Hesperia Recreation and Park District
Landscape Standards and Specifications

Adopted 2014

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HESPERIA
Recreation & Park District
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Prepared By: Land Development Consulting, Inc. 2014

2014 Hesperia Recreation & Park District
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Hesperia Recreation and Park District Landscape Standards and Specifications

Hesperia Recreation and Park District is an independent special district of the county of San Bernardino. Hesperia Recreation and Park District was created in 1957 to meet the logistical needs of a growing community including recreational, sports facilities and street lighting.

The Hesperia Recreation and Park District encompasses approximately 100 square miles including the City of Hesperia and unincorporated areas of Oak Hills, Summit Valley and Phelan.

This book is for the purpose of providing information to the owner, developer, engineer and architect regarding the requirements and expectations of the District in order for a project to be accepted into the District. It is highly recommended for engineers and architects to read this entire publication to assure themselves that anything shown on their exhibits, plans and specifications does not conflict with District standards.

1.0 Introduction

1.1 Hesperia Recreation and Park District or their consultant's hereinafter referred to as "District".

1.2 Properties maintained by District, hereinafter referred to as Landscape Maintenance Area (LMA) are composed of three categories including but not limited to:

a. Park and Recreation Facilities

- Neighborhood parks
- Community parks
- Sports parks
- Hiking and bicycle trails

b. Streetscapes

- Medians and parkways
- Entries and entry monuments

c. Multi-Use

- Detention basins
- Open space

1.3 The information contained within this publication only applies to District maintained areas and not the entire project site. District shall not be

responsible for any conflict related to the use or reproduction of standards, specifications or details for any project outside of the District.

1.4 The owner, developer, engineer and architect are solely responsible for complying with all other agency requirements as required by law for all areas within the project.

1.5 Whether shown on the plans or not, the project shall comply with all standards, specifications and details. In the event of any contradiction, the higher and more stringent standard, specification or detail shall prevail.

2.0 Planning Requirements

2.1 Prior to submission of any plan, the owner, developer, engineer and/or architect must schedule an initial project meeting with District representative(s) to discuss the project requirements, proposed parcel dedications and proposed areas to be maintained by the District. Contact the District to schedule a meeting.

2.2 Proposed parks under five (5) acres are subject to approval for acceptance for maintenance.

2.3 Park land must be usable land, not flood conveyance basins.

2.4 All park land must also meet the minimum requirements as indicated in the conditions of approval by the County of San Bernardino and/or City of Hesperia.

2.5 The following items must be provided at the time of the meeting:

a. Assessor's Parcel Number(s) for all property(s) discussed.

b. Site plan or tentative tract map containing total residential units, total acreage, total proposed park acreage, open space, basins or other area proposed to be accepted by the District.

c. Owner, developer, engineer and/or architect contact information.

d. Projected map recordation timeline.

e. Project commencement timeline.

f. Any other additional items as determined by planning based on the specific project area or characteristics.

3.0 Submittal Requirements

3.1 District must approve all plans for landscape maintenance areas, including but not limited to entries, parks, detention basins, walls, irrigation materials, plants, etc., prior to any installation.

3.2 Prior to the submittal of construction drawings, the following two steps must be completed:

a. Submit a Maintenance Exhibit for approval. Refer to *Maintenance Exhibit Section 4.0* for submittal requirements.

b. Submit a Conceptual Plan for approval. Refer to *Conceptual Plan Section 5.0* for submittal requirements.

3.3 Upon approval of the Maintenance Exhibit and Conceptual Plan, construction drawings shall be submitted in compliance with all general requirements indicated within the design manual and plan requirements indicated in *Construction Drawings Section 6.0*.

4.0 Maintenance Exhibit

4.1 Landscape architect or project engineer must prepare and submit two (2) maintenance exhibits in color on an 11” x 17” hard copy and in AutoCAD format per Section 4.9 for District review.

4.2 Maintenance exhibit must clearly indicate all areas to be considered for maintenance by District and clearly outline all other areas to be maintained by other entities. Exhibit shall indicate the names of all proposed maintenance entities.

4.3 No plans shall be reviewed until the maintenance exhibit has been approved unless plans are needed to determine acceptance of maintenance.

4.4 Conceptual plans, preliminary plans, grading plans or storm drain plans may be required to be submitted at the discretion of the District in order to review the maintenance exhibit.

4.5 Exhibits must be legible with each category of maintenance indicated in individual color coded hatch patterns. Below are the categories of items that are required to be shown on maintenance exhibit:

a. Park Site, Paseo or Joint-Use Detention Basin

i. Community building square footage (if applicable)

ii. Restroom building square footage

iii. Parking lot and flatwork square footage

iv. Parking lot/path light quantities

v. Block wall length

vi. Tubular steel PVC and chain link fencing length

vii Shade structure quantity

viii. Irrigated landscape area square footage

ix. Non-irrigated landscape square footage (if applicable)

x. Temporary irrigated landscape square footage (if applicable)

xi. Open space square footage (if applicable) Indicate special maintenance needs (if any)

b. Typical Parkway Landscape

i. Block wall length

ii. Tubular steel fencing length

iii. Irrigated landscape area square footage

iv. Non-irrigated landscape square footage (if applicable)

v. Open space (if applicable) note maintenance requirement

4.6 Square footage and/or linear footage of each category must be indicated on the exhibit.

4.7 All Right-Of-Way (ROW) areas shall be separately delineated on the exhibit.

4.8 Maintenance exhibit must have the project engineer's certification of square footage for each category.

4.9 An AutoCAD digital file of the colored exhibit must also be submitted with the two hardcopies. Plot styles and external references must accompany the digital files. An Adobe® Acrobat .PDF file must also be submitted to confirm all external referenced files have been included and that the AutoCAD .DWG file provided matches the .PDF file. All exhibits shall be drawn per *Section 16.0 AutoCAD Standards*.

4.10 All digital files must be submitted to the District on a CD or flash drive.

4.11 All areas that are requested to be maintained by the District must have a closed polyline with an individual hatch pattern and associated square footage for District's review and confirmation of actual square footage.

4.12 All walls and fencing that are requested to be maintained by the District must have individual polyline AutoCAD line style symbols that represent linear units of each item.

4.13 Any specific maintenance required for basins other than landscape shall be clearly outlined on the maintenance exhibit for District review and approval.

5.0 Conceptual Plan

5.1 Conceptual plans must be submitted prior to the submittal of construction drawings. If landscape architect and/or developer desires to commence designing of construction drawings prior to conceptual approval, any changes in working drawings related to conceptual plan comments shall be revised at the cost of the architect/developer. Additionally, District reserves the right to make changes to the project at any time.

5.2 Construction plans submitted without conceptual plan approval are subject to return without review.

5.3 Conceptual plan approval can be waived at the discretion of District.

5.4 Two (2) hardcopy sets of conceptual plans are required to be submitted.

5.5 All conceptual plans must be submitted to District for plan approval. Drawings must comply with all of District's standards.

5.6 Conceptual plans for streetscapes must be no larger than 24" x 36" in size. Parks or other open areas may not exceed 30" x 42" in size.

5.7 Drawing scale shall not exceed 1"= 60'0" unless approved in writing by District. Provide graphic scale to all scaled sheets.

5.8 Conceptual plans shall contain the following:

a. Overall site map or tract map showing locations of all parks, trails, and/or open spaces

b. Vicinity map

c. Street names

d. North arrow

e. Adjacent land use

f. Proposed park layout including but not limited to:

i. Parking lot and concrete layout

ii. All proposed amenities, i.e. ball fields, soccer fields, gazeboes, basketball and tennis courts, tot lots, picnic areas, lighting, decomposed granite trails, etc.

g. Turf and planter layout

h. Tree locations

i. Plant palette

5.9 Title blocks for drawings shall contain the following:

a. Project name

b. Owner/developer name, address, telephone number, fax number and contact person

c. Landscape architect's name, address, telephone number, fax number and name of person drawn by

d. Landscape architect's seal signed and dated on each sheet

e. Project street address, location and tract number

f. Date of drawings

g. Revision block

h. Sheet number block (indicating sheet___of___)

i. District approval signature block on all sheets-lower right corner (*See Figure "A"*)

5.10 Amenity requirements and park layout

a. All parks must include the minimum amenities as shown in *Section 18.0 Park Site Requirements* based on park type and size.

b. All park layouts shall be designed towards the District's prototype park designs per *Figures "E", "F", "G" and "H*". It is understood that each site is different in shape; however, it is the intent of the District to receive usable park land and not irregular trapezoidal areas to be able to provide the required amenities.

c. Typical 5 acre parks should have a double basketball half court to promote the use of smaller children to play simultaneous games rather than allowing one large group to occupy the court. All basketball courts shall be carefully placed within each park so that they are the furthest away from adjacent residences. Whenever possible, all courts shall face north/south to balance the sun exposure.

d. All playground areas should be placed close to shade structures and picnic areas. Playground locations shall be visible from the street. Experience has shown that pocket (mini) park areas located behind homes invite problems, i.e., hang-outs that can become vandalism problems. All parks shall have swings with at least one infant basket swing. All playground equipment shall be shaded with a shade sail.

e. All restrooms must also have a maintenance room to house electrical timers and misc. park equipment. The size of the restrooms and maintenance room will be determined by project size and amenities. Restroom buildings must be inspected and approved by District prior to building final. All restroom buildings must be compliant with ADA regulations. Restroom buildings should be in close proximity to the playground and picnic areas. Restrooms buildings shall include a snack bar with concession window when there are multiple ball fields within the project. Exterior colors must correspond with adjacent community color scheme. Refer to *Section 24.0 Construction Specifications* for additional restroom requirements.

f. Ball fields shall be designed so that foul balls will not come in contact with parking and picnic areas. Backstops and fencing must be used as a minimum standard and protective netting may be required when project layout does not allow adequate distance between parking and picnic areas.

g. Parking lot size shall be determined by the park size and must have six (6) parking stalls per acre of park space plus the required ADA stalls. All parking lots shall be designed to meet or exceed the County of San Bernardino and/or City of Hesperia minimum requirements. Parking lots shall be screened from the street with hedge planting. All parking lot islands shall have 12” wide maintenance concrete access adjacent to each parking stall. All parking lots shall have lighting and tree shading to meet the County of San Bernardino and/or City of Hesperia (if applicable) minimum requirements.

h. All park sites shall have active amenities. Any proposed passive parks will not count towards park credit and is subject to District denial.

i. All parks shall have fencing along the frontage of all streets and schools. Type of fencing shall be determined by the District at the design stage. Parks shall have masonry walls when adjacent to private residences or commercial property.

j. Park site LED lighting is required for all parks unless otherwise approved by the District. Quantity and type shall be determined per project. Musco Lighting system including Control Link shall be used for ball field lighting.

k. Additional requirements shall be discussed during the design phase depending on specific project requirements related to the layout of the community.

l. All open turf areas larger than 2 acres shall have a 120VAC GFCI outlet installed in a lockable stainless steel vandal proof enclosure for scheduled park events.

6.0 Construction Drawings

6.1 Upon approval of conceptual plans, architect must submit a copy of the approved maintenance exhibit with the 1st construction drawing submittal.

6.2 All areas must indicate landscape improvements per the approved maintenance exhibit and approved conceptual plan. Any changes made to the LMA must be addressed prior to submittal of working drawings.

6.3 It is the responsibility of the developer/architect to confirm that drawings are designed per current landscape standards, details and specifications.

6.4 Architect must complete and initial the Submittal Checklist per *Section 19.0 Landscape Submittal Checklist* provided in this manual to assure that all requirements have been addressed. The Submittal Checklist must be attached with the submittal package. Any check list line item not completed must be explained on a written transmittal.

6.5 All new submittals will not be accepted until all required plans have been submitted. Partial plan submittals are subject to return and/or disposal with written notification. The developer must coordinate with the engineers and architects to provide a complete submittal package just as the County of San Bernardino planning department requires for plot plan submittal.

6.6 All precise grading elevations related to parks, basins, slopes and/or open spaces that are related to the landscape improvements must be indicated on the construction drawings.

6.7 Fence and wall plans must be submitted and approved by District and all materials used must conform to District standards. Plans must also be approved by all other governing agencies as set forth by the County of San Bernardino and/or City of Hesperia.

6.8 All fencing and walls related to the landscape improvements must be indicated on the construction drawings. Fence and wall plans must be submitted with the landscape package. All primary tract entrances shall have monument signage with accent lighting. In the event that monument signs are approved without lighting, conduit shall be installed for future use.

6.9 District's logo and name must appear on all park signage.

6.10 District does not review preliminary working drawings. All incomplete plans will be returned without review.

6.11 Restroom/maintenance building plans must be submitted to District to be reviewed for layout, material, appearance and required amenities only. All structural review shall be performed by the County of San Bernardino and/or City of Hesperia. Restroom and maintenance buildings must meet District's standard design criteria.

a. Restrooms shall be pre-manufactured off-site and delivered to each project to minimize on-site construction and maintain District uniformity.

b. Submit conceptual layout of restroom/maintenance room building prior to commencement of construction plans and prior to submittal to the County of San Bernardino and/or City of Hesperia Planning Department.

6.12 All landscape improvements within detention basins shall comply with *Section 10.0 Basin Design Guidelines*.

6.13 All proposed utilities, drainage structures, easements or other applicable site information must be shown on the landscape plan.

6.14 It is the architect's responsibility to provide all necessary title blocks for other agency approvals. Projects with parkways within a public right-of-way must have the applicable approval blocks and format as required by the County of San Bernardino Transportation Department and/or City of Hesperia format. All required irrigation plans shall have the applicable approval blocks and format as required by the governing water district.

6.15 It is recommended for architects to submit plans concurrently into all other required agencies. Any other agency comments that contradict District requirements, specifications and details shall be provided to District to resolve the difference of requirements internally.

