for full court, or 4,700 square feet (the NBA and College basketball standard); 47 feet by 50 feet for half court.

B. Setback - Court surface shall extend a minimum of 5 feet around the entire playing field and a minimum of 10 feet between multiple courts that are placed side-by-side.

C. Parks & Recreation may consider a non-standard court based on community input and recreation program for the park.

D. Placement of the court shall consider the overall court design giving attention to aesthetics, adjacent planting areas, grass, and pathways balancing hardscape with the natural environment.

3. SURFACE

A. Parquet flooring.

3. PLACEMENT

A. Placement shall depend on the dimension of the gym space setting, function and programming.

4. BASKETBALL GOAL STANDARD

D. Permanent installation

1) Bison Mega Duty Basketball Unit

a. Steel rectangular backboard 42” x 60”

2) First Team, Inc. Tyrant gooseneck systems

a. Acrylic rectangular backboard 36”x60”

E. Removable installation

1) Captain Internal Acrylic HD Breakaway

a. Backboard 32” x 60” breakaway rim

F. Co-located goals for multi-sports use must be reviewed by Parks & Recreation Department considering key criteria of compatibility, aesthetics, and need.

5. MARKINGS

A. All markings on the playing surface shall be applied using a wear-resistant, colored substance.

B. All lines shall be a minimum of 2 inches wide, unless otherwise noted.

C. The color of the markings shall be determined during the final design.

D. Score lines shall not negatively impact play.

Section 5 – Tennis Courts

DIMENSIONS

A. Playing Area: 36 feet by 78 feet

B. Safety Zone Clearance

1) 12-foot side clearance on each side and 21 feet between each baseline and the fence.

2) For public parks, the concrete shall extend 18 inches out beyond the fence around each court (or courts if more than one) to reduce court maintenance.

C. Court Gradient: acceptable gradient range for tennis courts is 0.5 to 1.0 percent, with a cross slope.

ACCESSIBILITY

A. Tennis court gates or fence openings shall be ADA accessible.

3. GATES

A. Courts in public parks shall have a double gate at the end of each court for maintenance access.

4. ORIENTATION

A. Courts should be laid out on a north-south axis line.

5. COURT PLACEMENT

A. When two or more courts are placed side-by-side, the minimum distance between adjacent sidelines of the courts shall be 12 feet.

B. A fence, 42 inches high, shall be placed midway between each of the two adjacent courts, beginning at a 46-inch gate opening at each end.

C. The minimum distance between the end of each court and the fence shall be 21 feet.

6. COURT SURFACE

A. Hot Mix Asphalt Tennis Courts

1) Materials

a. A base course of bituminous concrete mixture; crushed aggregate; processed/recycled asphalt or processed/recycled concrete should be installed over the subgrade.

b. The specified material should meet applicable ASTM specifications.

c. Compacted thickness will depend on local soil and climatic conditions, but in no case should the thickness be less than the equivalent of 4" of thoroughly compacted crushed stone.

2) Spreading and Compacting

a. The material should be spread by methods and in a manner that produces a uniform density and thickness.

b. The materials thus spread should be compacted to 95% minimum Proctor Test with equipment that provides uniform density.

3) Tolerances

a. Surface of the base course as compacted should not vary more than 1/2" from the true plane of the court.

B. Intermediate Pavement Course

1) A leveling course of a hot plant mix having a maximum aggregate size of 3/8” to 3/4” in accordance with specifications of the state's Department of Transportation and/or the Asphalt Institute should be constructed over the base course to a compacted thickness of not less than 1 1/2".

2) This hot plant mix should be spread and compacted by methods and in a manner that produces a uniform density and thickness.

3) The finished intermediate course should not vary more than 1/4" in 10', when measured in any direction.

C. Asphaltic Surface Course

1) General Description

a. A surface course of a hot plant mix having a maximum aggregate size of 3/8" and a minimum aggregate size of 1/4" should be constructed over the hot mix intermediate course to a compacted thickness of not less than 1".

D. Epoxy-bonded colored surface.

1) To current USTA standard court colors. To be approved by the City.

7. MARKINGS

   A. The courts shall have markings for singles, doubles, and 10-and-under play.

   B. Baseline shall be painted 4 inches wide.

   C. All other lines shall be painted 2 inches wide.

8. FENCING

   A. 12-foot-high 6-gauge chain link fence shall enclose the entire court.

   B. Fence material shall be galvanized.

   C. The courts shall be shielded with an open mesh windscreen of black seamless polypropylene 9 feet high with center tabs.

9. BENCHES

   A. Two benches for players shall be located adjacent to each court.

   B. A bench for patrons waiting to use the courts shall be placed adjacent to the perimeter gate.

   C. Type of bench to be approved by the City.

10. TRASH CANS

   A. One trash can be located outside the perimeter gate & adjacent to each court.

11. LIGHTING

   A. Lighting to be determined by location of courts and planned recreational activities.

B. The minimum maintained lighting levels shall be 50 foot-candles at the net line and 30 foot-candles at the end lines.

To extend play beyond 30 minutes after sunset, lighting may be required unless residences are within 50 feet of the courts. When lit, lights must be on an “on-demand” timer.

12. HOSE BIB

A. One hose bib shall be provided at a minimum, for every two courts.
B. Hose bibs shall be located so that water flows away from the hose bibs when hosing down the courts (on the high side of the slope).
C. Hose bibs shall be of a larger enough size with pressure to allow washing courts.
D. Preference to use recycled water if available.

Section 6 – Pickleball Courts

1. DIMENSIONS FOR STANDALONE PICKLEBALL COURT

A. Playing Area: 44 feet in length by 20 feet in width.
B. A 7-foot non-volley zone extends from each side of the net. The non-volley zone shall extend from each side of the net. The non-volley zone line defines the area referred to as the kitchen.
C. The out-of-bounds area is not specified in official pickleball regulations, but enough space is needed for both safety and vigorous play.
D. The net height of a pickleball court is 36 inches high at the sidelines and 34 inches high in the middle. The net should extend at least 1 foot past the edge of the sideline, making the net be at least 22 feet in length.
E. Permanent posts are sunk into the ground to support the net. These steel posts are set 22 feet and 4 inch apart. They are generally steel poles with an outside diameter of 2-3/8 inches. Posts should be approximately 50 inches long and are usually painted black or green.

F. Court gradient is as with tennis courts gradient: acceptable gradient range is 0.5 to 1.0 percent with a cross slope.

G. Up to four (4) pickleball courts can fit inside a standard tennis court.

2. ACCESSIBILITY

A. Pickleball court gates or fence openings shall be ADA accessible.3. GATES

A. Courts in public parks shall have a double gate at the end of each court for maintenance access.

4. ORIENTATION

A. Courts should be laid out on a north-south axis line.5. COURT PLACEMENT

A. When two or more courts are placed side-by-side, the minimum distance between adjacent sidelines of the courts shall be 12 feet.

B. A fence, 42 inches high, shall be placed midway between each of the two adjacent courts, beginning at a 46-inch gate opening at each end.

C. The minimum distance between the end of each court and the fence shall be 21 feet.

6. COURT SURFACE

A. Hot Mix Asphalt Tennis Courts

1) Materials

a. A base course of bituminous concrete mixture; crushed aggregate; processed/recycled asphalt or processed/recycled concrete should be installed over the subgrade.

b. The specified material should meet applicable ASTM specifications.

c. Compacted thickness will depend on local soil and climatic conditions, but in no case should the thickness be less than the equivalent of 4" of thoroughly compacted crushed stone.

2) Spreading and Compacting

c. The material should be spread by methods and in a manner that produces a uniform density and thickness.

d. The materials thus spread should be compacted to 95% minimum Proctor Test with equipment that provides uniform density.

3) Tolerances

a. Surface of the base course as compacted should not vary more than 1/2" from the true plane of the court.

B. Intermediate Pavement Course

1) A leveling course of a hot plant mix having a maximum aggregate size of 3/8” to 3/4” in accordance with specifications of the state's Department of Transportation and/or the Asphalt Institute should be constructed over the base course to a compacted thickness of not less than 1 1/2".

2) This hot plant mix should be spread and compacted by methods and in a manner that produces a uniform density and thickness.

3) The finished intermediate course should not vary more than 1/4" in 10', when measured in any direction.

C. Asphaltic Surface Course

1) General Description

a. A surface course of a hot plant mix having a maximum aggregate size of 3/8" and a minimum aggregate size of 1/4" should be constructed over the hot mix intermediate course to a compacted thickness of not less than 1".

D. Epoxy-bonded colored surface.

1) To current USTA standard court colors. To be approved by the City.

14. 7. MARKINGS

A. The courts shall have markings for singles, doubles, and 10-and-under play.

B. Baseline shall be painted 4 inches wide.

C. All other lines shall be painted 2 inches wide.

8. FENCING

A. 12-foot-high 6-gauge chain link fence shall enclose the entire court.

B. Fence material shall be galvanized.

C. The courts shall be shielded with an open mesh windscreen of black seamless polypropylene 9 feet high with center tabs.

9. BENCHES

A. Two benches for players shall be located adjacent to each court.

B. A bench for patrons waiting to use the courts shall be placed adjacent to the perimeter gate.

C. Type of bench to be approved by the City.

10. TRASH CANS

B. One trash can be located outside the perimeter gate & adjacent to each court.

15. LIGHTING

C. Lighting to be determined by location of courts and planned recreational activities.

D. The minimum maintained lighting levels shall be 50 foot-candles at the net line and 30 foot-candles at the end lines.

To extend play beyond 30 minutes after sunset, lighting may be required unless residences are within 50 feet of the courts. When lit, lights must be on an “on-demand” timer.