6.16 Plans must also be approved by all other governing agencies as set forth by the County of San Bernardino and/or City of Hesperia prior to construction of any project.

6.17 Compliance with the specific plan for the County of San Bernardino and/or City of Hesperia does not constitute District approval. It is the developer's responsibility to review District's landscape standard requirements and conditions of approval prior to completion of their project budget costs. District is not responsible for additional installation costs related in order to comply with District's design guidelines not identified in the approved specific plan.

6.18 District refers to the specific plan for reference, however, in many instances the specific plan is irrelevant to actual landscape layouts due to design requirement revisions and/or new environmental restrictions or current District needs not previously considered or required.

6.19 We understand that each developer wants to make a marketing statement for each tract with specific themes and planting schemes; however, all areas to be maintained by District must comply with District's standards, specifications and minimum requirements.

7.0 General Plan Format

7.1 Two (2) sets of plans are required for review. Architect must submit a copy of the approved maintenance exhibit with the 1st construction drawing submittal and one (1) copy of construction plans approved by the County of San Bernardino and/or City of Hesperia when necessary.

7.2 All construction drawings must be submitted to District for plan approval. Drawings must comply with all of District's Landscape standards.

7.3 Working drawings for streetscapes must be no larger than 24" x 36" in size. Parks or other areas may not exceed 30" x 42" in size.

7.4 Drawing scale shall not exceed 1"=30'0" unless approved in writing by District. Provide graphic scale to all scaled sheets.

7.5 Graphic scales shall be shown on all scaled drawings.

7.6 Properly labeled match lines shall be used when multiple sheets are required.

7.7 Title blocks for drawings shall include:

a. Project name

b. Owner/developer name, address, telephone number, fax number and contact person

c. Landscape architect's name, address, telephone number, fax number and name of person drawn by

d. Landscape architect's seal signed and dated on each sheet

e. Project street address, location and tract number

f. Hold Harmless Clause (*See Figure "B")*

g. Approval Time Limitation *(See Figure "D")*

h. Date of drawings

i. Revision block (update for every submittal)

j. Sheet number block (indicating sheet___of___)

k. District approval signature block on all sheets-lower right corner (*See Figure "A"*)

7.8 Title sheets shall include:

a. Vicinity maps, index maps

b. Contents with sheet description and sheet numbers

c. District LMA square footage

d. Applicable utility company names and telephone numbers

e. Reduced plan indicating District LMA

f. Note to read, "All work must conform to District's current standard landscape specifications."

g. Hold Harmless Clause (*See Figure "B"*)

h. ADAAG note (*See Figure "C"*)

i. Approval Time Limitation (*See Figure "D"*)

7.9 Figures *"A", "B", "C" & "D"* per *Section 17.0 Figures* must be incorporated on all drawings.

7.10 Specifications *Sections 24.0, 25.0, 26.0 and 27.0* must be incorporated into drawing sheets or issued as a separate attachment in 8-1/2 x 11 format with all drawings.

7.11 District standard details must be incorporated into drawing sheets. No generic installation details will be accepted.

7.12 The District shall not be responsible for the maintenance of any special conditions related to water quality treatments, conservation easements, wildlife corridors or protective habitats.

7.13 All construction drawings shall be drawn in AutoCAD format and shall comply with *Section 16.0* AutoCAD standards. Prior to final plan approval, engineer and architect must submit one AutoCAD file on a CD to the District in addition to hardcopy format. Drawings shall be drawn and submitted to the District for the purpose of integration into District GIS systems and project archives.

8.0 Plan Submittal Procedures

8.1 Address all plans submitted to: City of Hesperia
9700 Seventh Avenue
Hesperia, CA 92345
Attention: Planning Department

8.2 The City of Hesperia will forward plans to the District for review and comment. Allow approx. 4 to 6 weeks for construction plan review. Actual time depends on the amount of current plans in review.

8.3 Any and all incomplete submittals or plans without all required items are subject to return without review.

8.4 Plans where District standard guidelines, details or specifications have not been incorporated are subject to return without review.

8.5 It is of utmost importance for the landscape architect that is submitting plans to review all requirements, check lists and specifications prior to submittal to minimize plan check comments.

8.6 All plans will be reviewed by the landscape planner for: consistency, accuracy, clarity, and conformity to the District standard specifications, details and design guidelines before approval is given. Plans requiring corrections and/or found incomplete must be resubmitted for approval. A letter of explanation listing required corrections or redlined drawings will be sent to the landscape architect that submitted plans.

8.7 It is the responsibility of the signing engineer or landscape architect to quality control the plans prior to agency submittal. District is NOT responsible for confirming that all irrigation systems and planting selections will function properly, but to review plans to verify compliance with District landscape standards. It is imperative for the engineer or landscape architect or supervised individual to take the necessary time to confirm that plans are in compliance with all requirements prior to the first submittal.

8.8 Additional submittal fees will be charged to the developer or architect when repeated incomplete submittals are received.

8.9 District will distribute all submittals to and from the appropriate landscape planner. No direct submittals to any plan review consultant shall be allowed.

8.10 All plans will be processed in the order received, on a first-come, first-served basis.

8.11 Due to the time required for District plan check comments to be returned, it is recommended that each architectural or engineering firm assign one individual designated to perform their own in-house review of all plans to confirm compliance with District's standards prior to submittal to District. This individual would be the key to avoiding multiple plan check re-submittals.

Reduced plan check re-submittals would increase the turnaround times for other first plan check comments and overall plan approval.

8.12 All engineers and architects with third party irrigation consultants must review all irrigation sheets for District conformance. Many repeated plan check comments are related to third party consultants. Engineers and architects are responsible for all sheets submitted.

8.13 Many plan check comments are related to simple drafting errors. We recommend for engineers and architects to review all drawings sheets after the reprographics company has produced the copies to be submitted to confirm quality of work and proper representation of plan.

9.0 Plan Approval

9.1 Once hardcopy plans and AutoCAD files for the construction drawings have been reviewed and are ready for approval, an approval letter will be sent to the landscape architect or engineer stating that the plans have been approved and will also request for the architect or engineer to send the appropriate quantity of plans and mylars in for signature. The engineer or architect must then submit mylars and three (3) copies of landscape drawings for signature. District will retain two (2) sets. One (1) set will be stamped “Approved Construction Plans”. This set must be available during pre-construction conference and must remain at the job site at all times.

9.2 All mylars sent for District signature without written approval are subject to revisions.

9.3 After approved plans have been distributed to all applicable contractors, the owner/developer may proceed with a pre-construction conference.

9.4 Any changes made to the drawings between the time of the approval letter and the submission of plans for signature must be brought to District’s attention in writing prior to plan submission.

9.5 Any changes made to the approved plans must have revision clouds and itemized by sheet number on a written transmittal. Revisions required after plans have been signed and returned must also be re-submitted with revision clouds and written transmittal of all changes.

9.6 No changes can be made to an approved plan and circulated without the written approval from District.

9.7 District plan approval is valid for a period not greater than six months. This has been beneficial in correcting problems with outdated equipment, incorporating new available technology and complying with changing laws and regulatory agency requirements.

9.8 Owner/developer must also submit required plans to the County of San Bernardino Transportation Department and/or City of Hesperia for approval for areas within a county R.O.W. per county requirements. Owner/developer may not begin work until an encroachment permit has been issued.

9.9 Once plan approval has been given, the property owner is responsible for complete compliance of all installation standards, specifications, details and plan requirements including in this manual.

10.0 Basin Landscaping Design Guidelines

10.1 General

a. Hereinafter the City of Hesperia shall be referenced as “City” and Hesperia Recreation and Park District shall be referenced as “District”.

b. Detention basin plans must be reviewed and approved by the City and District prior to commencement of any work.

c. All basins shall comply with the City of Hesperia Retention Basin Design Guidelines.

d. All drainage structures drain lines and flow lines must be shown on landscape plans. 100 year flood level and 3 foot free board levels shall be indicated on plans.

e. Storm drain plans must correspond with landscape plans including all proposed amenities.

f. All joint-use detention basins are subject to review by the City and District for required amenities and project specific design requirements. Pre-design meetings are recommended prior to commencement of design to confirm types of amenities to be provided.

g. All basins must have positive drainage in order for project to be accepted by the District for maintenance.

h. Any specific maintenance required for basins other than landscape shall be clearly outlined on the maintenance exhibit for City and District review and approval.

i. All basins over 18 inches deep are subject to maintenance vehicle access unless otherwise approved in writing.

j. All basins shall be engineered to drain within 48 hours of any rain event.

k. Additional requirements may be required as determined by the City and District for each specific project.

10.2 Grading

a. All elevations of slopes, contours, drains, flow lines, sidewalks, trails, buildings and applicable amenities must be clearly identified on plan.

b. All detention basins must have positive drainage. Bottom of basins must have a minimum of 1.0% flow.

c. Low flow drainage must be installed per District low-flow drainage typical detail if basins are approved to be flatter than 1.0%. District drainage detail is for typical installation; engineer shall make necessary adjustments to each individual project requirements and submit for review.

d. Side slopes shall not exceed 3:1 slope.

e. There shall be a 5 foot bench along the top of all side slopes along sides and back of basins.

10.3 Drainage Structures

a. All structures shall be designed by an engineer to meet the requirements of the City

b. All structures proposed to be maintained by City shall be clearly identified on the drawings.

c. Structures must be designed to prevent water entrapment caused by debris or silt build-up. Trash racks that prevent unauthorized entry shall be provided on all openings larger than 18 inches.

d. All structures must be set at an elevation that will allow the entire basin to have a minimum flow of 1.0%.

10.4 Access Roads

a. All basins deeper than 18 inches shall have a 14 feet wide all weather access road.

b. All weather access roads shall be concrete or asphalt.

c. Asphalt access roads shall not exceed 8%. Concrete access roads shall not exceed 12%. Asphalt access roads shall be 4 inch ¾" mix with sub-grade compaction of 95%. Concrete access roads shall be a minimum thickness of 6 inches with 6X6 welded wire mesh and be 3,250 PSI at 28 days with a sub-grade compaction of 95%.

d. Access roads shall not exceed 2% cross fall but not under 1% cross fall.

e. Access roads shall have a curb that is 6 inches higher than the adjacent slope grade on the side of the ramp that is away from the basin.

f. Access roads shall have a concrete parking apron at the bottom of the ramp and shall be a minimum size of 20'x20'.

10.5 Walls, Fences and Gates

a. Perimeters of all basins must have walls or fences per City requirements.

b. Fencing shall be wrought iron fencing with black powder coating. Any proposed alterations must be submitted for approval.

c. All block walls shall be 6' minimum height, split-face CMU block with integral color. No stucco walls will be allowed. Combo walls with 2 foot high block and 4 foot high wrought iron fencing should be used for the frontage and adjacent to residential front yards.

d. Wrought iron vehicle access gates shall be provided for all basin entrances. Gates must be designed to restrict unauthorized pedestrian or vehicle public access and shall be 16' wide. Gates shall comply with all City standards.

e. All walls, fences and gates shall adhere to "Swimming Pool Fence Standards" in regards to step height.

f. Contractor shall provide and install pad locks as directed by City and District for maintenance access by both agencies.

g. No chain link fencing shall be allowed unless approved in writing by the City and District.

h. All walls, fences and gates shall comply with District requirements in *Section 13.0 and Section 16.0* and City of Hesperia requirements.

10.6 Basin Irrigation

a. Irrigation shall be designed carefully to accommodate grade differences and silt build-up. Separate irrigation zones must be provided for top, center and bottom of slopes.

b. All irrigation spray heads and rotors must be installed to eliminate overspray onto access roads, drainage structures, etc.

c. Bottom of basins shall not be irrigated or landscaped to easily remove future silt build-up.

d. Irrigation shall comply with District irrigation requirements in *Section 25 Irrigation Specifications* and City of Hesperia Article XII Landscape Regulations.

10.7 Basin Planting

a. Plant material shall be specified that can withstand water flow on slopes.

b. Slopes shall have large fast growing 24" box minimum size trees at 30 foot maximum spacing along the right-of-way.

c. Slopes shall have large shrubs positioned in natural free-flowing patterns throughout the project. Shrubs shall be 5 gal. minimum size and shall be installed in 25% of the area.

d. In addition to shrubs, all slopes shall receive 1 gal. groundcover at 4' O.C. All slopes approved with conventional overhead irrigation shall receive rooted cutting groundcover @ 12" O.C.

e. All perimeter 6' high block walls shall have a 1 gal. vine at 10' maximum spacing.

f. All parkways adjacent to basins must comply with the District's street tree requirements.

g. All planting within basins shall comply with *Section 26 Planting Specifications.*

11.0 Construction Standards

11.1 Whether shown on the plans or not, the project shall comply with all standards, specifications and details. In the event of any contradiction, the higher and more stringent standard, specification or detail shall prevail.

11.2 No construction shall commence until a pre-construction conference has been completed and all submittals have been approved. The owner/developer must notify District, the landscape architect and landscape contractor seven (7) days in advance to schedule the pre-construction conference. The following parties must be present at the pre-construction conference:

a. District's representative

b. Landscape architect (if requested)

c. Owner/developer

d. Contractor and all sub-contractors (including project foremans)

11.3 The developer must provide the following at the pre-construction conference:

a. Copy of encroachment permit

b. Project superintendent and contact information

c. List of subcontractors with contact information

d. Project schedule with projected turn-over date

e. Current available water pressure

f. Underground Service Alert (USA) Dig Alert number

11.4 The contractor and all subcontractors shall provide submittals per each specific specification section at the pre-construction conference.

11.5 Contractor is responsible for notifying the District supervisor in advance for all inspections as outlined in each specific section specifications.

11.6 No underground work shall be covered until the work has been inspected and approved. Any work covered without inspection must be uncovered and inspected at the cost of the contractor covering said work.