16. HOSE BIB

E. One hose bib shall be provided at a minimum, for every two courts.

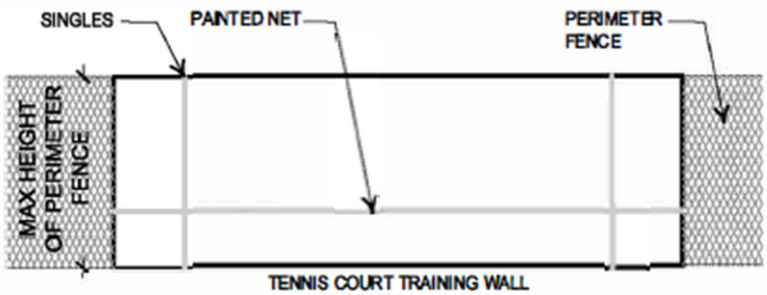
F. Hose bibs shall be located so that water flows away from the hose bibs when hosing down the courts (on the high side of the slope).

G. Hose bibs shall be of a larger enough size with pressure to allow washing courts.

H. Preference to use recycled water if available.

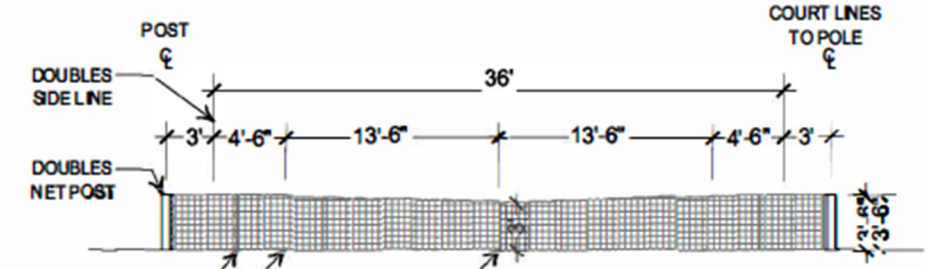
NOTES:

1. ALLOW FOR 21 FEET BETWEEN COURT AND BACKSTOP (FENCE). ALLOW FOR 12 FEET BETWEEN ADJACENT COURTS.
2. ALL COURT LINES TO BE 2 INCHES WIDE AND WHITE OR BLUE.
3. COURT SURFACING PER SPECIFICATIONS.
4. NETTING PER SPECIFICATIONS.
5. SLAB DESIGN MIN. 6" THICK CONCRETE WITH #4 REBAR @ 18" O.C. REQUIRES ENGINEERS SIGNATURE.



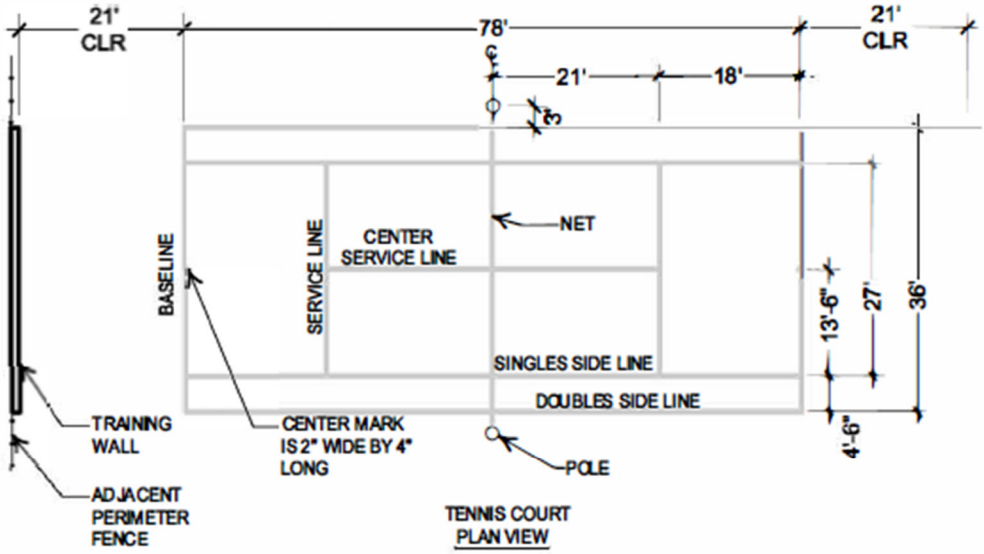
TENNIS COURT TRAINING WALL SECTION

SCALE: 1" =10'



TENNIS COURT NET SECTION

SCALE: 1" =10'



TENNIS COURT PLAN VIEW

SCALE: 1" =20'

TENNIS COURT WITH ONE BALL WALL TYPICAL LAYOUT

SANTA CLARA SPORT COURTS STANDARD PLANS	TENNIS COURT (Single) CHAPTER 6, SEC 2	
	HARDCOURT DETAILS	DETAIL NO. TC-1

CHAPTER 6 PLAYGROUNDS

Section 1 – Standards & Plans

1. DEFINITION

   A. Safety is a high priority for the design of children's playgrounds in the City of Santa Clara. The utmost attention should be devoted to providing safe equipment for children.

   B. Playground design must include the six (6) + 1 elements of play in the overall design and layout of the playground. The six (6) + 1 elements of play include: climbing, balancing, spinning, brachiating, swinging, sliding and running/free play/imagination.

   C. The minimum size of a playground should be at least 3000 square feet to accommodate the seven levels of play. Playgrounds shall be age-separated when space allows, with playgrounds for ages 2 to 5 years separated from playgrounds for ages 6 to 12 years.

   D. Park Playground Matrix: Site matrix must be provided that illustrates the Beginner, Intermediate, and Advanced levels of play for each age group and the inclusive play elements and the minimum level of service capacity for each element and accessibility, accessible apparatus. See the play matrix below:

	Ages 2-5			Ages 6-12			
Elements of Play	**Levels of Play**	**Description**	**Capacity (Ages 2-5)***	**Levels of Play**	**Description**	**Capacity (Ages 6-12)***	**Total Playground Capacity**
Balancing	B,I	Log Steppers Bog Stilts Log Pile	1 2 12	B,I,A	Post & Rope tower access Log Steppers Bog Stilts Notched Play Posts Boulders Net access to tower Log Roll Wobble Boards Log Jam	4 1 2 2 1 4 1 2 18	46
Sliding	B	Hill Slide	6	B,I,A	Tower Tube Slide	2	8
Brachiating	B,I,A	Play posts with hand holds	3	I,A	Log Jam Traverse Rings Post & Rope tower access Log Roll Internal Tower Nets Tower Interior Play	18 4 4 1 5 per net (interior) 25 (5 per level (interior))	60
Spinning	0	Spinner	0	I,A	Spinneround Spinner	18	18
Climbing	B,I	Log Pile Horizontal Notched Logs Play posts with hand holds	12 4 3	B,I,A	Post & Rope - Grid Tower Interior Play Climbing Holds on tower Net access to tower Transfer bench & hand holds to tower Log Jam	3 25 (5 per level (interior)) 4 (2 per climbing wall) 4 2 18	75
Swinging	B,I	Double Basket Swing	8	B,I,A	Double Basket Swing Traverse Rings Post & Rope tower access Loveseat Swing	8 4 4 3	19
Running/Free Play	N/A	Adjacent Play Lawn +/- 6,500	N/A	N/A	Adjacent Play Lawn +/- 6,500	N/A	
Total:	X	X	X	X	X	X	269
Inclusive Play Elements		Hill Slide Sand Play Log Pile Basket Swing	2 8 12 4		Magnetic Abacus Net access to tower Transfer bench & hand holds, Basket Swing Loveseat Swing	4 4 2 4 3	43

Levels of Play: B: Beginner I: Intermediate A: Advanced

*Equipment capacity pending review from manufacturer.

2. PLAYGROUND STANDARDS

A. When two or more playgrounds are provided on one site, there should be a distinct separation between preschool age playgrounds (2-5 years) and school age playgrounds (5-12 years) using walkways, seating areas or landscaped buffers to separate the two distinct areas.

B. Metal slides or merry-go rounds are subject to prior City review and approval.

C. A variety of play experiences and graduated play challenges should be provided. A matrix showing body movement opportunities is included in Table 2.0. It is a goal that as many movement opportunities be provided within the available space as possible.

D. The edge of the playground safety surfacing should be located a minimum of 50 feet in all directions from any hazards such as streets, parking lots bike paths, barbecue grills,

and tripping hazards. A minimum 3-foot-high fence, wall, solid hedge or other barrier deemed acceptable by the Director or designee and in accordance with City of Santa Clara Municipal Code, may serve as protection if the distance required cannot be met.

E. The playground shall be reviewed for visibility, safe access, and egress.

F. A minimum of one shaded seating area shall be provided nearby to foster adult supervision of children. Preference should be given to natural shade by trees.

G. All playground equipment shall be certified by the International Playground Equipment Manufacturers Association (IPEMA).

H. Inclusion by design is preferrable.

I. Incorporation of natural planting areas within the playground is preferred.

J. Research-based, best practices that enhance the play value is desired.

3. FEDERAL AND STATE STANDARDS & GUIDELINES

A. Conform to California Health and Safety Code Sections 115725 through 115735. All new playgrounds open to the public are required to:

1) Conform to the current playground standards set by the American Society on Testing and Materials (ASTM).

2) Conform to the current playground guidelines published by the United States Consumer Product Safety Commission (CPSC).

3) Comply with the current California Building Code with errata (Title 24, California Code of Regulations) and the U.S. Access Board's Accessibility Guidelines for Play Areas.

4) Meet Americans with Disabilities Act (ADA) standards.

5) Comply with all Federal, State, and local guidelines.

4. PLAYGROUND PLANS

A. Playground plans shall be submitted to the City for review and approval. An approved Playground Plan (Plans, Specifications, and Cost Estimates) is required prior to the issuance of building permits and the start of construction of the playground.

B. The Playground Plan submittal shall include:

1) To scale diagram of playground layout, no smaller than 1" ~ 20'
2) Dimensioned safety use zones around each piece of equipment, per manufacturer's specifications
3) Deck, platform, and step heights for each component.
4) Play type for each component.
5) Manufacturers and model numbers of each piece of equipment and each type of surfacing (specifications for play equipment may be requested).
6) Age group that the play equipment is designed to serve.
7) Detailed contact information for the manufacturer.
8) Location of ADA accessible path(s) of travel and access point(s) to the equipment (transfer platform).
9) A chart comparing the required number of accessible play components and the number of proposed accessible play components shall be provided.
10) Details on installation of safety surfacing, including section view with minimum depth of safety surfacing and type of surfacing.
11) Method of drainage of safety surfacing.

Section 2 – Playground Certification

1. CERTIFIED PLAYGROUND SAFETY INSPECTION

   A. Prior to issuance of Certificate of Use and Occupancy for the playground, the Contactor shall submit to the City, a letter stating that the play equipment has been inspected by a person authorized by the manufacturer, that the equipment has been installed according to the manufacturer's specifications, and that it complies with the minimum playground safety regulations adopted by the State of California Health and Safety Code Sections 115725 through 115735).

   B. The City reserves the right to have a Certified Playground Safety Inspector (City or independent contractor) review the playground site for safety, compliance, and proper fit within the designated playground area.

Section 3 – Maintenance Related Design Standards

1. In addition to the design standards, all playgrounds in public parks shall be subject to maintenance-related design standards to reduce maintenance costs, while improving sustainability, longevity, and value of the playground.

   A. Play equipment shall not be composed exclusively of wood materials. Materials resembling the look of wood are allowed.

   B. All public play equipment shall be of high-quality materials designed to be vandal resistant and shall have a demonstrated record of durability and availability of parts. All equipment shall have a minimum warranty of 5 years.

   C. Impact attenuation playground surfacing shall be incorporated into the playground design based on the following order of preference.

1) Synthetic turf and poured in place rubberized safety surfacing.
2) Engineered wood fiber safety surfacing.
3) Washed silica type sand

D. The synthetic turf and poured in place surfaces should be designed to:
   2) Adjust the depth of the subsurface and softness to meet MSRP and design requirements.
   3) Minimize wear and tear of the surface.
   4) Avoid narrow areas of sand (under 6 feet wide) and sand areas with angles under 90 degrees, to allow the sand to be roto-tilled on a regular basis without damaging the adjacent poured-in-place material.
   5) Sand should only be used in designated sand play areas away from poured in place surface.
   6) Use a combination of standardized colors (such as 25% black, 25% green, and 50% tan), rather than a single solid color, so that color mixtures can be adjusted to match faded colors in the future for patching and repairs.
   7) If the surface has shapes or patterns, use simple geometric shapes that are easy to patch.
   8) Avoid any patterns or shapes under high-traffic areas like swings and the base of slides because these areas are patched frequently.

E. All drinking fountains must be located no closer than 50 feet from the edge of any sand play areas to reduce the risk of sand being introduced into the plumbing.

F. All playgrounds should include nighttime security lighting to reduce vandalism.

G. A sand area may be provided within the 2-5 playground areas, if there is a strong recommendation based on public input.

H. Playground sand shall be washed silica type white sand (or equivalent), uniform in grain size and designed for use in children's play areas. Contractor shall provide a minimum

of three samples from varied sources that best meet these guidelines for review and approval prior to purchase and placement of any sand in the playground areas as indicated in construction plans. Sand shall meet the following ASTM C136-84a test for fine white sand as shown in Table 1.0 below:

Table 1.0: Test for White Playground Sand Particle Size (ASTM C136-84a)

Screen Size	**Percent Passing Through**
#16	100%
#30	98%
#50	62%
#100	17%
#200	0-1%

Table 2.0 Chart of Activities & Corresponding Elements of Play

Activities	**Vestibular**	**Climbing**	**Balance**	**Upper Body**	**Push/Pull**	**Crawling/ Bilateral**	**Fantasy/ Social**
Balance Beams			*				
Balance Ropes			*		*		
Binoculars/Telescope							*
Bridge (Moving)	*		*				*
Chinning Bars	*			*	*		
Fire Poles	*	*		*			
Game Panels							*
Horizontal Bars						*	
Jumping Boards	*		*		*		
Ladders		*	*		*	*	
Nets		*	*	*		*	
Parallel Bars				*	*		
Platforms		*					*
Playhouses, etc.							*
Rings	*				*	*	
See Saws	*						
Sensory Gardens							*
Slides	*						
Sound Tubes							*
Spring Riders	*		*	*			

Stairs		*					
Steering Wheels							*
Swings	*				*		
Theme Design							*
Track Ride	*	*			*		
Tunnels						*	*
Turning Bars	*	*			*		
Notes: Elements of play described elsewhere must quantify Balance, Climbing, Swinging, Spinning, Sliding, and Brachiating apparatuses, including beginning, intermediate, and advanced levels of play for each element.							

CHAPTER 7 STANDARDS FOR ACCEPTANCE OF LAND FOR PUBLIC PARK PURPOSES

A. The following standards apply when the City of Santa Clara is considering acquiring land for park purposes, whether through dedication by a developer or land purchase.

B. To maintain the health, welfare and safety of the general public, the City will not accept property for park purposes unless it is “Uncontaminated” and “Clear of Encumbrances.”In addition, when property is being conveyed to the City for park purposes, certain other requirements must be met as well.

C. **“Uncontaminated”** is defined as demonstrating to the satisfaction of the City, as determined by the Director of Parks & Recreation Department, that no user or occupant of the park will be exposed to any concentration of chemicals in soil, water, or air where such exposure would be expected to result in a lifetime incremental cancer risk greater than one-chance-in-one-million or a threat of non-cancer health effects greater than a Hazard Index of 1 (“Significant Risk”). This is the standard used by the various State and federal agencies to determine screening thresholds for contaminated substances.

D. **“Clear of Encumbrances”** means property that is free and clear of both legal and physicalencumbrances.

Section 1 – Uncontaminated Property Requirements

1. For the City to accept property, the following is required:

   A. Both Phase I and Phase II environmental reports conclude there are no hazardous materials or constituents of concern on the property; OR

B. If there are hazardous materials or constituents of concern on the property, the amount or concentrations shall be below current environmental Screening Levels (SLs) published by the State of California or federal agencies. For soil contamination the concentrations must be below Residential SLs. For vapor contamination, the concentrations must be below Industrial/Commercial SLs. For groundwater contamination the concentrations must meet the drinking water standard, or the use of groundwater must be prohibited. If multiple constituents of concern are present, even at concentrations below SLs, the cumulative risk must not be significant.

C. If concentrations or amounts at the site exceed the relevant SLs, then they must be remediated to a non-significant level. If remediation is not feasible, as determined by the Director of Parks & Recreation Department, a site-specific human health risk evaluation for the proposed uses within the park shall becompleted by the City's consultant to assess whether exposure to the property would result in a Significant Risk, and whether feasible mitigation measures would reduce the risk. If, as determined by the Director of Parks & Recreation Department based upon his or her review of the consultant studies, exposure to the property would not pose a Significant Risk to users, or any risk can be reduced to insignificant through specified mitigation measures, then the City may accept the property.

D. For property that contains contaminants and that is the subject of an open file or case with any regulatory agency, the file must be closed by the agency with "no restriction" on the site in order for the City to consider accepting the property. As a rule, case closure with mandatory covenants or deed restrictions, or with the need for ongoing monitoring, or remediation, is not acceptable to the City, even if the property could meet sub-sections B or C above. Any exception to this standard must be directed and approved by City Council.

2. The person or entity proposing to dedicate the property is responsible for paying for and submitting the following items:

G. Submit Phase I environmental report showing that there are no hazardous materials or constituents on the property. Prepare a Phase II environmental report (Analysis) as directed by the Director of Parks & Recreation Department. The Analysis proposal will be reviewed and approved by the Director of Parks & Recreation Department prior to on-site testing occurring. The minimum requirements of the Analysis shall include, but are not necessarily limited to the following items:

- Analysis of the park-land dedication site as a separate parcel, not part of the larger development. Testing should be done on an established grid system with statistically appropriate grid sizes for the proposed park site area. Sampling should also focus on any recognized environmental conditions or environmental issues related to historical property uses.
- Identification of any types of contaminants and constituents of concern within the proposed park site, including qualitative and quantitative measurements. Discrete samples must be used. Blending or averaging is not acceptable. Hot spots (above SLs) must be removed.
- Proposed remediation and/or clean-up measures so that all contaminants or constituents of concern can be demonstrated to bebelow any applicable federal and State of California regulatory or advisory agency's respective environmental SLs.
- Estimated costs for those remediations and/or clean-up measures identified in bullet item above.
- Submittal of the Analysis to the City for City's (or a third partyselected by the City) peer review, paid for by developer.

- Completion of all necessary removal/remedial actions as recommended by the Analysis and to the satisfaction of Director ofParks & Recreation Department.
- Testing of the site, by the developer's environmental consultant, to confirm that the removal or remedial work resulted in the areahaving no contaminants above the SLs or site-specific Significant Risk levels, after any removal or remedial actions.

H. If the requirements for part A cannot be met and remediation is not feasible, Developer provides funding for the City's consultant to complete a human health risk evaluation. For the property to be acceptable the study would need to conclude that the concentrations of all constituents of concern will not individually or cumulatively result in Significant Risk to park-land occupants, users, or workers.

Section 2 – Clear of Encumbrances Requirements

1. Property shall be free and clear of encumbrances of all kinds, including both physical facilities and legal or fiscal constraints, such as liens, deed restrictions, etc. Physically, the land should have no buildings, structure, or utilities, above, at, or below ground. The exception would be well-documented utilities in appropriate easements, or other utilities or structures that meet the City's goals. If any structures, utilities, or other facilities will stay in place then those physical encumbrances must also be clear of hazardous materialsor constituents of concern, including the bedding and backfill material.

2. The person or entity proposing to dedicate the property is responsible for the followingitems:

    a. Remove all existing buildings, structure, or utilities, above, at, or belowground

except for those expressly authorized by the City to remain.

b. Provide a title report.

c. Prepare and record a grant deed (or other instrument) with notarization for the purpose of transferring the property to the City.

d. Pay for all outstanding taxes and clear all outstanding liens as documented in the title report.

e. Coordinate and pay for the title insurance and escrow fees.