11.7 Inspections in no case relieve the owner/developer and/or architect of any liability for work performed.

11.8 No final inspection will be performed until as-built drawings are complete and approved.

11.9 Upon completion of all required inspections, after the project is in compliance with all District standard specifications and project has been maintained to an acceptable condition, a letter of acceptance will be sent to the owner/developer.

11.10 Owner/developer shall be responsible for the project until the project deed or easement has been recorded to District. Questions regarding turn-over should be forwarded to the District Administration @ development@hesperiaparks.com.

11.11 Prior to acceptance of the project and prior to any utility transfer, a Utility Exhibit shall be prepared, submitted and approved by the District per *Section 15.0 Utility Exhibit Requirements*.

11.12 Labor Code Sections 1720 et seq. and 1770 et seq., as well as California Code of Regulations, Title 8, Section 16000 et seq. (“Prevailing Wage Laws”), require the payment of prevailing wage rates and the performance of other requirements on certain “public works” and “maintenance” projects. If this Project involves an applicable “public works” or “maintenance” project, as defined by the Prevailing Wage Laws, and if the total compensation is $1,000

or more, Developer agrees to fully comply with such Prevailing Wage Laws. The Developer shall defend, indemnify and hold the District, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

12.0 Irrigation Standards

12.1 It is the intent of District to conserve water in the best possible manner, therefore, District requires the use of California friendly plant material.

12.2 All irrigation shall comply with the *Section 25.0 Irrigation Specifications* and District Irrigation Details.

12.3 It is the intent of District for all irrigation systems to properly irrigate all landscape areas with water conservation being the utmost importance. All irrigation shall be designed with individual zones for each different moisture requirement to provide 80% minimum Distribution Uniformity (DU).

12.4 All irrigation for planters and slopes shall be drip irrigation unless otherwise approved by the District.

12.5 All plant material shall be per the approved plant list.

12.6 Irrigation consultant shall provide an Estimated Annual Water Use (EAWU) and shall not exceed the Maximum Allowed Water Allowance (MAWA) unless approved by District. Sports parks are considered special use projects and will be considered exempt from the MAWA.

12.7 The use of conventional spray heads and/or rotors for planters and slopes must be approved in writing by District and can only be used in parks provided that the planters are minimal size.

12.8 Architects must confirm with the District's controller manufacturer that all required communications and components have been incorporated. Architect must provide a letter of recommendation from the manufacturer indicating that the proper equipment has been specified per the specific project and District requirements.

12.9 A separate water meter for irrigation shall be required.

12.10 A separate electric meter for the irrigation controller shall be required.

12.11 A backflow prevention device and enclosure per specifications shall be installed for all irrigation. It shall be a pressure-reducing device approved by the Hesperia Water District. A backflow device enclosure and insulated cover must be installed (no exception).

12.12 1" quick coupler shall be installed every 100' in each landscaped site. A shut off valve must be installed inline 3' away from the quick coupler.

12.13 All irrigation systems must have a master shut-off (master valve).

12.14 All irrigation valves, quick couplers and shut-off valves shall be installed below ground level in irrigation boxes.

12.15 Each tree and shrub shall have a .25-gallon per hour pressure compensating bubbler on a ½" schedule 80 riser.

12.16 All planter irrigation shall be low volume irrigation unless otherwise approved by the District. All turf irrigation within 24" of any non-permeable surface that could potentially run off-site shall be irrigated with Rainbird XF-SDI Series Dripline with Copper Shield™ Technology or approved equal. Dripline irrigation shall be installed per manufacturer guidelines.

12.17 An irrigation audit shall be provided for all irrigation projects larger than 3,000 square feet to confirm distribution uniformity. Irrigation audit shall include recommended adjustments if needed. Approved auditor shall be a licensed landscape architect, certified water auditor or an irrigation designer with a minimum of 5 years experience.

12.18 All irrigation shall conform with City of Hesperia Article X11 Landscaping Regulations.

12.19 All piping shall be non-potable purple PVC approved for recycled water use. Projects where recycled water is not currently available shall be installed with purple piping for future use. All irrigation shall conform to the governing local water district recycled water guidelines.

12.20 Low volume irrigation shall be used as outlined below:

a. Point-to-point low volume irrigation system must be used for all slopes, planters within the District LMA. All piping shall be below grade unless approved in writing by the District. Conventional irrigation may be approved for detention basins as determined and approved by the District.

b. Irrigation must be designed per District drip details and irrigation specifications.

c. Valves must be designed from 5-40 GPM in order for accurate flow meter readings to occur.

d. All emitters shall be per District specifications and details.

e. All shrubs shall have one (1) emitter and all trees shall have a minimum of three (3) emitters. Refer to tree emitter detail for additional emitters based upon tree size.

f. Planting must be designed to accommodate the irrigation layout.

g. All piping within 8 feet of any walkway or driving surface shall be buried 4" deep and emitters must be aligned at grade with plant root ball. Piping buried 4" deep shall be UVR PVC with epoxy coated j-hooks per District detail.

h. All piping above grade must be UVR PVC or approved UVR flexible PVC.

i. All UVR lateral lines on slopes shall be secured with epoxy coated "J" hooks @ 10' min. spacing.

j. Architect must provide locations of PVC lateral distribution lines, check valves, pressure regulators, filters and flush valves on the irrigation plan and on the legend with all model numbers. Location of actual emitters are not required.

12.21 Conventional spray and rotor heads

a. All spray and rotor heads must comply with District irrigation specifications and are subject to District approval for type of use and placement

b. All turf pop-ups must be 6" minimum height.

c. If conventional spray or rotor heads are approved to irrigate planters, all spray heads and rotors must be 12" in height,

d. All parkways, entries, parks, basins and other open space areas must receive head-to-head irrigation coverage.

e. Irrigation lines must be separated from top and bottom of slopes and all other areas where elevation changes exceed manufacturer's factory installed check valve elevation limitations.

12.22 Vine Irrigation

a. All vines along tract masonry walls must have a low volume point-to-point irrigation emitter to assure that all vines are properly irrigated to promote rapid growth in effort to minimize graffiti.

12.23 Irrigation Controller(s)

a. All irrigation controllers must communicate with District's Calsense central control system.

b. It is the responsibility of the Landscape Architect to provide Calsense with the applicable project information to determine the exact controllers, sensors, antennas, etc.

c. Architect must obtain written approval from Calsense stating that all equipment meets the District requirements with first construction plan submittal.

d. A Calsense irrigation plan specification review must be performed: Contact Calsense prior to irrigation plan submittal for specification review letter that is to be included along with irrigation design plan. This process will ensure that appropriate communications options for the controllers are used and ensure that radio testing is done, when needed, for all projects.

e. Typical irrigation controllers shall be Calsense ET2000e-(# of stations)-LR-SSER (stainless steel enclosure) with Integrated Radio Remote Board, remote handheld (RRE-Tran one per 48 stations) and appropriate central communication option. The controller will conserve water by automatically adjusting water times according to historic evapotranspiration (ET). Note: A phone line may be required based upon Calsense radio survey.

f. Upon completion a Calsense installation certification must be submitted: Contractor will provide Hesperia Recreation and Park District a Calsense letter of certification prior to requesting final inspection of irrigation control system. This letter can be obtained from a Calsense Field Service representative once all Calsense equipment has been installed per manufacturer specifications. Contact Calsense at 1-800-572-8608 to arrange certification.

12.24 Point-of Connection Equipment Sequence

a. Potable water:

1. Water meter

2. Brass service gate valve (per (HWD requirements)

3. Reduced pressure backflow device

4. Pressure regulator (if specified)

5. Quick coupler valve

6. Yardney in-line automatic flush filter

7. Booster pump (if specified)
8. Master Valve
9. Flow meter
10. Fertigation system
11. Isolation valve for each mainline direction

b. Recycled water:

1. Water meter
2. Brass service gate valve (per HWD requirements)
3. Quick coupler valve
4. Yardney in-line automatic flush filter
5. Double check backflow device
6. Pressure regulator (if specified)
7. Booster pump (if specified)
8. Master Valve
9. Flow meter
10. Fertigation system
11. Isolation valve for each mainline direction

13.0 Planting Standards

13.1 All planting shall comply with *Section 23.0 Approved Plant List*, *Section 26 Planting Specifications* and District Planting Details.

13.2 All plant material shall be carefully selected based on each site specific characteristics including but not limited to space, soil type, sun exposure, wind, weather, microclimate, etc. Selection of plant material per District's *Approved Plant List* does not relieve the landscape architect of the responsibility of proper placement and selection of material per proper horticultural practices.

13.3 Landscape architect must visit the project prior to submittal of plans to confirm that all street trees, shrubs and groundcovers specified are consistent with any adjacent existing landscape improvements.

13.4 Only plant material listed on District's *Approved Plant List* will be accepted unless otherwise approved in writing.

13.5 Plant material quantities must be in accordance with District's *Plant Standards*.

13.6 Layout shall be as designed as listed below:

a. Design plants and ground covers to be in groupings of free-flowing patterns with variations in color, texture and height. Plants must be positioned so that the tallest are positioned behind smaller material. Formal, linear patterns are discouraged. It is our intention for the layout of all plant material to be of a natural, un-industrial theme.

b. Provide multiple varieties of shrubs for each project to avoid mass plantings of single species. Alternate hedgerow shrubs along narrow parkways with other plant varieties to achieve contrast in color and texture.

13.7 Planting plan must include a legend which specifies plant symbols, quantities, sizes and detail number for each type of plant material specified. Planting legend shall also list the plant factor and crop coefficient of each plant type.

13.8 Each plant material specified must have an individual symbol on the plan with corresponding symbol indicated on the legend. Abbreviated call-outs with only circles will not be approved.

13.9 Turf areas for parkway and street landscapes may only be used near street intersections and high visible traffic areas. Typical streetscape shall have approved groundcover planting in lieu of turf wherever possible.

13.10 Street Trees along R.O.W.

a. Provide one each 24" box approved street tree @ 30' spacing for average tree count.

b. Design tree layouts to be in groupings 2-5 trees typical where possible.

13.11 Trees for Parkways/Slopes

a. Provide one each 15 gallon minimum size approved tree for every 700 square feet.

b. For parkways/slopes less than 20 feet in width must have one 15 gallon tree @ 30' max. spacing. Design tree layout to be in groupings of 3-5 trees typical where possible.

13.12 Shrub Planting for Streetscape/Parkway Planters

a. Provide one each 1 gallon approved ornamental shrub for every 9 square feet. Liners may be approved for large grassy swales.

b. Provide one each 5 gallon approved ornamental shrub for every 40 square feet.

13.13 Shrub Planting for Slopes

a. Provide one each 1 gallon approved /ornamental shrub for every 9 square feet.

b. Provide one each 5 gallon approved ornamental shrub for every 75 square feet.

13.14 Ground Cover Planting

a. Provide one each 1 gallon approved groundcover shrub for every 9 square feet. ornamental shrubs can be used in place of groundcover to add alternating colors, heights and textures.

b. Provide approved groundcover throughout all planters with rooted cuttings @ 12” O.C. when conventional spray/rotor heads are approved.

13.15 Slope Erosion Control

a. Provide approved groundcover throughout all planters with 1 gal containers @ 3’ O.C. for drip irrigation.

b. Provide approved groundcover throughout all slopes with rooted cuttings @ 12” O.C. if conventional spray/rotor heads are approved.

c. Slopes 2:1 directly adjacent walks or retaining walls may be subject to jute netting.

13.16 Wall Covering

a. All tract walls shall have one approved 1 gallon minimum size vine @ 10’ spacing along the entire length of all walls.

b. All tract walls shall also have one approved 5 gallon ornamental shrub @ 3’ spacing to screen wall or fence.

c. Vines may be omitted at the discretion of District, provided that there is a sufficient amount of hedge screening as determined solely by District.

14.0 Maintenance Standards

14.1 District reserves the right to require a maintenance surety against all defects in workmanship and materials that may become apparent during a period of one year prior to final acceptance of the project. Contractor shall be responsible for the cost of the bond.

14.2 All landscaped areas shall be inspected and approved in it's entirety by District's representative upon the completion of the maintenance period.

14.3 The maintenance period shall begin when all landscape installation is complete and shall last for one year. The purpose of the maintenance period is to allow the plant material to become established. The District reserves the right to extend the maintenance period (at the builders expense) if the plant material has not become established due to any circumstance.

14.4 The builder shall maintain all plant material during the maintenance period. The builder shall repair any damage to irrigation and replace any dead plant material throughout the maintenance period. before the District will accept the landscaping.

14.5 The District representative shall be sole deciding party regarding all acceptance items.

14.6 Contractor shall provide all charts, record drawings, turn over items etc. prior commencement of maintenance.

14.7 The contractor shall be responsible for the entire project until final acceptance has been provided in writing by District.

14.8 Final acceptance for all projects to be turned over for District maintenance shall be the first of each calendar month. Failure to receive approval for all open punch list items prior to the end of the month shall result in additional maintenance performed by the contractor until the end of the following month at no additional cost to the District.

14.9 Refer to *Section 27.0 Maintenance Specifications* for additional maintenance requirements.

15.0 Utility Exhibit Requirements

15.1 Developer and/or contractor shall prepare and submit a Utility Exhibit to the District for review and approval prior to project maintenance acceptance and transfer of any utility. Developer shall be responsible for all utility and maintenance costs until exhibit has been verified and approved by the District.