Section 3 – Other Requirements

1. Any changes to property, use of the property, storage of material or equipment on the property or other activities that could impact the property, occurring after completion of all environmental reports and analysis, are grounds to require additional investigation.
2. The site should be fenced to prevent access or illegal dumping.
3. The site should have signs prohibiting dumping or trespassing with a phone number for information that goes to the City.
4. Where the developer is required to or agrees to improve the park land, all park land work must be done to City standard, subject to City inspection, and must be maintained by and at the cost to the developer for six months following initial acceptance by the City. The developer is precluded from the determination of when and how the land will be developed as a park.

CHAPTER 8 PUBLIC PARK DESIGN, REVIEW & APPROVAL PROCESS

Section 1 – Review & Approval Process

1. Review conceptual park plans for compliance and determine the conditions necessary to comply with the requirements of private recreational amenities and public parkland dedication, as set forth in Chapter 17.35.
2. Said conditions shall be proposed to the Approving Authority as conditions of approval for the project.
3. Staff and developer meet in an iterative process, inclusive of community input, to determine appropriate elements, programming, and site design for neighborhood and community at-large.
4. Draft Parkland Agreement for dedicated Parkland and/or private recreational amenities for City Council review and approval then recordation with the County.
5. Draft Maintenance Agreement for dedicated Parkland and/or private recreational amenities for City Council review and approval then recordation with the County.

Section 2 – Public Design Review & Approval Process

1. Submit Proposed Park Program Plan (bubble diagram, elements & amenities list) to Department and include the following:

    A. Site Plan with Dimensions

        1) Cross-Sections/Elevations

    B. Easements, Setbacks, and Encumbrances

    C. ADA/Access Plan (Path of Travel)

    D. Playground Matrix (Elements of Play)

E. Park Building (Restroom)

F. Off- street Parking location (if proposed)

G. Wayfinding Sign Plan

H. Lighting Pla

I. Planting Plan/Landscape Plan

J. Utilities/Service

   1) Irrigation

   2) Water & sewer

   3) Electrical

   4) other

K. Grading, Drainage, C-3 treatment

L. FF&E

   1) Bicycle Parking

   2) Receptacle

   3) Internet, Smart Park Features

M. CEQA issues, DTSC, restrictions

2. GIS and Asset Mapping submittal required with as-built plans.

3. **<u>Community Outreach and Public Survey</u>**

   A. Identify stakeholders

   1) Neighborhood noticing - requires minimum 1,000 ft. radius from project

   2) Identify interested parties (i.e., neighbors outside the required minimum, adjacent businesses, etc.)

   3) Install signage to inform park users about proposed project if project signage was not already installed (Notification of Public Input)

i. Project Owner to provide content

ii. Project Owner to install signage at project site

B. Identify Project Timeline

1) Schedule Project Meetings

i. Parks & Recreation Commission Meeting

ii. Public Meeting

iii. Pop-up at a Community Event

iv. Development Meeting

C. Prepare Parks & Recreation Commission Meeting and Community Outreach Presentation

1) Department to prepare Report to Commission

2) Department to provide Project Owner with sample survey questions and responses, and City PowerPoint template

3) Project Owner to prepare online community survey for Department review and approval.

2) Project Owner submits proposed meeting presentation and public survey questions to the Parks & Recreation Department approximately six weeks prior to the Parks & Recreation Commission meeting date

3) Developer and Parks & Recreation Department meet to review and approve the presentation and survey questions

4) Project Owner submits the final city-approved presentation and survey questions to Parks & Recreation Department no later than four weeks before the Parks & Recreation Commission meeting (Report to Commission attachment)

4) Update Park Projects web page

5) Project Owner presents schematic design at the Parks & Recreation Commission Meeting
6) The Parks & Recreation Commission opens the public input process.
7) Hold In-person Community Meeting(s) as applicable.
   v. May include virtual, on-site, or pop-up special events or Commission meetings (Cultural Commission, Youth Commission, Senior Commission, Planning Commission), other
   vi. Conduct Online Survey
   vii. Subsequent Community Outreach Meeting/s
8) Department to Create Survey Report (once the survey has ended) and Send copy to Project Owner
   i. Department and Project Owner meet to review the proposed schematic design based on community input
   ii. Project Owner to update schematic design and prepare to present the updated design at the Parks & Recreation Commission meeting.
   iii. Draft Report to Commission
   iv. Schedule follow-up Parks & Recreation Commission Meeting
9) City Council Review:
   i. Department drafts Report to Council for review, modification, and approval of the schematic design
   ii. Parkland Agreement and Maintenance Agreement should be approved by City Council and recorded with the County prior to events in Section 3 outlined below.

Section 3 – Design Development & Construction Document Review & Approval Process

A. Project Owner to schedule premeeting with Department to review City Council approved schematic plans and prepare to develop design development plans.
B. Schedule check-in meetings as plans move through design development and construction documents.
C. Project Owner to submit Department approved/minimum 80% completed construction documents through City's building permitting online portal.

Section 4 – Construction and Park Acceptance

A. Construction meetings with department, developer, and contractor to monitor construction and to address unforeseen development and/or construction schedule impacts.
B. Periodic construction site visits.
C. Schedule site walk and draft punch list.
D. Acceptance of park project by the City.
E. Transfer park parcel title to City.
F. Schedule park dedication ceremony for a neighborhood or community park, or a ribbon cutting for a mini park.

CHAPTER 9 MAINTENANCE STANDARD PRACTICES

Section 1 – Safety

1. SAFETY

   A. Maintenance staff members who apply cleaning products and disinfectants must complete an annual Cleaning Chemical Training which covers all of the approved cleaning, sanitizing and disinfectant products.

   B. Only standard approved cleaners and chemicals may be used for janitorial services and tasks. The list of standard cleaners and chemicals at kept at the Parks Service Center.

   C. The label is the law; the label for each selected product must be read thoroughly before use.

   D. Proper personal protective equipment (PPE) shall always be worn while conducting maintenance functions and tasks.

   E. Safety Data Sheets (SDS) for all chemical products approved for use by Director or designee, for Parks & Recreation facilities, shall be available and accessible to staff members. Products applied by contractors must also fulfill this requirement.

   F. Equipment shall be used and operated safely according to the function they were made to fulfill and shall be maintained according to the manufacturer's requirements and recommendations.

   G. Maintenance staff must receive at least one annual equipment training course for the proper operation of equipment in Parks & Recreation facilities.

   H. During a declared emergency or pandemic, additional safety precautions will be required, with information, guidance, and protocols provided by the City's Emergency Operations Center and Chief Emergency Services Officer.

Section 2 – Athletic Fields

1. BALL DIAMONDS
    A. The ball diamonds should not have any dirt or cinder areas in the field. There must not be depressions greater than 2” deep within 3 feet of home plate or pitching rubber.
    B. Do not remove any anchored equipment such as home plate, pitching rubber, windscreens or nets.
    C. Base pegs shall remain in place throughout the year unless they are being replaced.
    D. Mow turf areas according to the current standard for the grass species or grass mix installed on the field.
        1) A bluegrass ryegrass infield is cut at 2.0” during the playing season.
        2) A bluegrass ryegrass outfield is cut at 2.0” to 2.5” during the playing season.
        3) Mow the turf two times per week during the active growing season and once per week during the warm season depending on the response of the turf to climatic conditions.
        4) Clippings may stay if they are evenly distributed and without creating clumps or windrows of grass clippings on the field, otherwise, the clipping should be removed.
2. SEATING AREA
    A. The seating area shall be clean and without spillage or grime that hinders use.
3. EQUIPMENT
    A. Repair and maintain athletic field equipment according to the manufacturer’s recommendations.
    B. Equipment shall be used and operated safely according to the function it was made to fulfill according to the manufacturer requirements and recommendations.
4. FENCING
    A. Fencing shall not have jagged edges exposed.

B. Maintain windscreens on fencing and replace as they become worn or torn.

C. Repair holes in fences and replace fence fabric on an as needed basis depending on the extent of damage.

5. SOCCER FIELDS (NATURAL GRASS)

A. Natural turf (grass) fields are primarily for game use.

B. Turf areas must be mowed according to the current standard for the grass specie or grass mix installed on the field. Typically,

1) Bermudagrass is cut at ⅞" during the growing season. Bermudagrass fields shall not be mowed below ½" mowing height.

2) Mowing shall be done two times per week during the active growing season and once per week or on an as needed basis when the turf is dormant.

3) Clippings may stay if they are evenly distributed and without creating clumps of grass on the field, otherwise, the clipping should be removed.

6. SOCCER FIELDS (SYNTHETIC)

A. Synthetic fields are used for practice and games.

B. If there is chewing gum imbedded on the field, maintenance staff should first chill the gum with ice or aerosol spray to make it brittle. and then gently break it up to remove it.

C. Field must be groomed regularly and according to manufacturer's recommendation.

D. Mechanical sweeping should be done slowly and include a minimum of two and no more than five passes in opposite directions.

E. Ensure all seams, whether in the field or in logos or markings, are tight every place where two pieces of turf are joined or where one color of turf is inlaid into another. Loose seams can be a tripping hazard and will continue to deteriorate until corrected by staff or an approved contractor.

F. Check infill depth for uniformity, especially in areas of wear such as corner kick areas and midfield between the hash marks. Redistribute infill or add topdressing as necessary.

G. Pay attention to high wear areas, whenever possible, the cause of wear should be determined.

H. Check edge systems and turf anchors to make sure there are no cracks, heaving, movement, or failure.

I. Check perimeter drains, catch basins, etc. to make sure they are not clogged, and water can flow unimpeded. START HERE 12-14-2021

J. Limit the use of flat soled tennis shoes, as they can cause significantly more damage to synthetic fields during a band practice than a team practicing on the same field for a similar length of time.

K. Water stations should be placed off the synthetic turf to minimize contamination by saliva or spit.

L. Remove debris immediately, which includes trash, dust and dirt and environmental debris such as leaves, pinecones, needles, pollen, and bird droppings. If left in place, organic material will quickly decay and filter into the infill, where it will impede drainage and serve as a medium for the growth of bacteria, algae and fungi.

M. When using a blower to remove debris, direct air horizontally across the surface without disturbing the infill.

N. Document maintenance procedures annually and note problems and deficiencies. The need for excessive maintenance may be an indicator of more serious problems.

O. Spot clean spills as soon as they occur. The infill tends to hold heat, and most liquids dry quickly. Removing spills when still wet is recommended. Removing spills with hot (not boiling water) water and a mild soap, rather than an alkaline product is recommended. Follow manufacturer's recommendations.

P. Check the field post game to see, clean and remove spills, trash, and debris from the field.

Q. Disinfection of a field may be necessary if blood, vomit, urine, sweat, or spit is deposited on the field. Pick up any solid material that can be removed and dispose immediately. To remove any remaining material and disinfect the field, apply an organic or enzymatic cleaning agent or one of the proprietary products that have been developed specifically for this purpose. The goal is to wash the contaminant and the cleaning solution all the way through the surface.

Section 3 – Building & General Amenities

1. ALL OF THE FOLLOWING FUNCTIONS MUST BE PERFORMED ON A DAILY BASIS.
   A. Apply disinfectant(s) inside toilets and to all touchpoint surfaces.
   B. Check and fill towels, soap, air care, seat covers, and toilet paper dispensers.
   C. Pick up trash, sweep floors and empty trash receptacles.
   D. Clean counters, sinks, and dispensers.
   E. Clean inside toilets, and urinals, and wipe outside toilets and urinals.
   F. Inspect walls and spot clean.
   G. Clean all bright-work and mirrors.
   H. Clean the floor.
   I. Treat for any restroom odors with the recommended products
   J. Inspect all areas and clean accordingly.
   K. Check all exit and egress hardware (including electronic devices) for functionality.
   L. Wipe clean all light switches, doorknobs and handles.
   M. Clean restroom partitions

N. Clean drinking fountains

O. Graffiti must be removed within 24 hours.

2. ALL OF THE FOLLOWING FUNCTIONS MUST BE PERFORMED ON A WEEKLY BASIS

A. Check for and remove cobweb.

B. Dust and clean all vents

Section 4 – Playgrounds

1. THOROUGHLY CHECK PLAYGROUND EQUIPMENT DAILY FOR DAMAGE, SAFETY AND ACCESSIBILITY.

A. Check the playground fill material for hazards such as glass, nails or debris that may cause injury.

B. Remove any debris or items that may cause injury.

C. Identify damaged playground equipment and log a work request for repair.

D. Any playground equipment that has broken parts, jagged edges, etc. that may pose imminent risk of injury shall be cordoned off, isolated, or removed until the repair is completed, and the equipment reinstalled and ready for use.

E. Rake and fill holes that develop from usage of playground equipment daily.

F. Patch poured-in-place surfaces as they develop.

G. Replenish playground fill materials (such as sand and engineered wood fiber) biannually or as needed if excessive displacement of the fill material occurs. Proper fill levels can be identified by checking the level of fill material with the fill level markers on the playground equipment.

H. Playgrounds shall be thoroughly cleaned, disinfected, and sanitized if deemed unsanitary by the Director or designee.

Section 5 – Off Leash Dog Areas

1. SYNTHETIC OFF-LEASH DOG AREAS
   A. Ice chests, food and other beverages are not permitted on synthetic grass areas.
   B. Remove balls, playing toys etc. continually from off-leash dog areas to reduce the risk of disease spreading from one animal to another.
   C. Food (dog food or human food) is strictly prohibited to prevent vermin and other pests from infesting or creating harborages in the area.
      a. If there is chewing gum imbedded on the synthetic turf, maintenance staff should first chill the gum with ice or aerosol spray to make it brittle, and then, gently break it up to remove it.
   D. Synthetic turf must be groomed according to manufacturer's recommendation to maintain a high level of sanitation in the off-leash area.
   E. Ensure all seams are tight every place where two pieces of turf are joined. Loose seams can be a tripping hazard and will continue and will continue to deteriorate until corrected.
   F. Check infill depth if present and redistribute infill or add topdressing as necessary.
   G. Whenever possible, the cause of wear should be determined with particular focus on high wear areas.
   H. Check edge systems and turf anchors to make sure there are no cracks, heaving, movement, or failure.
   I. Check perimeter drains, catch basins, etc. to make sure they are not clogged, and water can flow unimpeded.

J. Remove debris as soon as possible, which includes trash, dog waste, dust and dirt and environmental debris such as leaves, pinecones, needles, pollen, and bird droppings. If left in place, organic material will quickly decay and filter into the synthetic turf, where it will impede drainage and serve as a medium for the growth of bacteria, algae, and fungi.

K. When using a blower to remove debris, direct air horizontally across the surface.

L. Document maintenance procedures and problems noted. The need for excessive maintenance may be an indicator of more serious problems.

M. Spot clean spills as soon as they occur. The infill tends to hold heat, and most liquids dry quickly. Removing spills when still wet is recommended. Removing spills with hot (not boiling water) water and a mild soap, rather than an alkaline product is recommended. Follow manufacturer's recommendations.

N. Disinfection of the synthetic turf will be necessary when dog waste (including urine) accumulates on the turf. Remove any solid material and dispose of it.

O. To remove any remaining material and disinfect the turf, apply an organic or enzymatic cleaning agent or one of the proprietary products that have been developed specifically for synthetic turf off-leash dog area maintenance. The goal is to wash the contaminants and the cleaning solution all the way through the surface.

2. NATURAL GRASS OFF-LEASH DOG AREAS

A. Natural grass areas primarily consist of an array of grass types, most commonly a combination of bluegrass, ryegrass, and fescue.

B. Ice chests, food and other beverages are not permitted on the grass surface.

C. Remove balls, playing toys etc. continually from off-leash dog areas to reduce the risk of disease spreading from one animal to another.

D. Food (dog food or human food) is strictly prohibited to prevent vermin and other pests from infesting or creating harborages in the area.

E. Check perimeter drains, catch basins, etc. to make sure they are not clogged, and water can flow unimpeded.

F. Mow natural grass once per week. The mowing schedule may be adjusted based on season and turf growth. In the winter, it may be necessary to adjust the lawn mowing schedule due to wet conditions, and the need to avoid damaging the turf by creating ruts and large tire marks in areas.

G. Remove, trash and debris before mowing lawns to prevent the mower from chopping bits of small material and dispersing the debris or trash over a large area.

3. WATER FOUNTAINS

A. Inspect and clean water fountains daily.

B. Cordon off the water fountain and submit a work request if there is mechanical damage that cannot be addressed and completed while maintenance staff is onsite.

Ray G. Gamma Dog Park area 40,942.97 sq ft

Section 6 – Hardscape

1. SIDEWALKS AND PARK PATHWAYS

A. Check sidewalks and park pathways daily and remove all debris, garbage, and tripping hazards.

B. Rake and groom decomposed granite pathways weekly.

C. Install additional decomposed granite as needed. At minimum this should be done every three months.

D. Spray paint cracks in sidewalks and pathways that are uneven due to tree root growth or other causes whenever there is a ¾" difference between two edges of the sidewalk or pathway that would potentially cause someone to trip and fall. It may be necessary to

spray paint cracked or lifted sidewalks that have less than a ¾" change in grade, if it is likely that someone may trip and fall.

2. SEAT WALLS

    A. Check for cracks, uneven edges, and graffiti daily.

    B. Remove graffiti immediately.

    C. Inspect seat walls for damage caused by skateboarding.

    D. Inspect skate blockers where present, and check for vandalism. Remove, replace and repair as needed.

3. PARKING LOTS

    A. Inspect parking lots daily and remove debris and garbage.

    B. Repaint no-parking, handicap parking curbs and fire lane curbs as they become faded and discolored.

    C. Restripe parking stalls and handicap stalls when they become faded.

    D. Check annually to determine restriping schedule for parking lots.

    E. Check wheel stops daily to make sure they are secured in place and firmly anchored.

    F. Make sure all corresponding signs to parking and emergency access such as handicapped parking, no-parking, fire lanes, and loading-and-unloading are in present, legible, and readily identifiable.

    G. Inspect parking lots for potholes and schedule filling and repair.

4. SEATING AREAS, TABLE SEATING, BENCHES

    A. Inspect all seating areas daily.

    B. Check for vandalism, graffiti, loosened hardware, damage, and breakage.

C. Schedule repair accordingly and remove graffiti immediately.

D. Cordon off areas or benches taken out of service and place signage to avoid injury to park patrons.

E. Inspect wooden benches for damage, rot, loosened or missing hardware and potential hazards. Repair, repaint, or replace when necessary.

5. BARBEQUE GRILLS

A. Inspect and clean after use in non-reserved areas; and check before and after use in areas which require a permit.

B. Place ashes in a fire-safe container meant to hold hot embers, coal and or ashes.

C. Remove ashes after use of barbeque grill, being sure to remove wet ashes immediately as they are corrosive and accelerate corrosion or deterioration of the barbeque fixture.

D. Replace grills whenever they exceed their useful life.

6. FENCING

A. Inspect the integrity of fencing daily.

B. Inspect fencing for damage, vandalism, loose and missing hardware, presence of privacy slats, boards, gates, and locking mechanisms.

C. Verify that all moving components are free moving, and functional.

D. Verify that self-closing and locking mechanisms are safe to operate.

E. Verify that proper signage is affixed, legible and readily identifiable.

F. Inspect wooden fences for rot, broken boards, protruding hardware.

a. Replace boards and components if missing or in disrepair.

G. Check painted surfaces for flaking, chipping and discoloration and repaint as needed.

7. SIGNS

    A. Inspect signs for damage, vandalism, loose, or missing hardware, fading and discoloration daily. Clean and replace signs as needed.