15.2 Utility Exhibit shall be a reduced tract map or site plan indicating the sizes, locations and identification numbers for all utilities to be transferred to the District. Below is a list of utilities to be shown on the exhibit:

a. Water meter

b. Backflow device

c. Electric meter

d. Gas meter (if applicable)

e. Cable/phone (if applicable)

f. Irrigation controller

g. Pump and fertigation (if applicable)

15.3 Utility Exhibit shall have a title block indicating the flowing items:

a. Project name

b. Owner/developer name, address, telephone number, fax number and contact person

c. Project street address, location and tract number

d. Date of drawings

e. Sheet number block (indicating sheet___of___)

f. District approval signature block on all sheets-lower right corner (*See Figure "A")*

15.4 Utility Exhibit shall have a base file to include the following:

a. Sidewalks, curbs and walls and fences

b. Streets

c. Buildings

d. Property lines and tract boundaries

15.5 Each utility shall have a designated symbol and shall be shown on a legend to describe the utility name, size, identification number and area of coverage.

15.6 Utility Exhibit shall include the name and telephone number of each public utility purveyor.

15.7 The water meter number and size shall be shown on the Utility Exhibit. The landscape area irrigated by each water meter shall be separately shown and the exhibit shall include the square footage covered by each meter. Each irrigated area shall be shown with a specific colored coded hatched boundary. Square footage for turf and planter areas shall be calculated separately.

15.8 The model number, size and serial number of each backflow device shall be included on the exhibit.

15.9 The physical address, model number, amperage size and used and available breakers for the electric meter shall be shown on the exhibit.

15.10 If a natural gas meter is within the project, all equipment supplied by the gas meter shall also be shown on the exhibit. Locations of the gas equipment shall also be shown on the exhibit.

15.11 If cable or phone line is within the project, all equipment supplied by cable or phone shall be shown on the exhibit.

15.12 The model number, serial number and station size for all irrigation controllers including communication devices shall be shown on the exhibit.

15.13 The model number, horsepower size, and serial number of each booster pump shall be shown on the exhibit.

15.14 The model number, capacity and serial number of each fertigation system shall be shown on the exhibit.

15.15 Size of exhibit shall be determined by the project size in order to legibly identify and note all utility information.

15.16 Utility Exhibits shall be created in AutoCAD with similar format as the Maintenance Exhibit. Refer to *Section 16.0 AutoCAD Standards* for Utility Exhibit AutoCAD Standards.

16.0 AutoCAD Standards

16.1 AutoCAD Standards Overview

a. In order to have consistent AutoCAD file formats submitted to the District, from all engineering and architectural firms, AutoCAD standards have been made that must be followed in order for the District utilize the files as needed for integration into District GIS systems and project archives.

b. The following plans shall be submitted to the District in AutoCAD format:

i. Maintenance Exhibit

ii. Construction Drawings

iii. Construction As-Builts

iv. Utility Exhibit

c All AutoCAD line work shall be drawn on individual layers and defined in *Section 16.17 AutoCAD Layer Names*.

d. All specific AutoCAD blocks used within the drawing shall be drawn on layers as defined in *Section 16.17 AutoCAD Layer Names*.

e. Each drawing file shall be named by the tract number and file type.

16.2 AutoCAD Maintenance Exhibit Format

a. The Maintenance Exhibit file shall be comprised of the following AutoCAD files:

i. Maintenance Exhibit

ii. Site Base File

iii. Title Block

b. All areas to be maintained by the District shall be identified as a unit of measurement in order for the proper assessment to be calculated by the District. The two basic units of measurements are square footage and linear footage. Square footage for slopes shall be tabulated using the following calculations:

i. 2:1 Slopes Multiple square footage by **1.118**

ii. 3:1 Slopes Multiply square footage by **1.054**

iii. 4:1 Slopes Multiply square footage by **1.030**

c. All closed polygons created for the Maintenance Exhibit shall be placed on the associated layer with the standard layer name for that drawing file.

d. Maintenance Exhibit Files shall be named with the project tract number followed by "_ME". Refer to *Section 16.17* for standard layer names

16.3 AutoCAD Construction Drawing Format

a. The Construction Drawing files shall be comprised of the following AutoCAD files:

i. Construction Drawing

ii. Site Base File

iii. Title Block

b. Any line work for items shown within the construction drawings not shown on *Section 16.17 AutoCAD Layer Names* shall be created using the same file name format for ease of layer management.

c. Construction Drawing Files shall be named with the project tract number followed by "_CD". Refer to *Section 16.17* for standard layer names.

16.4 AutoCAD Construction As-Builts Format

a. AutoCAD Construction As-builts shall be taken from the approved AutoCAD Construction Drawing file.

b. File must contain all required record drawings per *Section 24.0 Construction Specifications, Section 25.0 Irrigation Specifications and Section 26.0 Planting Specifications.*

c. Base files shall be designated to plot in black and gray. Dimensions shall be designated to plot in blue. All electrical lines shall be designated to plot in green. All drain lines shall be designated to plot in brown. All irrigation valves, mainlines and other equipment shall designated to plot in red.

d. All required equipment to be included in the as-builts shall be placed on the AutoCAD drawing in the exact location and coordinate as delineated on the dimensions and as installed on the project.

e. All required piping and wiring to be included in the as-builts shall be located in the AutoCAD drawing as delineated on the dimensions and as installed on the project.

f. Locations of all trees shall be shown on the landscape as-builts in the exact location and coordinate as planted. As-builts shall contain the name and size of each tree.

g. Enlargements can be used whenever necessary for visual clarity however, all equipment, piping and wiring shall be shown in actual locations as required for integration of the AutoCAD file into the District GIS systems.

h. Construction As-Builts Files shall be named with the project tract number followed by "_AB". Refer to *Section 16.17* for standard layer names.

16.5 AutoCAD Utility Exhibit Format

a. AutoCAD Utility Exhibit shall contain information as defined in *Section 15.0 Utility Exhibit Requirements.*

b. All required equipment to be included in the utility exhibit shall be placed on the AutoCAD drawing in the exact location and coordinate as installed on the project.

c. The Utility Exhibit file shall be comprised of the following AutoCAD files:

i. Utility Exhibit

ii. Site Base File

iii. Title Block

d. All utilities to be transferred and maintained by the District shall be identified on the Utility Exhibit.

e. All areas covered by each utility service shall be identified within the drawing by closed polygons. Polygons created for the Utility Exhibit shall be placed on the associated layer with the standard layer name for that drawing file.

f. All landscape areas shall be verified against the approved Maintenance Exhibit. Any discrepancies between the area of coverage between the Utility Exhibit and Maintenance Exhibit shall be reported to the District.

g. The Utility Exhibit shall submitted to the District on CD format and two 11x17 color hardcopies.

h. Utility Exhibit Files shall be named with the project tract number followed by "_UE". Refer to *Section 16.17* for standard layer names.

16.6 AutoCAD Line Styles

a. Specific Line Styles shall be used as symbols for all items that are required to be shown on the Maintenance Exhibit with linear units including but not limited to all block walls, wrought iron fencing, PVC fencing, brow ditched and low flow drains as follows:

Name	Standard Line Type	AutoCAD Color
Block Wall	DASHED	Blue
Wrought Iron	DASHED2	Cyan
PVC Fencing	HIDDEN	Green

Brow Ditches	PHANTOM	Yellow
Low Flow Drains	CENTER	Red

16.7 Color Standards

a. The Maintenance Exhibit and Utility Exhibit shall be printed in color and shall utilize the color hatch and line types as a visual delineation of the components.

b. All colors used in the creation of the color hatch and color line types shall be a District standard as shown below:

Description	AutoCAD Color	% Screen
Parks	92	30%
Basins	170	30%
Open Space	55	30%
Parkway 1	11	30%
Parkway 2	41	30%
Parkway 3	71	30%
Slope 1	132	30%
Slope 2	161	30%
Slope 3	191	30%

c. The AutoCAD drawing file shall have individual color designation for each layer to separate and organize the file.

d. The color hatch pattern shall be made by a closed polygon with the same hatch color. Color hatches drawn by “extents” or any other method will not be allowed.

e. All hatch patterns shall be colored per the color standards and set to “solid” in the AutoCAD Boundary Hatch and Fill Window.

16.8 Callout Standards

a. All callouts used for all plans shall be Standard arrow, leader line type, font and font height.

b. Leader lines for all callouts shall be created on the ME_LABLES or UE_LABLES layer.

c. Text for all callouts shall be created on the ME_TEXT or UE_TEXT layer.

16.9 Vicinity Map

a. The Vicinity Map shall be located in the top left corner of the Maintenance Exhibit and Utility Exhibit. The Vicinity Map for

Construction Drawings shall be placed towards the center of the title sheet.

b. The Vicinity Map shall be created on one layer with the appropriate color selection to clearly print.

c. All text shall be a minimum size of 1/16".

d. The map shall indicate the project location including major roads and nearest cross streets. The nearest highways or freeways must also be shown.

16.10 Legend

a. Legends shall have closed polylines with "solid" colored coded hatches that correspond with each individual closed polyline within the Maintenance Exhibit and Utility Exhibit.

b. Legend shall have polyline linestyles for all fencing as indicated in line style patterns section.

c. Legend shall have text that describes each individual polyline colored coded hatch pattern and symbol created on the ME_TEXT and UE-TEXT layer so that the legend describes each item within the Maintenance Exhibit and Utility Exhibit.

16.11 AutoCAD Site Base File

a. AutoCAD site base file shall include but be limited to the following items:

i. Project site plan/base map

ii. Topography

iii. Sidewalks, curbs and gutters

iv. Streets including centerlines and station points

v. Buildings and lot lines

vi. Property lines, tract boundaries and right-of-way

b. Base Files shall be named with the project tract number followed by "_Base". Refer to *Section 16.17* for standard layer names.

16.12 AutoCAD Title Block

a. Title block file shall contain the following items:

i. District approval block

ii. Architects and/or engineer's contact information

iii. Owner's contact information

iv. Project name and tract number

v. Revision block, date, and drawn by block

vi. Licensed landscape architect and/or civil engineer stamp, and signature block.

b. Title Block files shall be named with the tract number followed by "_TB". Refer to *Section 16.17* for standard layer names.

16.13 Drawing Scale and Units

a. A North arrow and graphic scale bar shall be included on the lower right corner of each drawing sheet.

b. Drawing files shall be drawn at an Engineer's scale using
1 unit = 1'-0"

c. Base file shall maintain a true north orientation in model space. If the current orientation of the base file in AutoCAD model needs to be rotated to fit the page more effectively to minimize paper use, this shall be completed by using the viewport in Layout (Paper) Space by using the AutoCAD "DVIEW" command.

16.14 External Reference Set Up

a. All External Reference drawings shall be created in Model Space and tied to the Horizontal Datum of the California State Plane Coordinate System Zone 6 (NAD 63). Drawing units shall be decimal.

b. External Reference drawings shall be saved in the same folder as the file that the External File is being inserted into as listed below:

i. In the External Reference Manager use the Overlay Function to attach an external references to the Master Drawing. The Master Drawing should be set at "World" through the Universal Coordinate System; "UCS".

ii. External Reference drawing for the "Base" file shall be inserted into the "model" space of the master drawing at X,Y,Z insertion point, 0,0,0.

iii. External Reference drawing for the "Title Block" file shall be inserted into the "paper" space of the master drawing.

iv. Both drawings shall be inserted with an X, Y insertion point of 0,0,0 and the Universal Coordinate System or "UCS" should be set at "World."

16.15 Line Type Scaling

a. Line type scaling shall be adjusted by the layer and/or the line itself in the drawing that it is created in.

b. Line type scaling for all drawings shall be a listed below:

i. Set "LT" scale for all drawings to "1"

ii. Set "PSLTSCALE" for all drawings to "0"

16.16 Standard Viewports

a. The "paper" space portion of the drawing shall contain a viewport created on the P_VIEWPORT layer for the maintenance exhibit. This layer shall be set to a "non-plot" in the layer manager window. The "Base" drawing will be inserted through the viewport at a scale not to exceed 1" = 100'0".

16.17 Standard Layer Names

Below is a list of AutoCAD layer names that must be used within the "Base" drawing commonly called civil plan:

Layer Name	AutoCAD Object
C_AIRVAC FIRE	POINT
C_AIRVAC POTABLE	POINT
C_AIRVAC RECYCLED	POINT
C_BACKFLOW FIRE	POINT
C_BACKFLOW POTABLE	POINT
C_BACKFLOW RECYCLED	POINT
C_BASIN	LINE
C_BLOW OFF POTABLE	POINT
C_BLOW OFF RECYCLED	POINT
C_BUILDING C_BLOW OFF FIRE	POINT
C_CENTERLINES	LINE
C_COMMERCIAL BLDG	LINE
C_CONTOUR MAJOR	LINE
C_CONTOUR MINOR	LINE
C_CURB	LINE
C_CURB & GUTTER	LINE
C_DRIVEWAY	LINE
C_HYDRANT FIRE	POINT
C_LOT NUMBER	LINE
C_MAIN FIRE	LINE

C_MAIN POTABLE	LINE
C_MAIN RECYCLED	LINE
C_MEDIAN	LINE
C_METER FIRE	POINT
C_METER POTABLE	POINT
C_METER RECYCLED	POINT
C_PAD ELEVATION	LINE
C_PRESSURE REGULATING VALVE FIRE	POINT
C_PRESSURE REGULATING VALVE POTABLE	POINT
C_PRESSURE REGULATING VALVE RECYCLED	POINT
C_PROPERTY LINES	LINE
C_PUMP FIRE	POINT
C_PUMP POTABLE	POINT
C_PUMP RECYCLED	POINT
C_QUICK COUPLER FIRE	POINT
C_QUICK COUPLER POTABLE	POINT
C_QUICK COUPLER RECYCLED	POINT
C_RAMP	LINE
C_RESIDENCE BLDG	LINE
C_RESTROOM BLDG	LINE
C_SENSITIVE AREA	POLYGON
C_SERVICE CONNECTION FIRE	POINT
C_SERVICE CONNECTION POTABLE	POINT
C_SERVICE CONNECTION RECYCLED	POINT
C_SIDEWALK	LINE
C_SLEEVE	LINE
C_STATION NUMBERS	LINE
C_STREET NAMES	LINE
C_STORM DRAIN	LINE
C_STUBOUT FIRE	POINT
C_STUBOUT POTABLE	POINT
C_STUBOUT RECYCLED	POINT
C_SWALE	LINE
C_TANK CHEMICAL	POINT
C_TANK POTABLE	POINT
C_TANK RECYCLED	POINT
C_TANK SEWER	POINT
C_TEST STATION POTABLE	POINT
C_TEST STATION RECYCLED	POINT
C_TEXT	LINE
C_TOP-TOE OF SLOPE	LINE
C_VALVE ISOLATION FIRE	POINT
C_VALVE ISOLATION POTABLE	POINT
C_VALVE ISOLATION RECYCLED	POINT
C_WELL ABANDONED	POINT
C_WELL AGRICULTURAL	POINT
C_WELL DOMESTIC	POINT

Below is a list of AutoCAD layer names that must be used within any "Plumbing" drawing:

Layer Name	AutoCAD Object
P_DECORATIVE FOUNTAIN POTABLE	POINT
P_DECORATIVE FOUNTAIN RECYCLED	POINT
P_DRINKING FOUNTAIN	POINT
P_EYE WASH STATION	POINT
P_HOSE BIB FIRE	POINT
P_HOSE BIB POTABLE	POINT
P_MAIN FIRE	LINE
P_MAIN POTABLE	LINE
P_PRESSURE REGULATING VALVE FIRE	POINT
P_PRESSURE REGULATING VALVE POTABLE	POINT
P_SWIMMING POOL	LINE
P_TEST STATION FIRE	POINT
P_TEST STATION POTABLE	POINT
P_VALVE ISOLATION FIRE	POINT
P_VALVE ISOLATION POTABLE	POINT

Below is a list of AutoCAD layer names that must be used within the landscape drawing:

Layer Name	AutoCAD Object
L_AIRVAC FIRE	POINT
L_AIRVAC POTABLE	POINT
L_AIRVAC RECYCLED	POINT
L_BACKFLOW FIRE	POINT
L_BACKFLOW POTABLE	POINT
L_BACKFLOW RECYCLED	POINT
L_BLOW OFF FIRE	POINT
L_BLOW OFF POTABLE	POINT
L_BLOW OFF RECYCLED	POINT
L_BOOSTER POTABLE	POINT
L_BOOSTER RECYCLED	POINT
L_CHEMIGATION POTABLE	POINT
L_CHEMIGATION RECYCLED	POINT
L_FLOW SENSOR POTABLE	POINT
L_FLOW SENSOR RECYCLED	POINT
L_HOSE BIB POTABLE	POINT
L_HYDRANT POTABLE	POINT
L_IRR MAIN POTABLE	LINE
L_IRR MAIN RECYCLED	LINE
L_IRRIGATED AREA POTABLE POC A	POLYGON
L_IRRIGATED AREA RECYCLED POC 1	POLYGON
L_METER POTABLE	POINT
L_METER RECYCLED	POINT

L_MOW CURB	LINE
L_PRESSURE REGULATING VALVE POTABLE	POINT
L_PRESSURE REGULATING VALVE RECYCLED	POINT
L_PROJECT LIMIT LINE	LINE
L_PROJECT STUDY AREA	POLYGON
L_QUICK COUPLER POTABLE	POINT
L_QUICK COUPLER RECYCLED	POINT
L_USE SITE BOUNDARY	POLYGON
L_SIGNAGE RECYCLED	POINT
L_STRAINER RECYCLED	POINT
L_STUBOUT POTABLE	POINT
L_STUBOUT RECYCLED	POINT
L_TEST STATION POTABLE	POINT
L_TEST STATION RECYCLED	POINT
L_TREE ORNAMENTAL	POINT
L_TREE PALM	POINT
L_VALVE ISOLATION POTABLE	POINT
L_VALVE ISOLATION RECYCLED	POINT
L_VALVE MCV POTABLE	POINT
L_VALVE MCV RECYCLED	POINT
L_VALVE RCV POTABLE	POINT
L_VALVE RCV RECYCLED	POINT

Below is a list of AutoCAD layer names that must be used within the "Title Block" drawing:

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Layer Name	AutoCAD Object
TB_LINES	LINE
TB_OUTLINE	LINE
TB_STAMP AGENCY	LINE
TB_STAMP CONSULTANT	LINE
TB_TEXT 1	LINE
TB_TEXT 2	LINE

Below is a list of AutoCAD layer names that must be used within the "Maintenance Exhibit" drawing:

Layer Name	AutoCAD Object
ME_BUILDING AREA	POLYGON
ME_RESTROOM AREA	POLYGON
ME_PARKING LOT	POLYGON
ME_FLATWORK	POLYGON
ME_BLOCK WALL	POLYLINE
ME_TUBULAR STEEL FENCE	POLYLINE
ME_PVC FENCING	POLYLINE
ME_BROW DITCH	POLYLINE

ME_SHADE CANOPY	LINE
ME_ROW LANDSCAPE	POLYGON
ME_PKWY LANDSCAPE	POLYGON
ME_ONSITE LANDSCAPE	POLYGON
ME_OPEN SPACE	POLYGON
ME_STORM DRAIN	POLYLINE
ME_LOW FLOW DRAIN	POLYLINE
ME_NON IRRIGATED AREA	POLYGON
ME_DG	POLYGON
ME_INFIELD MIX	POLYGON
ME_SCALE	LINE
ME_TEXT	LINE
ME_VICINITY MAP	LINE
ME_VIEWPORT	LINE
ME_DATA TABLE	LINE
ME_DELTA REVISION	LINE
ME_DETAILS	LINE
ME_NORTH ARROW	LINE
ME_PARCEL AREA	LINE
ME_LABELS	LINE
ME_MATCHLINE	LINE
ME_PROJECT LIMIT	LINE
ME_PROJECT PHASING	LINE
ME_TOTAL PROJECT SITE AREA	LINE
ME_TOTAL LANDSCAPE AREA	LINE

Below is a list of AutoCAD layer names that must be used within the "Utility Exhibit" drawing per *Section 15.0 Utility Exhibit Requirements*:

Layer Name	AutoCAD Object
UE_IRRIGATED AREA 1	POLYGON
UE_IRRIGATED AREA 2	POLYGON
UE_IRRIGATED AREA 3	POLYGON
UE_IRRIGATED AREA 3	POLYGON
UE_IRRIGATED AREA 4	POLYGON
UE_IRRIGATED AREA 5	POLYGON
UE_WATER METER	POINT
UE_BACKFLOW	POINT
UE_ELECTRIC METER	POINT
UE_GAS METER	POINT
UE_CABLE-GAS	POINT
UE_IRRIGATION CONTROLLER	POINT
UE_BOOSTER PUMP	POINT
UE_FERTIGATON INJECTOR	POINT
UE_TEXT	LINE
UE_SCALE	LINE
UE_VICINITY MAP	LINE
UE_VIEWPORT	LINE

UE_DATA TABLE	LINE
UE_DELTA REVISION	LINE
UE_NORTH ARROW	LINE
UE_PARCEL AREA	LINE
UE_LABELS	LINE
UE_MATCHLINE	LINE
UE_PROJECT LIMIT	LINE
UE_TOTAL LANDSCAPE AREA	LINE
UE_DATA TABLE	LINE

16.18 Pen Assignments

The following pen assignments shall be used for black and white AutoCAD line work:

AutoCAD Color	Pen No.	Line Width (mm)	% Screen	Output
Red	1	.13	0	Black
Yellow	2	.25	0	Black
Green	3	.35	0	Black
Cyan	4	.50	0	Black
Blue	5	.65	0	Black
Magenta	6	.80	0	Black
White	7	1.4	0	Black
Lt. Red	11	.13	30%	Halftone
Lt. Yellow	41	.25	30%	Halftone
Lt. Green	71	.35	30%	Halftone
Lt. Cyan	132	.50	30%	Halftone
Lt. Blue	161	.65	30%	Halftone
Lt. Magenta	191	.80	30%	Halftone

16.19 Standard Fonts

a. All Exhibits shall use a standard AutoCAD font and font style for all labels and call-outs. The standard font and font style shall be Arial and Standard:

b. Font sizes shall be adjusted as needed based on the drawing scale.

c. Minimum font sizes shall be 1/10”.

17.0 Figures “A” and “B”

Figure “A”

HESPERIA Recreation & Park District ... Serving the Community Since 1957	HESPERIA RECREATION & PARK DISTRICT APPROVAL
Planning Department	Date:

Figure “B”

HOLD HARMLESS & INDEMNIFICATION CLAUSE

CONTRACTOR AGREES TO ASSUME SOLE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER/DEVELOPER, THE COUNTY OF LOCAL JURISDICTION AND THE LANDSCAPE DESIGNER HARMLESS FROM ANY AND ALL LIABILITY REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER/DEVELOPER, COUNTY OF LOCAL JURISDICTION AND THE LANDSCAPE DESIGNER.

17.0 Figures “C” and “D”

Figure “C”

AMERICANS WITH DISABILTIES NOTES

1. ALL SLOPES SHOWN ON THIS PLAN WERE DESIGNED AT OR BELOW MAXIMUMS ALLOWED BY THE AMERICANS WITH DISABILITY ACT ACCESS GUIDE (A.D.A.A.G.) IN ORDER TO ALLOW FOR CONSTRUCTION TOLERANCES. IT IS THE CONTRACTORS RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH A.D.A.A.G. AND IN THE EVENT THAT A DESIGN QUESTION SHOULD ARISE, OR A FIELD CONDITION PRESENT ITSELF THAT IS DIFFERENT THAN SHOWN ON THESE PLANS, WORK SHOULD CEASE AND THE ENGINEER BE NOTIFIED SO THAT AN ACCEPTABLE SOLUTION CAN BE DETERMINED.

2. THE CONTRACTOR IS ADVISED TO CAREFULLY CHECK ALL PHASES OF WORK RELATING TO A.D.A.A.G. ACCESS FOR THIS PROJECT. SINCE THE CODE DOES NOT ALLOW FOR A CONSTRUCTION TOLERANCE, ANY CONSTRUCTION THAT EXCEEDS MAXIMUM OR MINIMUM DIMENSIONS AND SLOPES AS CALLED OUT BY A.D.A.A.G. ARE SUBJECT TO REJECTIONS BY THE COUNTY AND MAY BE REQUIRED TO BE REMOVED AND REPLACED.

3. SINCE THE CIVIL ENGINEER OR SURVEYOR CANNOT CONTROL THE EXACT METHODS OR MEANS USED BY THE GENERAL CONTRACTOR OR THEIR SUB-CONTRACTOR DURING GRADING AND CONSTRUCTION OF THE PROJECT, THE CIVIL ENGINEER OR SURVEYOR ASSUMES NO RESPONSIBILTIY FOR FINAL ACCEPTANCE OF A.D.A.A.G. RELATED ITEMS OF THIS PROJECT BY THE COUNTY, ANY OTHER AUTHORITY OR OTHER AFFECTED PARTIES.

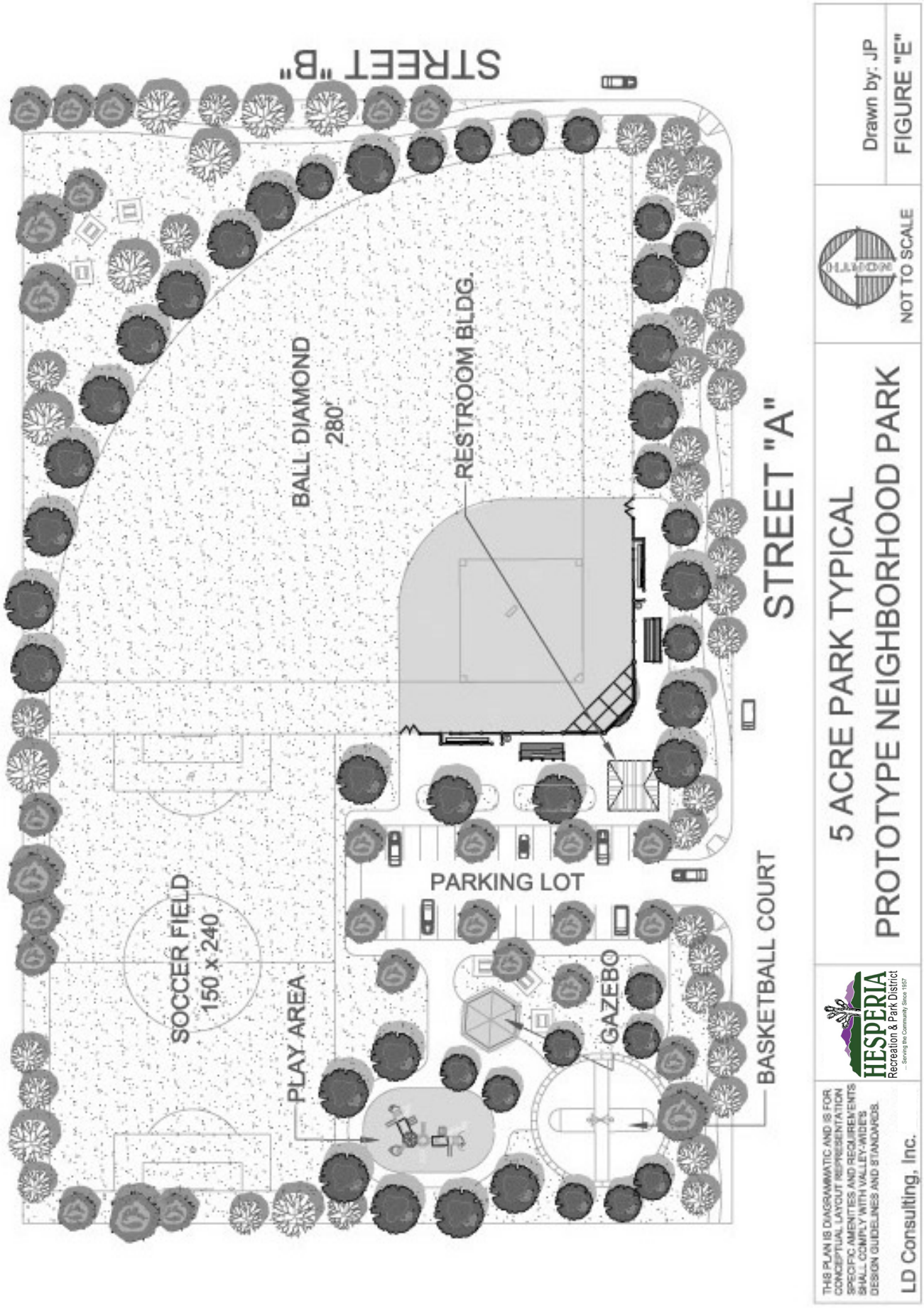
COMPLIANCE WITH A.D.A.A.G. CONSTRUCTION REQUIREMENTS WILL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THEIR SUB-CONTRACTOR(S).