    B. Inspect signs and verify that signs are visible, legible, unobstructed, and installed at proper height and setbacks.

    C. Check to make sure signs have current approved verbiage with corresponding accurate City Code, etc.

    D. Repaint wooden signs and concrete signs and letters on signs when faded.

    E. Inspect signs and verify that they are stable, firmly affixed to the surface, and free of rot.

    F. Replace signs, hardware, posts etc. when in disrepair, absent, or rotted.

    G. Update signs when new verbiage has been approved by the City.

    H. Inspect marquees and check for missing lights, letters, proper illumination, graffiti, and vandalism.

Section 7 – Lawns

1. Lawn areas primarily consist of an array of grass types, most commonly a combination of bluegrass, ryegrass, and fescue.
2. Mow Lawns and edge sidewalks and curbs once per week. The mowing schedule may be adjusted based on season, turf growth and drought conditions. In the winter, it may be necessary to adjust the lawn mowing schedule due to wet conditions, and the need to avoid damaging the turf by creating ruts and large tire marks in areas, which would have to be renovated afterward.

3. Remove trash and debris to prevent the mower from chopping bits of small material and dispersing the debris or trash over a large area. This would also reduce the risk of a projectile injuring anyone nearby.
4. Clean up any debris or accumulation of leaves after the lawn is mowed.
5. Perform mechanical aeration two times per year.
6. In non-drought conditions over-seed lawn weekly due to recurring pet damage or wear areas.
7. Leaves may be collected and placed in tree wells if it does not become excessive (more than 3" high). This will help to reduce the need for supplemental irrigation and weed control.
8. If lawn areas become worn or damaged and over-seeding is not practical, replacement with sod may be considered.
9. Whenever a pedestrian is nearby or comes within an unsafe range of the lawn mower, the mower operator must stop mowing and wait until the person passes a safe distance away. The operator may also explain to the park patron why it is necessary to stay outside of the area being mowed. Alternatively, the mower operator may close off the area being mowed using appropriate signage and placing it in a prominent location, so it is clear to park patrons that the lawn area is closed until mowing is completed.
10. The soil in open lawn areas in city parks have a very high percentage of clay with a correspondingly high cation exchange capacity (CEC), therefore regular fertilization is not needed under normal conditions. However, if nutrient deficiencies or turf diseases (e.g., Dollar Spot) are evident, and confirmed through soil testing, tissue analysis or professional knowledge/observation, fertilizer treatment(s) may be necessary.
11. If fertilization is necessary, do not exceed six (6) pounds of nitrogen per 1000 sq. ft. annually.

12. Fill holes and divots to prevent injury to park patrons due to trip and fall hazards. If it is not possible to fill a hole or a large divot in the lawn, place a barricade with a sign over the hole to prevent anyone from being injured. Then, submit a work request for the hole to be filled.
13. Park staff may have to use a string trimmer and an edger for detail landscape work in the park. It is imperative that maintenance staff exercise a heightened sense of safety in operating a string trimmer from a safe distance from park patrons who may be passing, sitting or standing nearby.

Section 8 – Ornamental Beds

1. Maintain ornamental beds in a predominantly weed free condition. Weeds should not be allowed to overtake shrubs and or perennials. Weeds may be removed though Integrated Pest Management strategies and the usage of pre-emergent herbicides where applicable.
2. Apply herbicide treatments according to and upon the written recommendation by a Department of Pesticide Regulations certified Pest Control Advisor and in accordance with the current herbicide label.
3. Maintain a three-inch layer of mulch around shrubs and perennials whenever and wherever possible to conserve water e and limit weed proliferation. Typically, apply additional mulch quarterly to maintain a three (3) to four (4) inch layer.
4. Fertilize three (3) times per year if needed.
5. Do not conduct surface fertilization in areas where runoff is likely to occur.
6. Replace shrubs and perennials to maintain an aesthetically pleasing landscape.

Section 9 – Sports Courts

1. SPORTS COURTS
   A. Sports courts should be used for their intended purpose.
   B. Remove any debris or materials that may cause injury to persons using the courts or that may damage sports courts.
   C. Complete sport court resurfacing on a seven-year cycle, which may be shorter on some sports courts that are extensively used.
   D. Windscreens must be replaced as soon as feasibly possible if they become torn or excessively worn.
   E. Tennis court nets and straps must be continually checked to ensure they are at the proper level and in good condition.
   F. Check sport court surfaces for unusual divots or wear spots and submit a work request if they must be repaired to prevent further damage to the courts.

Section 10 – Restrooms

1. ALL OF THE FOLLOWING FUNCTIONS MUST BE PERFORMED ON A DAILY BASIS.
   A. Apply disinfectant(s) inside toilets and to all touchpoint surfaces.
   B. Check and fill towels, soap, air care, seat covers, and toilet paper dispensers.
   C. Empty, clean, polish and disinfect sanitary napkin receptacles.
   D. Fill all dispensers.
   E. Pick up trash, sweep floors and empty trash receptacles.
   F. Clean counters, sinks, and dispensers.
   G. Clean inside toilets, and urinals, and wipe outside toilets and urinals.

H. Inspect walls and spot clean.

I. Clean all bright-work and mirrors.

J. Clean the floor.

K. Treat for any restroom odors with the recommended products

L. Inspect all areas and clean accordingly.

M. Wipe clean all light switches, doorknobs and handles.

N. Clean restroom partitions

O. Sweep & mop floor with disinfectant.

P. Clean drinking fountains.

Q. Vacuum carpeted areas.

2. ALL OF THE FOLLOWING FUNCTIONS MUST BE PERFORMED ON A WEEKLY BASIS

A. Check for and remove cobwebs.

B. Dust and clean all vents.

3. INSPECT AND CLEAN SHOWER AREAS DAILY

A. Clean and disinfect shower walls, and floors.

B. Clean shower-drain covers.

C. Clean shower fixtures.

D. Pick up and dispose trash.

E. Spot clean walls and doors.

F. Clean non-slip mats.

G. Machine scrub shower room floors every other day/night.

1. PRUNING

   A. Follow ANSI A300 for tree care operations.

   B. Pruning must be done with a specific objective which may include:

      1) removal of dead branches or limbs,

      2) clearance

      3) thinning

      4) crown reduction

      5) dieback removal

      6) improving tree structure

      7) correcting structural defects

      8) Removal of undesirable plant parts (suckers, watersprouts)

      9) Removal of diseased or infected parts

   C. Do not prune trees to a lion tail.

   D. Do not flush cut when pruning.

   E. Heading cuts are not allowed except in the process of a planned tree removal in stages. In such cases prior approval and notification is mandatory.

2. ESTABLISHMENT

   A. Apply about three gallons irrigation per inch of trunk diameter to the root ball two or three times a week for the first growing season.

   B. Increase volume and decrease frequency as the tree becomes established.

   C. Weekly irrigation the second year and bimonthly as the tree becomes established.

   D. Do not remove branches from trees during the establishment period unless it is a safety concern. Trees develop trunk caliper quicker with a larger mass of leaves.

E. Check for dead branches monthly during the establishment period and remove any confirmed dead branches. Be careful not to remove branches that are still alive (without leaves) but may have experienced leaf drop during the establishment period.

3. REMOVALS

A. Tree removals are sometimes necessary due to decay, disease, poor structure, lightning damage, mechanical damage, etc.

B. Follow the City's tree removal procedures (see appendix).

C. When a tree is removed, a minimum of two trees shall be planted in a city park as replacements for the one tree removal. Tree replacements shall be no smaller than 24-inch boxes.

D. Consult with a Parks & Recreation, Certified Arborist for proper tree replacement selection. Certification is issued through the International Society of Arboriculture.

4. FERTILIZATION

A. Check trees for nutrient deficiencies, vitality, vigor, etc. for the tree species and then follow up with a soil test to determine the need for fertilizer application(s). Keep in mind that compacted and/or waterlogged soil, drought, temperature extremes, excessive salts in the root zone, etc. can produce tree symptoms that resemble nutrient deficiencies.

B. Foliar analysis in combination with careful observation and soil tests may be used to confirm nutrient deficiencies that may be corrected by incorporating a fertilizer regimen.

C. Trees may be fertilized during the late establishment period (typically the year after planting) if needed.

D. Most soils are not deficient in phosphorus. Only add phosphorus in a fertilizer application if soil tests indicate a deficiency.

E. Typically, no more than three (3) pounds of nitrogen per 1000 sq. ft. is needed when fertilization is needed.

F. Do not exceed six (6) pounds of nitrogen per 1000 sq. ft. annual if fertilization is needed.

5. TREE RISK ASSESSMENT

A. Conduct a basic tree risk assessment annually.

B. Any tree selected for removal based on a tree risk assessment should be scheduled for removal by staff or an approved contractor.

Section 12 – Integrated Pest Control (IPM)

1. INTEGRATED PEST MANAGEMENT (IPM)

A. Abide by the City's IPM policy (see Appendix).

B. Do not apply organophosphate pesticides.

C. Do not use or apply anticoagulant products.

D. Do not use any glyphosate-based herbicides (GBH)

Section 13 – Pools

1. GENERAL APPROACH

A. There are a set of routine items that must be checked during an inspection of a public swimming pool or spa facility. Some items must be checked and verified twice a day, daily, weekly, and others periodically.

2. WATER CHEMISTRY (TWICE PER DAY)

A. Reference Certified Pool & Spa Operators Handbook (ISBN 978-1-940345) for details.

B. Free-chlorine residual must be maintained between 1-10 ppm, bromine min. 2.0 ppm. If stabilizer (cyanuric acid) is used, chlorine residual must be maintained between 2-10 ppm. Spas, wading pools, and spray ground must be maintained between 3-10 ppm, bromine min. 4.0 ppm.

C. pH must be between 7.2 - 7.8.

D. Cyanuric acid (if used) must not exceed 100 ppm.

E. Water temperature must not exceed 104°F.

F. A test kit (DPD type) capable of measuring the disinfectant residual (free-chlorine), the pH, and, if used, cyanuric acid levels is required.