Figure “D”

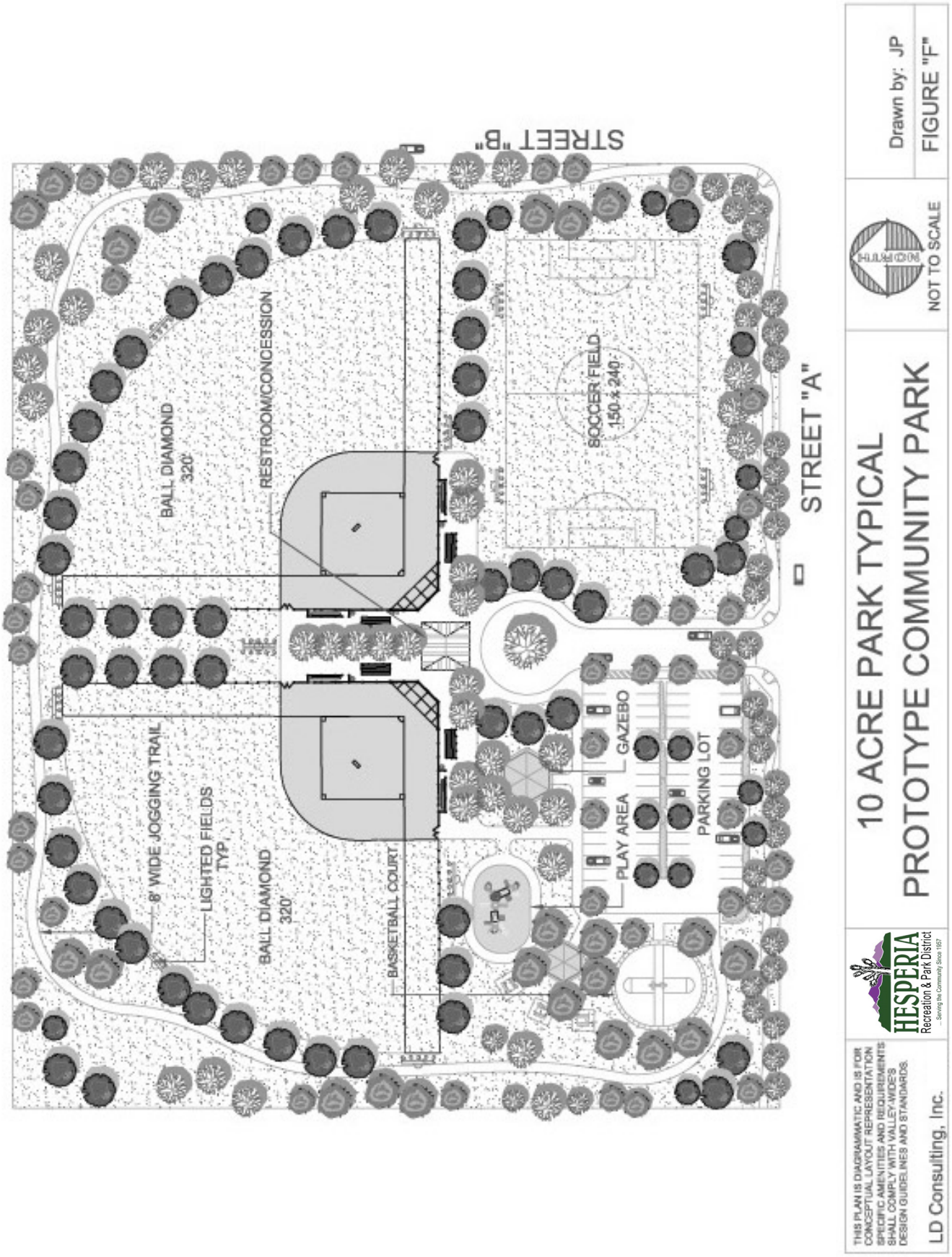
Approval Time Limitation

APPROVAL SHALL BE SIX (6) MONTHS FROM THE DATE OF APPROVAL SIGNATURE. IF CONSTRUCTION HAS NOT COMMENCED WITHIN THE LISTED TIME, HESPERIA RECREATION AND PARK DISTRICT RESERVES THE RIGHT TO REVIEW DRAWINGS FOR POSSIBLE REVISIONS DUE TO CHANGES IN SPECIFICATIONS AND STANDARDS

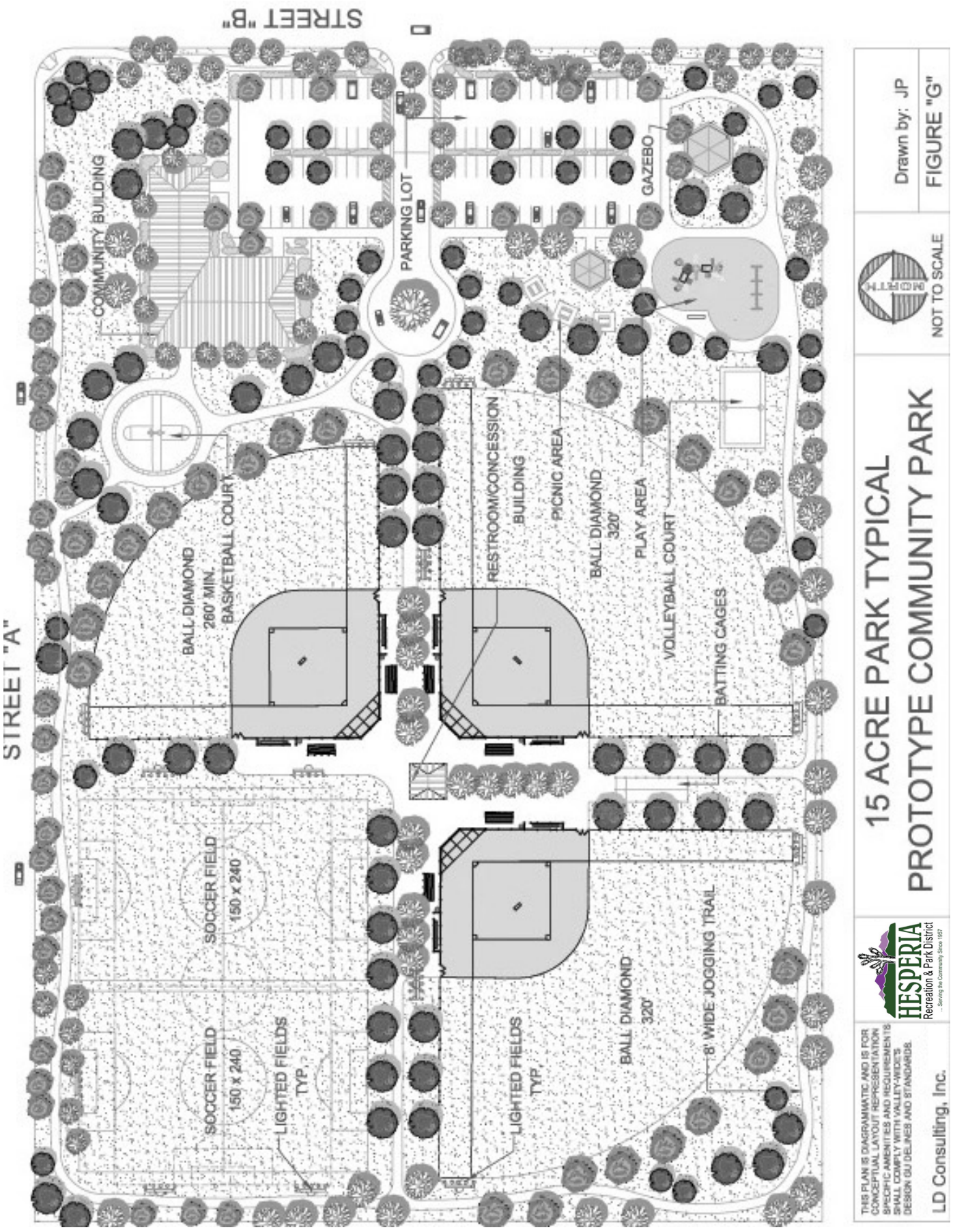
17.0 Figure “E”


STREET "B"
BALL DIAMOND
280'
RESTROOM BLDG.
STREET "A"
SOCCER FIELD
150 x 240
PARKING LOT
PLAY AREA
GAZEBO
BASKETBALL COURT
5 ACRE PARK TYPICAL
PROTOTYPE NEIGHBORHOOD PARK
NOT TO SCALE
Drawn by: JP
FIGURE "E"
HESPERIA
Recreation & Park District
THIS PLAN IS DIAGRAMMATIC AND IS FOR CONCEPTUAL LAYOUT REPRESENTATION SPECIFIC AMENITIES AND REQUIREMENTS SHALL COMPLY WITH VALLEY-WIDE'S DESIGN GUIDELINES AND STANDARDS.
LD Consulting, Inc.

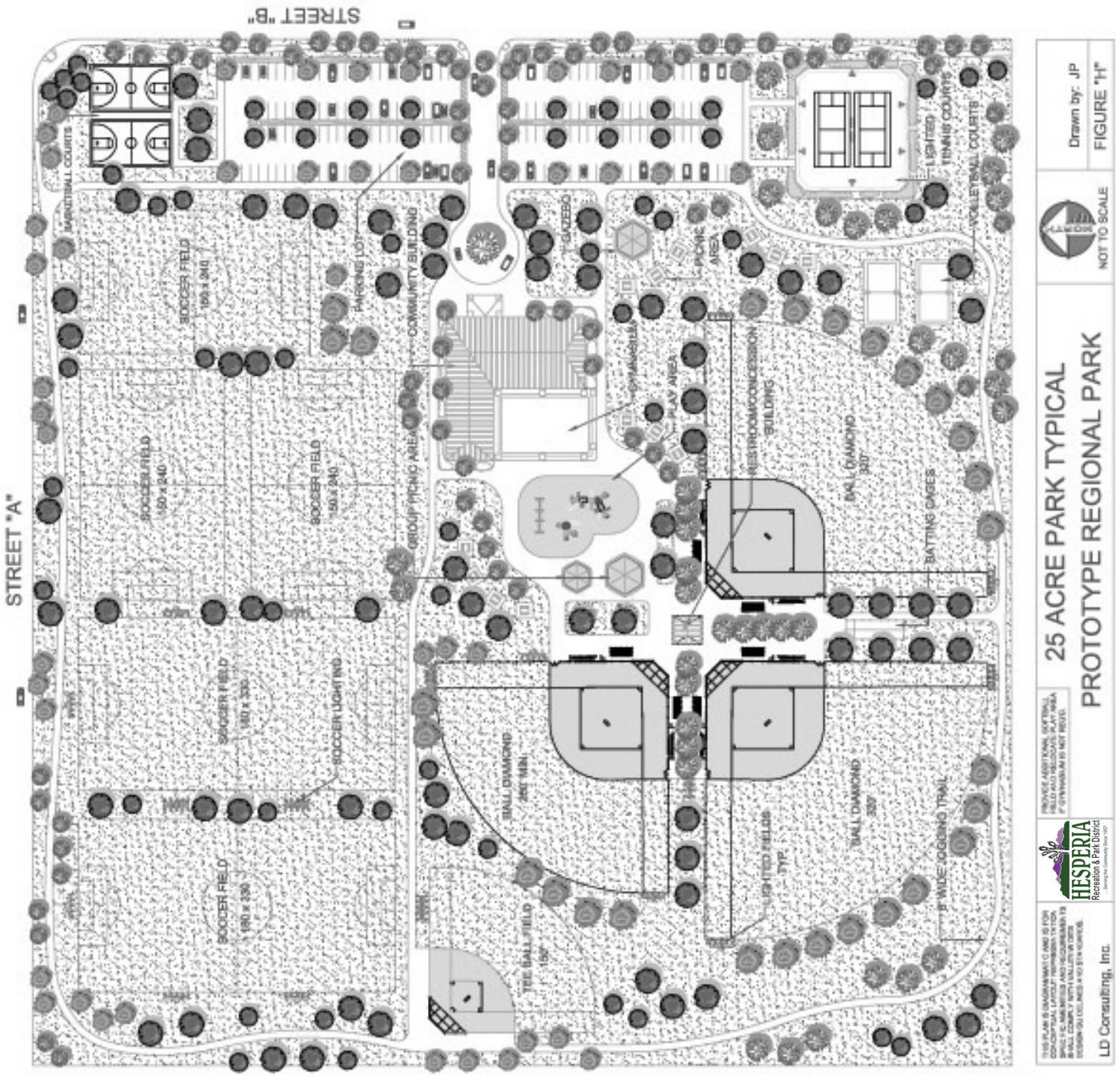
17.0 Figure “F”


STREET "B"
STREET "A"
BALL DIAMOND
320'
RESTROOM/CONCESSION
SOCCER FIELD
150 x 240'
8' WIDE JOGGING TRAIL
LIGHTED FIELDS
TYP.
BALL DIAMOND
320'
BASKETBALL COURT
PLAY AREA
GAZEBO
PARKING LOT
10 ACRE PARK TYPICAL
PROTOTYPE COMMUNITY PARK
NOT TO SCALE
Drawn by: JP
FIGURE "F"
HESPERIA
Recreation & Park District
LD Consulting, Inc.
THIS PLAN IS DIAGRAMMATIC AND IS FOR CONCEPTUAL LAYOUT REPRESENTATION SPECIFIC AMENITIES AND REQUIREMENTS SHALL COMPLY WITH VALLEY-WIDE'S DESIGN GUIDELINES AND STANDARDS.

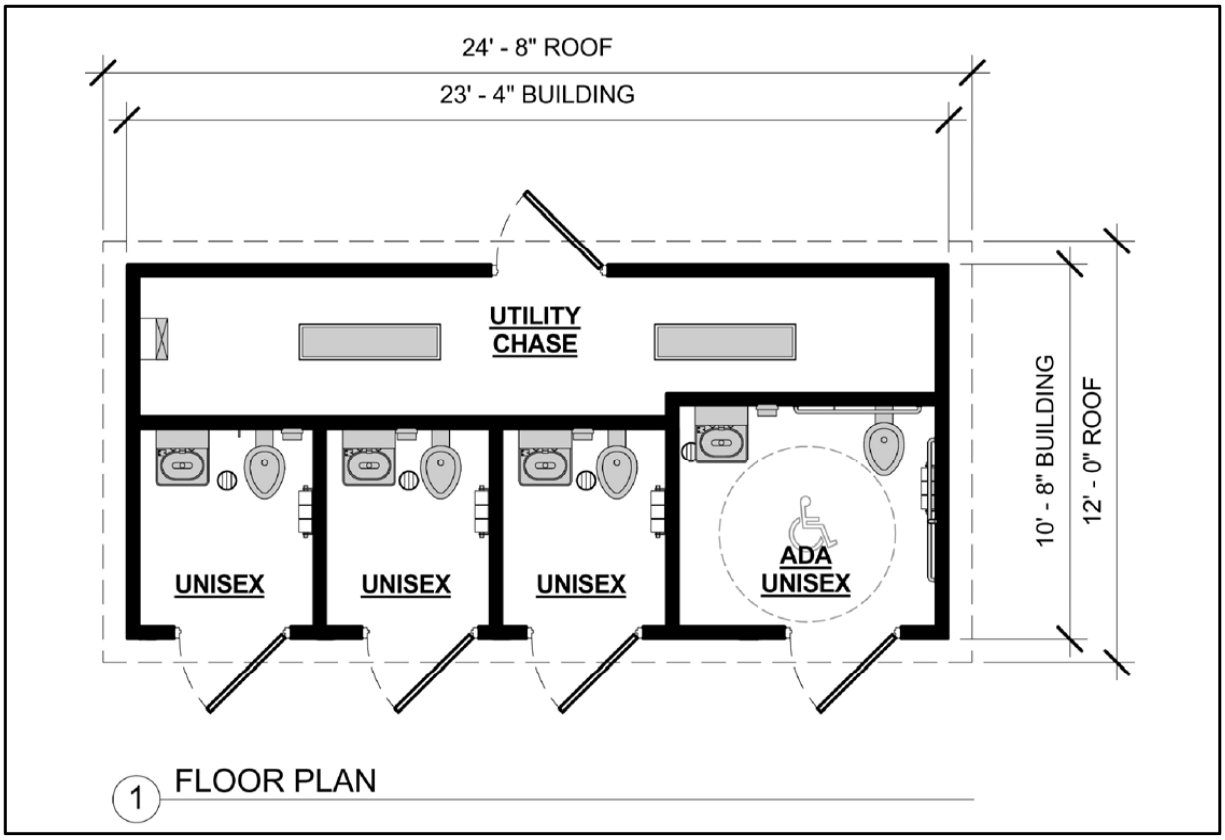
17.0 Figure “G”


STREET "B"
STREET "A"
COMMUNITY BUILDING
PARKING LOT
GAZEBO
BALL DIAMOND
260' MIN.
BASKETBALL COURT
RESTROOM/CONCESSION
BUILDING
PICNIC AREA
BALL DIAMOND
320'
PLAY AREA
VOLLEYBALL COURT
BATTING CAGES
SOCCER FIELD
150 x 240
SOCCER FIELD
150 x 240
LIGHTED FIELDS
TYP.
LIGHTED FIELDS
TYP.
BALL DIAMOND
320'
8' WIDE JOGGING TRAIL
15 ACRE PARK TYPICAL
PROTOTYPE COMMUNITY PARK
NORTH
NOT TO SCALE
Drawn by: JP
FIGURE "G"
HESPERIA
Recreation & Park District
Serving the Community Since 1957
THIS PLAN IS DIAGRAMMATIC AND IS FOR CONCEPTUAL LAYOUT REPRESENTATION SPECIFIC AMENITIES AND REQUIREMENTS SHALL COMPLY WITH VALLEY-WIDE'S DESIGN GUIDELINES AND STANDARDS.
LD Consulting, Inc.

17.0 Figure “H”


STREET "A"
STREET "B"
25 ACRE PARK TYPICAL
PROTOTYPE REGIONAL PARK
FIGURE "H"
Drawn by: JP
NOT TO SCALE
HESPERIA
Recreation & Park District
LD Consulting, Inc.

17.0 Figure "I"



NOTES:

FLOOR PLAN IS SUBJECT TO CHANGE DEPENDING UPON ACTUAL PARK LAYOUT AND DISTRICT NEEDS.
BUILDING MUST COMPLY WITH HESPERIA RECREATION AND PARK DISTRICT SPECIFICATIONS AND LOCAL CODES.
A KNOX BOX SHALL BE USED FOR ALL RESTROOM DOORS.

This is a Preliminary Design Drawing Only By

THE PUBLIC RESTROOM COMPANY
DESIGN CONSULTANTS - CONSTRUCTION - INSTALLATION

639 Isbell Rd. Suite 440
Reno, NV 89509
Ph. 888-888-2060
Fax 888-888-1448

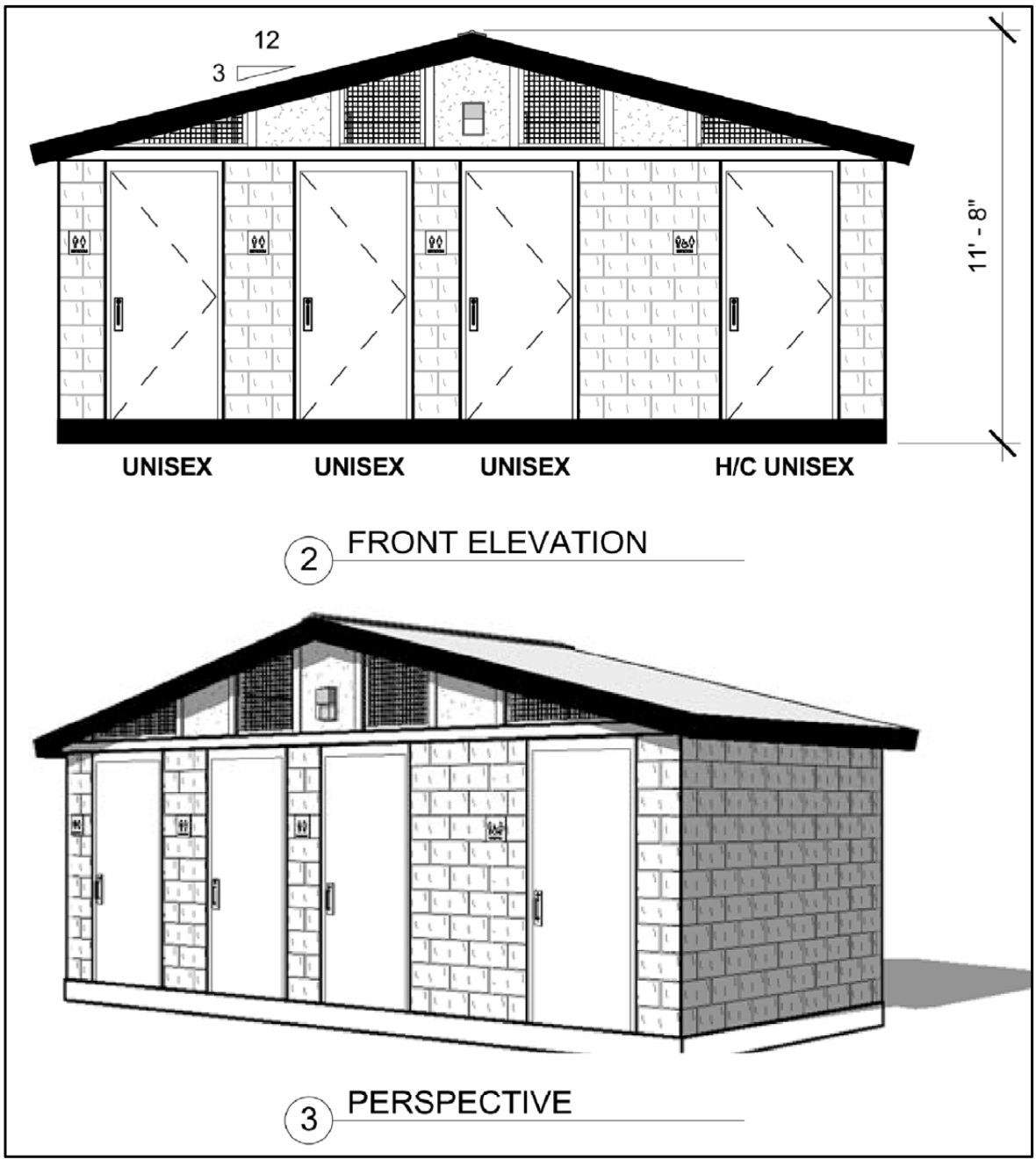
HESPERIA Recreation & Park District

HESPERIA RECREATION & PARK DISTRICT

TYPICAL PROTOTYPE
RESTROOM BUILDING

ACTUAL LAYOUT AND AMENITIES T.B.D. PER PROJECT MANUFACTURER SHALL BE THE PUBLIC RESTROOM CO.

17.0 Figure "I" (continued)



This is a Preliminary Design Drawing Only

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639 Isbell Rd. Suite 440
Reno, NV 89509
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Fax 888-888-1448

HESPERIA
Recreation & Park District

HESPERIA RECREATION & PARK DISTRICT

TYPICAL PROTOTYPE
RESTROOM BUILDING

ACTUAL LAYOUT AND AMENITIES T.B.D. PER PROJECT MANUFACTURER SHALL BE THE PUBLIC RESTROOM CO.

18.0 Park Site Requirements and Approved Amenities

HESPERIA
Recreation & Park District
... Serving the Community Since 1957

Hesperia Recreation & Park District

Landscape Standards

Park Site Requirements

Park Type & Description	5-Acres	Larger than 5-Acres but less than 20-Acres	Larger than 20-Acres
Neighborhood Park			
Drinking Fountains	2	N/A	N/A
Trash Receptacles	3	N/A	N/A
Restrooms	Determined per project	N/A	N/A
Lighting	Determined per project	N/A	N/A
Park Benches	3	N/A	N/A
Shaded Play Structure and Shaded Swings	1	N/A	N/A
Shade Structure	1	N/A	N/A
Community Park			
Drinking Fountains	Determined per project	2 min., plus 2 every 10 acres	6 min., plus 2 every 10 acres
Trash Receptacles	3	4 min., plus 2 every 5 acres	8 min., plus 2 every 10 acres
Restrooms	Determined per project	Required	Required
Lighting	Determined per project	Required	Required on fields and walkways
Park Benches	3	4 min., plus 1 every 5 acres	9 min., plus 2 every 5 acres
Shaded Play Structure	1	1	1
Shaded Swings (1 min. infant swing)	4	6 min.	8 min.
Barbecues	N/A	2 min., plus 1 every 5 acres	2 min., plus 1 every 5 acres
Picnic Tables	2	3 min., plus 2 every 5 acres	10 min., plus 2 every 5 acres
ADA Picnic Tables	1	1 min., plus 1 every 5 acres	4 min., plus 1 every 5 acres

18.0 Park Site Requirements and Approved Amenities (continued)

Park Type & Description	5-Acres or Less	Larger than 5-Acres but less than 20-Acres	Larger than 20-Acres
Sports Park			
Drinking Fountains	N/A	2 min., plus 2 every 10 acres	6 min., plus 2 every 10 acres
Trash Receptacles	N/A	4 min., plus 2 every 5 acres	10 min., plus 2 every 10 acres
Restrooms	N/A	Required	Required
Lighting	N/A	Required on fields and walkways	Required on fields and walkways
Benches	N/A	6 min.	6 min., plus 2 every 5 acres
Shaded Play Structure/Tot Lot	N/A	1	1
Shaded Swings (2 min. infant swings)	N/A	6 min.	8 min.
Barbecue	N/A	2 min., plus 1 per 5 acres	8 min.
Picnic Tables	N/A	6 min., plus 2 per 5 acres	12 min., plus 2 per 5 acres
ADA Picnic Tables	N/A	2 min., plus 1 per 5 acres	4 min., plus 1 per 5 acres
Bike Racks	N/A	4 bike min., plus 1 per acre	6 bike min., plus 1 per acre
Shade Structure	N/A	2 min.	3 min.
Bleachers W/ADA Designation	N/A	2 per field	2 per field
Dug-outs	N/A	2 per field	2 per field
Player Benches	N/A	2 per field	2 per field
Bat Racks	N/A	2 per field	2 per field
Multi-purpose Trail	N/A	Required	Required