3. WATER CLARITY AND CLEANLINESS (DAILY)

A. The water must be kept clean and clear.

B. Bottom of pool must be visible from the deck (at max. depth).

C. No slime and algae on sides or bottom of pool. No debris, floating scum, sputum, trash, or leaves, etc. in pool.

D. The pool site must be kept clean and well maintained.

4. SAFETY EQUIPMENT (DAILY)

A. The following safety equipment must be provided and checked:

1) Life ring (min. 17-inches exterior diameter) with attached min. 3/16-inch diameter rope long enough to span the maximum width of the pool.

2) Rescue pole (12-foot min.) fixed length with permanently attached body hook. Pools that exceed 75 feet in length or 50 feet in width require a rescue pole and life ring on at least two opposing sides at central location.

3) Pools with lifeguards on duty shall have the following additional safety equipment: Red Cross 10-person industrial First Aid Kit or equal, operating telephone, a backboard and head immobilizer.
4) "POOL USER CAPACITY" of pool and spa (based on: Pool = 1 bather per 20 sq. ft.; Spa = 1 bather per 10 sq. ft.)
5) "NO DIVING" - Required if pool water depth is 6 feet or less.
6) "NO LIFEGUARD ON DUTY" — Required if lifeguard service is not provided. The sign shall state, "Children under the age of 14 shall not use pool without a parent or adult guardian in attendance."
7) Artificial respiration and CPR sign, which includes illustrations and procedures.
8) Emergency telephone number 911.
9) Number of nearest emergency services.
10) Name and address of pool facility.
11) Spa "CAUTION" sign.
12) Spa "EMERGENCTY SHUT OFF SWITCH" sign.
13) "NO USE OF POOL ALLOWED AFTER DARK" - Required if the pool and deck area lack lighting.
14) "KEEP CLOSED" sign posted on the exterior side of gates and doors leading into pool enclosure.
15) Diarrhea sign posted at entrance area.
16) Equipment labeled properly.
17) Handicap chair lift in full operation.

5. OPERATION RECORDS (DAILY)

A. Daily testing and recordings of disinfectant residual (free-chlorine) and pH levels at least once per day. (heavy use pools recommended hourly testing)

B. If heated water, test daily (max. 104°F)

C. If cyanuric acid is used, the concentration must be tested and recorded at least once a month.

    A. Records must be kept for two years.

6. POOL ENCLOSURE

    A. Pool area enclosed with approved fencing and shall be designed and constructed so that it cannot be climbed by small children. No gaps exceeding 4-inches.

    B. Gates must be self-closing and self-latching.

    C. Pool enclosure must have at least one keyless exit.

    D. The gate opening hardware (handle) must be 42-44* inches above the deck or walkway.

7. RECIRCULATION AND WATER TREATMENT SYSTEMS (DAILY)

    A. Pumps, filters, disinfectant and chemical feeders, gauges, recirculation systems, disinfection systems, and all parts of the water treatment system must be fully functional and operating while the pool is available for use.

    B. An accurate and functional flow meter must be installed.

    C. Sufficient water flow is required to ensure the minimum turnover times are met.

    D. Filtered backwash wastewater must drain via an approved air gap to the sewer or in accordance with local regulations.

8. POOL LIGHTS (WEEKLY)

    A. Lighting is required if pool is open after dark.

    B. Light fixtures must be securely fastened and in good repair.

9. SPAS (DAILY)

    A. Water temperature must not exceed 104°F.

B. Spa emergency shut off switch adjacent to the spa. This switch is to be clearly labeled.

10. DECKING (DAILY)

A. Decking must be in good repair, free of tripping hazards, and slope away from the pool.

B. Pools must have at least 4 feet of unobstructed deck around the entire pool.

C. Pool or spa covers may not be in place during hours of operation.

D. Pool covers must be stored in a manner that provides an unobstructed deck around the pool.

11. POOL TOILET AND SHOWER FACILITIES (DAILY)

A. Lavatories and showers must have hot and cold or tempered running water (max. 110°F).

B. For toilet facilities, toilet tissue, handwashing soap, and paper towels or hot air blowers, shall be provided in permanently installed dispensing devices.

C. Showers must have a soap dispenser (except deck showers).

D. Waste receptacle in each toilet facility, clean and sanitary condition (min. one).

E. Facilities must be kept clean and be well maintained.

12. ANTI-ENTRAPMENT DEVICES AND SYSTEMS

A. Main drains and equalizer line (suction outlets) must have approved covers that meet ANSI/APSP-16 performance standard and be installed as per the manufacturer's specifications.

B. All suction drain covers must be approved, properly secured and removable only with tools.

C. Every pool with a single main drain that is not an un-blockable drain, shall be equipped with a secondary device or system (i.e., safety vacuum release system, suction limiting

vent system, gravity drain, auto pump shut-off, or other approved equally effective system.

13. KEYS

A. Pool and spa operators must assure ready access to public pool facilities for Santa Clara County Environmental Health personnel to conduct annual routine inspections.

Section 14 – Irrigation

2. SMART IRRIGATION

3. CONTROLLER

A. The City uses Rain Bird controllers throughout the parks system.

B. Schedule controllers to irrigate during the night when parks are closed with the completion of the irrigation cycle by 6:30 AM.

C. Check irrigation systems monthly to make sure distribution system is working and to identify breaks, damage or leaks.

D. Perform a thorough irrigation check in February and in September and create a work request for irrigation system repairs.

4. ZONES AND VALVES

A. Irrigation zones are designed based on irrigating plant material (lawn, shrubs, and trees) that have similar water requirements. It is imperative to maintain irrigation zones for plant material with similar water requirements when repair and expansion of irrigation zones is necessary.

5. DRIP LINES

   A. Check drip lines monthly to verify that inline drippers are fully functional and not clogged.

   B. Replace sections of inline drippers if they become excessively clogged or have been damaged by rodents or other mechanical means.

6. SPRAY HEADS AND EMITTERS

   A. Check spray heads and emitters monthly.

   B. Clean spray heads monthly if clogged and replace as needed.

7. GENERAL

   A. Always Minimize runoff and overspray.

   B. Hand watering is allowed and encouraged if there is an area that does not have adequate irrigation coverage, and the benefit of hand watering outweighs the benefit of establishing a new irrigation zone, or if hand watering will quickly and practically reduce the loss of plant material.

CHAPTER 10 ENTERPRISE ASSET MANAGEMENT, AS-BUILT DOCUMENTATION & NEW FACILITY CONDITION ASSESSMENT

Section 1 – Introduction

The City uses Enterprise Asset Management (EAM) System, compromised of the Geographic Information System (ArcGIS Suite by ESRI) and the Work Order Management System (Central Square – formerly Lucity) to store Department's asset data and track asset work orders.

Section 2 – As-Built Documentation

It is the responsibility of the Developer to provide the City As-Built documentation (data) in AutoCAD format. The data will be incorporated into the City's Enterprise Asset Management (EAM) System, comprised of the Geographic Information System (ArcGIS Suite by ESRI) and the Work Order Management System (Central Square – formerly Lucity). The delivered product must be easily transferable into the City's respective databases. The City requires File Geodatabases for geolocated data with feature classes that use the provided data dictionary.

Section 3 – Facility Condition Assessment (FCI)

The Developer will input data into a database and calculate a Facility Condition Index (FCI) for newly built park buildings (BCI) and park sites (PCI), and provide data and informational reports for budgeting, forecasting and comparative purposes. The resulting inventory of geo-located asset data will provide the condition of assets as a whole, at both the system-wide level and at the site specific (sub-system) level. This will allow the Department to generate prioritized

preventative maintenance reports and long-range capital replacement plans; and, accurately track and forecast deferred maintenance tasks and costs.

The Developer shall use a standardized best practice assessment methodology to assess the condition of all facilities, including park sites and buildings that are to be transferred to the City. A team of professional engineers and architects will inventory each new asset and enter it into a database for inclusion in the City's Enterprise Asset Management System/GIS. Budget estimates will be developed for asset life expectancy and asset renewal schedule.

The methodology used in this assessment should minimally include: a visual non-destructive inspection of the facilities using industry best-practices checklists; interviews with maintenance personnel; and analysis based on the available documentation and visual inspection. Observed deficiencies will be assigned a category dependent on current condition. The Developer shall inspect park site using both the facility level and asset level inspection methods for all identified facilities. This will provide a "Park Condition Index" (PCI) or "Building Condition Index" (BCI), for each facility that will coincide with one of four condition ratings ("Critical", "Poor", "Fair", or "Good") for each park and building for decision making purposes.

Elements to be assessed/inspected include the following:

- Park Elements: Visual examinations of parking lots, pedestrian pathways, playing field and courts, playgrounds, site assets (such as fencing, walls, picnic tables, benches, signage, drinking fountains, etc.), landscaping, and above-ground stormwater items.
- Architectural Elements: Visual examination of roof material, flashing, penetrations, skylights, and other appurtenances on the roof. Exterior walls, windows and doors are examined for irregularities, structural damage, wear, and energy consuming issues. Interior finishes are observed for deficiencies and wear. The site is observed for pathway damage, and obvious access (ADA) barriers.

- Mechanical/Electrical/Plumbing/Fire Sprinkler System/Fire Alarm System: Visual examination of mechanical, electrical, and plumbing to determine condition and remaining useful life. Electrical Systems including power distribution, emergency power, lighting systems and fire alarm. Mechanical systems including HVAC, plumbing fixtures, visible waste and vent lines, pumps and motors, and sprinkler system adequacy (and note if fire sprinkler and fire alarm systems exist).
- Water Intrusion Observation: Visual evaluation of the building envelope included roofing, exterior skin, and windows.
- ADA Compliance Observation: Notation of any readily observable ADA deficiencies. The ADA assessment will not include exhaustive testing or measuring but focus on visible barriers and issues.
- Life Safety Hazards: Immediate notification to the City of any life safety hazards observed that would necessitate any of the City parks, buildings or portion of the buildings being closed immediately.
- Vertical Transportation: Visual observation of elevators and elevator equipment for ADA compliance, expected remaining useful life and operation.
- Additional items as requested by the City to verify condition and useful life of the system.

The Administrative Draft and Final Report will provide a table with data and graphics that describes in plain terms how the Facility Condition Index Grade (number) is correlated to impacts from component failure, risk to park patrons and staff. The final report will provide executive summary level data for the system as a whole, individual park site and park building reports, forecasts for replacement costs, a 5 to 20-year incremental forecast of the maintenance requirements and costs adjustable for inflation. The final report shall include a comprehensive asset inventory by park site and overall condition of each facility and its components, including but not limited to manufacturer, make, model, size, quantity, age, cost, life expectancy,

replacement cost based on life expectancy, asset number and photos at the park site. The Developer should have thorough knowledge of ASTM Designation: E 2The 0118-01, Standard Guide for Property Condition Assessments: Baseline Property condition Assessment Process documents.

CHAPTER 11 SMART PARK DESIGN ELEMENTS

Section 1 – Approach to Technology Standards Smart Parks

Below are the specifications and guidance for design consultants to provide technology related infrastructures, equipment and installation for the City of Santa Clara Smart Parks Rehabilitation and improvement projects. The specifications and guidance are merely a starting point and not intended to cover all required work. It is the consultant's responsibility to discuss with the applicable manufacturers, suppliers, and installers to ensure that the technology related infrastructures, equipment, and installation specified for each project are practical and meet the goals of the City of Santa Clara.

The Department of Information Technology is responsible for providing cost effective and innovative information technology leadership and support to the Parks & Rection Department in providing subject matter experts (SME), selected by the Chief Information Officer or designee as the point of contact for Smart Parks projects.

For Security Camera system and Card Access devices, installation, wiring and programming, the City of Santa Clara works closely with the following Integrator:

Certified Software House Integrator – Edelman Corporation,

P.O. Box 67430. Scotts Valley, CA 95067

Dennis Edelman, Telephone Number (831) 438-6621,

email: dedelman@edelmancorporation.com

Section 2 – Responsibilities During Construction:

Item	Project Contractor	City IT Department
Security Cameras	All cabling, infrastructures, equipment, and integration.	Provide Edelman Corporation city IP addresses for the cameras.
Card Readers	All cabling, infrastructures, equipment, and integration.	N/A
Door Hardware	All door hardware shall be installed to work with the designed card readers	N/A
Wireless Access Point (WAP)	All cabling and infrastructures.	Equipment and integration
iStar door controller	All cabling, infrastructures, equipment, and integration.	Provide Edelman Corporation city IP addresses for the cameras.
Fiber	All labor, tools, and equipment for onsite. (All offsite, including pulling fiber from street into the building will be done by City of Santa Clara SVP Department)	Sign off on design and completion documents.

Other miscellaneous technology related equipment	N/A	Equipment and integration e.g., Rainbird irrigation controllers
Update park information, assets, as-built drawings in city enterprise asset management system/GIS	N/A	GIS and Lucity updates

Section 3 – Direct IT Equipment Specifications

Network Switch:

Cisco C9200-24P-A 24 port switch with 4 x GLC-LH-SMD=

Wireless Access Point (WAP):

10) Internal

AIR-AP3802I-B-K9 802.11ac W2 AP w/CA; 4x4:3; Mod; Int Ant; mGig B Domain

11) External

CAP1562E-B-K9 each with:

- 1 x pole mounting kit
- 1 x AIR-ANT2568VG-N= 2.4 GHz 6dBi/5 GHz 8dBi Dual Band Omni Ant.,
- 1 x AIR-ANT5114P2M-N= 5 GHz 14 dBi Directional Antenna, 2 port
- 2 x AIR-ACCAMK-2= 1560 External Directional Antenna Mount Kit

Section 4 – Equipment at the IDF or location with the City IT switch

A. Provide 4'x4' – ¾" thick plywood backboard to mount the switch, door controller, and patch panel cabinet.
B. The exact location of this backboard will be determined during the initial design phase in conjunction between the Design Consultant, Public Works, Parks department, and IT department. The offset distances from adjacent walls, height above floor, connection requirements, and any other requirements to comply with ADA guidance will come from the Design Consultant.

Section 5 – Wall Mount Enclosure

A. This equipment is only required for a site that will have one or more of the following: Electronic doors access, security cameras, city Wi-Fi, city VoIP phone or other city IT equipment.
B. The cabinet will be mounted at the top and center of the plywood backboard according to the manufacturers mounting specifications and by the procuring vendor. (Construction company or ITD). The Patch panel will be mounted inside the cabinet at the top by the procuring vendor).
C. The Wall Mount enclosure and Patch Panel will be used by both IT and SVP to provide termination points for network connectivity (Door Controller, Security cameras, Wi-Fi Access Points, VoIP phone, central irrigation controller etc.). The network switch, any VoIP switches, SVP fiber termination and other IT required equipment will be housed in this cabinet.

D. NavePoint 12U Deluxe IT Wall-mount Cabinet Enclosure 19-Inch Server Network Rack with Locking Glass Door 24-Inches Deep Black, Steel, Black, Window Door, 25.15 in. H x 23.63 in. D x 23.5 in. W. or equivalent. Depth must not be less than 23”.

E. NetKey® Modular Patch Panels, 24-Port [Manufacturer# NKFP24Y, Graybar SKU: 25076249] – To be mounted inside the wall mount enclosure at the top position.

Section 6 – UPS for Switch and Security Cameras

A. The UPS is required to provide power in the event of a grid power outage. The city network switch (which in turn provides power to security cameras and WAP’s), electronic door access controller and other IT related equipment that may be mounted in the Wall Mount enclosure. It should be located immediately below the wall mount enclosure at least 6” off the ground to prevent water damage.

B. The below items define what electrical power is required for the various IT related components that may be used for a particular facility upgrade/build out. The exact locations will be determined during the initial design phase in conjunction between the Design Consultant (if any), Public Works, Parks department, and IT department.

C. 1 x APC SMT1500NC UPS (City standard for monitoring and management) – No substitution

Section 7 – Power Requirements

The below items define what electrical power is required for the various IT related components that may be used for a particular facility upgrade/build out. The exact locations will be determined during the initial design phase in conjunction between the Design Consultant (if any), Public Works, Parks department, and IT department.

The security cameras are used to monitor the electronic door access points 24x7. It is connected to the city's Genetec Video Security application located in the city's data centers through the city network switch and connection. These are normally motion activated and the retention period of any recorded video is determined by the Parks department depending on their requirements.

1) Wireless Access Points – Power over Ethernet (PoE), provided by network switch
2) Security Cameras – Power over Ethernet (PoE), provided by network switch
3) Keypads – Provided from iStar/uStar door controller
4) iStar door controller – 110-120Vac 15A circuit NEMA 5-15
5) uStar door controller – 110-120Vac 110Vac 15A circuit NEMA 5-15
6) City Network Switch – one power supply will connect to house power 110-120Vac 15A circuit NEMA 5-15, the second power supply will connect to the APC UPS.
7) APC UPS – 110-120Vac 15A circuit NEMA 5-15

Section 8 – Wireless Access Points (WAP) and Security Cameras

As part of the overall Smart Parks program, the city is introducing a free public Wi-Fi access capability to those parks that are or will be connected to the city network. Members of the public

will be able to access this service once they connect their device to the SSID; CSC-Public, and read and agree to the terms and conditions. Throughput on these connections is dependent upon the actual connection protocol but typically range from 75 to 175 Mbps. One or more internal and/or external Wireless Access points (WAP's) will be installed at the site and is dependent upon the actual coverage needed at the time of design. The exact type (make/model) of WAP is listed in the Direct IT Equipment Specifications of this document.

The following low-voltage cables should be run from the point of wireless access point installation back to the IDF or location of the city IT switch that they will be connected to:

- Internal: Category 6 cable (CAT 6) plenum shielded
- External: Category 6 cable (CAT 6) outdoor direct burial

The security cameras are used to monitor the electronic door access points 24x7. They are connected to the city's Genetec Video Security application located in the city's data centers through the city network switch and connection. The exact camera type will be determined and specified during the initial design phase in conjunction between the Design Consultant (if any), Public Works, Parks department, and IT department.

- Fixed Exterior: AXIS P3375-LVE
- PTZ Camera: AXIS Q6075-E or Bosch HD7000 Autodome

The following low-voltage cables should be run from the point of device installation back to the IDF or location of the city IT switch that they will be connected to:

- Internal: Category 6 cable (CAT 6) plenum shielded
- External: Category 6 cable (CAT 6) outdoor direct burial

The door hardware is dependent on the type of doors etc. If the doors are to be monitored, they will need door contacts and a REX (Request-to-Exit) switch inside the door hardware, all 24VDC and Fail Secure.

For doors and gates that require card readers, provide electrified lock or electrified strike.

12) If electric strike, provide compatible gate box mounted to gate post (for gates).
13) If electric lock, ensure compatibility between lock and strike and provide appropriate power transfer unit from gate post to door.
14) Provide conduit for low voltage wiring from card reader to security panel.
15) Provide cabling (type shall be as required by security vendor).
16) Provide conduit as required for low voltage wiring from electrified lock/strike to security panel.
17) Provide cabling (type shall be as required by security vendor).

Door hardware: Von Duprin 98L (w/anti ratcheting system) w/996L trim and Large Rim cylinder/Schlage LFIC or approved equal.

The specific model door controller or controllers is dependent upon the actual number of doors to be controlled and locations. The current city standards for controllers and card readers are:

18) Software House - iStar Edge or iStar Ultra Access Controllers HID multiclass RPK40 reader

The following low-voltage cables should be run from the point of device installation back to the IDF or location of the city IT switch and the door controller that they will be connected to:

19) Card Reader/lock control: 6 strand 22AWG copper shielded (22/6)

Section 10 – Irrigation Controller

IT will provide network access and other assistance as needed to connect the Rainbird irrigation system controller to the cloud service at locations that have an IT switch installed. Actual irrigation system installation and configuration costs are the responsibility of the contractor.

Section 11 – Acceptance Criteria

In order to facilitate commissioning and transfer of operations the contractor shall complete a thorough site/facility walk through with the Parks and Recreation and IT Department for sign-off on all deliverables.