18.0 Park Site Requirements and Approved Amenities (continued)

Hesperia Recreation & Park District Approved Park Amenities

Item	Model #/Color	Manufacturer	Phone #
Trash Receptacle	#1129	Miracle Recreation	(800) 523-4202
Park Bench	#1266 or #1268	Miracle Recreation	(800) 523-4202
Picnic Table	#1116-2 or #1118-2	Miracle Recreation	(800) 523-4202
ADA Picnic Table	#1148	Miracle Recreation	(800) 523-4202
Play Structure	Site Determined	Miracle Recreation	(800) 523-4202
Barbecue	#NSS-20 B6S	RJ Thomas Mfg. Co.	(800) 762-5002
Swings	Site Determined	Miracle Recreation	(800) 523-4202
Bike Rack	#H365-IG-P	Miracle Recreation	(800) 523-4202
Shade Structure	Site Determined	Poligon Architecture	(800) 354-7721
Drinking Fountain	#3380	Haws Corporation	(510) 525-5801
Basketball Backboard	#K32533 & K32577	Tomark Sports	(800) 959-1844
Basketball Rim	#K21642	Tomark Sports	(800) 959-1844
Picnic Table	#1116-2	Tomark Sports	(800) 959-1844
Infield Mix	'Pro Gold' Premium	Gail Materials	(951) 277-2667
Home Plate Mix	Premium Homeplate Mix	Gail Materials	(951) 277-2667
Hot Coal Container	Q-PSHA-2842-C#-T2	Quick Crete	(951) 737-6240
Ground Anchor Base Kit	#K13281	Tomark Sports	(800) 959-1844
Basketball Post	#K31004	Tomark Sports	(800) 959-1844
Bleachers	#TM-K13722	Tomark Sports	(800) 959-1844
Players Bench	#K-10697	Tomark Sports	(800) 959-1844
Bat Rack	#TB-K30026	Tomark Sports	(800) 959-1844
Home Plate	#K10248	Tomark Sports	(800) 959-1844
1, 2 & 3 bases	#K13821	Tomark Sports	(800) 959-1844
1, 2 & 3 bases for 80' & 90' fields	#K13819	Tomark Sports	(800) 959-1844
Pitching Rubber	#K10380	Tomark Sports	(800) 959-1844

19.0 Plan Submittal Checklist

Hesperia Recreation & Park District
Landscape Plan Submittal Checklist

General:

____ Screen out areas other than District LMD maintained areas
____ Legible to read and interpret
____ 30" x 42" maximum size sheets completed plans (all sheets listed on title sheet index)
____ Sheet___of___ provided
____ Max. scale 1" = 30'
____ North arrow on each plan
____ Match lines correct
____ Street names
____ Project limits: building coverage, paved areas, R.O.W., private areas
____ Maintenance responsibilities defined
____ Handicap ramps & rails
____ Plan cross-referencing
____ 1st submittal (2 sets)
____ Re-submittal (2 sets)
____ Approval (3 sets)
____ Re-submittal required past 6 months
____ Fence & wall plan attached
____ Storm drain plan attached
____ Precise grading plan attached
____ Maintenance exhibit attached (1st Submittal)
____ Calsense & fertigation compliance letter

Title Sheets:

____ Location map
____ Vicinity maps with street configurations
____ Index
____ General notes: landscape quantities:
___ Total sq. ft. in R.O.W.
___ Total sq. ft. District LMD area
___ Total acres District LMD area
___ Total trees in R.O.W.- by size
____ Project title/tract no./cross street & addresses

____ Revision block
____ Landscape arch. seal/signature
____ Developer's name/address/phone number
____ Project manager's name/phone number
____ Plan date
____ District approval block on all sheets (lower right corner)
____ All other required agency approval blocks
____ List required inspections
____ List inspection number (760) 244-5488
____ A.D.A.A.G. note
____ Time Limitation Note

Irrigation Plans:

____ Maintenance responsibilities defined
____ Spot elevation (top of curb @ P.O.C.)
____ Location of water meter and/or P.O.C.
____ Water information (blocked out)
- water source & phone no.
- potable/reclaimed
- available pressure range (high/low)
- water meter size
- peak demand in GPM
- date information obtained

____ Backflow preventer
____ Fertilizer injector
____ Pressure regulator
____ Master valve
____ Flow sensor
____ Filter
____ Controller/enclosure
____ Booster pump/enclosure
____ Precipitation rates for each valve
____ Water budget

____ Irrigation pressure loss calculations – farthest, largest (15-20 PSI residual)
____ Drinking fountains (handicap accessible)
____ Isolation ball/butterfly valves
____ Quick coupler valves @100' O.C. w/ball valve
____ Approved irrigation equipment
____ Reclaimed water "Standard Notes" from water district
____ Cross-reference on each sheet for irrigation legend, details, notes and specifications
____ Current details per District standards
____ Legend
- equipment model number/size
- radius per sprinkler head
- PSI demand per sprinkler head
- GPM demand per sprinkler head

____ Specifications per District Landscape Guidelines

19.0 Plan Submittal Checklist (continued)

HESPERIA
Recreation & Park District
... Serving the Community Since 1957

Hesperia Recreation & Park District
Landscape Plan Submittal Checklist

Planting Plans:

____ Conformance with master plan
____ Maintenance responsibilities defined
____ Concrete header (LMD area project limits and between turf and planters)
____ Trees on approved street tree list
____ Min. street tree spacing distance
____ Site distance: Primary corners
____ Site distance: Secondary corners
____ Cross reference on each sheet for planting legend, details, notes and specifications
____ Details per District landscape guidelines
____ Specifications per District landscape guidelines
____ Legend
- botanical name
- common name
- plant size
- plant quantities
- plant spacing
- plant symbols
- special comments
- tree trunk caliper & canopy diameter

Site Furnishings:

____ Concrete sidewalks (8' wide min.)
____ Playground curbs
____ PVC fencing (at parks and trails)
____ Tubular steel fencing
____ Chain link fencing
____ Chain link backstop & dugouts
____ Trash receptacle
____ Park bench
____ Picnic table
____ ADA picnic table
____ Play structure
____ BBQ
____ Shade structure
____ Swings (required for all playgrounds)
____ Drinking fountain
____ Bleachers
____ Players bench
____ Bat rack
____ Ball field bases
____ Pitching rubber
____ In-field mix
____ Site lighting

Specifications:

____ Meter to master valve specified as brass pipe & fittings
____ Mainline – 2 ½" size or larger, Class 315 PVC; 2" size or smaller, Sch 40 PVC
____ Lateral lines Sch. 40 PVC ¾" minimum size
____ Fittings Sch. 80 PVC for mainlines
____ Fittings Sch. 40 PVC for lateral lines
____ Quick coupler valves
____ Controller/enclosure
____ Remote control valves
____ Valve boxes
____ Wiring - #14 minimum, #12 for over 2500 ft.
____ Wiring - #12 for common wire
____ Depth of cover over piping:
Mainline 2" and larger – 24" minimum
Mainline ¾" – 1 ½" – 18" minimum
Control wires – 18" minimum
Lateral lines – 12" minimum
____ Flush/adjust/coverage test/pressure test @150 PSI for minimum 2 hours

____ Furnish upon request by District Inspector
- 6 extra sprinkler heads for each type and pattern used
- 4 rotary (if used) heads for each type and pattern used
- 2 keys for each controller
- 2 keys for each enclosure lock
- 2 coupler keys w/ hose swivels & hose bib
- 1 coupler lid key
- 1 valve box key
- 1 5' tee wrench for 3" gate valves
- 2 wrenches & screw drivers for adjusting all heads specified

____Record as-built drawings/controller charts

(reduced and mounted in plastic)

____ Plant tablets per manufacturer's recommendations (Agriform Tablets)
____ Inspections (provide 48 hours notice)
Refer to District Landscape guidelines

20.0 Contractor Submittal Checklist

Hesperia Recreation & Park District

HESPERIA
Recreation & Park District
... Serving the Community Since 1957

Submittal Check List

Provide tract number and project name.
Approved submittals must be on job prior to commencement of work and be available for at inspection.

Project Name_____ **Tract #**_____ **Requested Start Date**_____ **Developer**_____

Irrigation

	R	RJ	RR	Date	Approved by
Sleeving					
Type & Size	☐	☐	☐		
Sand bedding/backfill	☐	☐	☐		
Mainline					
PVC piping size & type	☐	☐	☐		
PVC SCH 80 fittings	☐	☐	☐		
Iron ductile fittings	☐	☐	☐		
Restriants	☐	☐	☐		
Brass piping/nipples	☐	☐	☐		
Brass fittings	☐	☐	☐		
Copper piping	☐	☐	☐		
Warning tape	☐	☐	☐		
Wiring					
Type & size	☐	☐	☐		
Wiring colors	☐	☐	☐		
Wire connectors	☐	☐	☐		
Backflow					
Type & size	☐	☐	☐		
Enclosure	☐	☐	☐		
Polar barrier	☐	☐	☐		
Pressure regulator	☐	☐	☐		
Auto Filter					
Quick Coupler Valve					
Type & size	☐	☐	☐		
Brass swing joints	☐	☐	☐		
Isolation valve	☐	☐	☐		
Booster Pump					
Model number	☐	☐	☐		
Piping	☐	☐	☐		
Master Valve					
Size & type	☐	☐	☐		
Conduit and Wire Splice	☐	☐	☐		
Id tag	☐	☐	☐		
Flow Meter					
Size & type	☐	☐	☐		
Conduit and Wire Splice	☐	☐	☐		
Id tag	☐	☐	☐		
Fertilizer Injector					
Size & type	☐	☐	☐		
Installation location (pump enclosure or alone)	☐	☐	☐		

	R	RJ	RR	Date	Approved by
Controller					
Type & size	☐	☐	☐		
Enclosure	☐	☐	☐		
Communications	☐	☐	☐		
Grounding rod	☐	☐	☐		
Radio remote	☐	☐	☐		
Isolation Valve					
Type & size	☐	☐	☐		
PVC SCH 80 fittings	☐	☐	☐		
SCH 80 flanges	☐	☐	☐		
SCH 80 nipples	☐	☐	☐		
SCH 80 unions	☐	☐	☐		
Remote Control Valve					
Type & size	☐	☐	☐		
PVC SCH 80 fittings	☐	☐	☐		
SCH 80 flanges	☐	☐	☐		
SCH 80 nipples	☐	☐	☐		
SCH 80 unions	☐	☐	☐		
Iron Ductile Service Tee	☐	☐	☐		
Id tag	☐	☐	☐		
Low Volume Emitter					
Type, size & GPH	☐	☐	☐		
Flexible risers	☐	☐	☐		
Sprinkler/Bubbler					
Type & size	☐	☐	☐		
PVC swing joint	☐	☐	☐		
Nozzle	☐	☐	☐		
Lateral Line					
PVC piping size & type	☐	☐	☐		
UVR piping	☐	☐	☐		
PVC SCH 40 fittings	☐	☐	☐		
Irrigation (General)					
Rectangle valve boxes	☐	☐	☐		
Jumbo valve boxes	☐	☐	☐		
Round valve boxes	☐	☐	☐		
Verify wire connections	☐	☐	☐		
SCH 40 conduit	☐	☐	☐		
Filter fabric	☐	☐	☐		
Wire mesh	☐	☐	☐		
Flush valves	☐	☐	☐		
Recycled water signs	☐	☐	☐		
PVC cement & primer	☐	☐	☐		

"R" = Review "RJ" = Rejected "RR" = Revise & Re-submit

20.0 Contractor Submittal Checklist (continued)

Planting

	R	RJ	RR	Date	Approved by
Trees					
Types, sizes & quantities	☐	☐	☐		
Height, width & Caliper	☐	☐	☐		
Palms					
Types, sizes & quantities	☐	☐	☐		
BTH, canopy & Caliper	☐	☐	☐		
Shrubs					
Types, sizes & quantities	☐	☐	☐		
Height & spread	☐	☐	☐		
Vines					
Types, sizes & quantities	☐	☐	☐		
Stakes and/or ties	☐	☐	☐		
Groundcover					
Types, sizes & quantities	☐	☐	☐		
Bark mulch	☐	☐	☐		
Decomposed granite	☐	☐	☐		
Sod					
Type & quantities	☐	☐	☐		
Hydro-seed					
Seed mix & application rate	☐	☐	☐		
Fiber application rate	☐	☐	☐		
Binder application rate	☐	☐	☐		
Fertilizer application rate	☐	☐	☐		
Tree Stakes					
Height & Diameter	☐	☐	☐		
Cinch tie and/or twist brace	☐	☐	☐		
Vine Supports					
Anchor and wire	☐	☐	☐		
Twist ties	☐	☐	☐		
Amendments					
Soil report	☐	☐	☐		
Lab recommendations	☐	☐	☐		
Organic amendment	☐	☐	☐		
Imported topsoil (lab test)	☐	☐	☐		
Fertilizer 16-6-8	☐	☐	☐		
Fertilizer 15-15-15	☐	☐	☐		
Fertilizer 6-20-20	☐	☐	☐		
Fertilizer 21-7-14	☐	☐	☐		
Fertilizer (other per lab)	☐	☐	☐		
Gypsum	☐	☐	☐		
Soil sulfur	☐	☐	☐		
Planting tablets NPK	☐	☐	☐		
Herbicides					
Pre emergent (type & application rate)	☐	☐	☐		
Post emergent (type & application rate)	☐	☐	☐		

	R	RJ	RR	Date	Approved by
Planting (General					
Root barrier type & size	☐	☐	☐		
Breather tube	☐	☐	☐		
Filter fabric/sock	☐	☐	☐		
Jute netting	☐	☐	☐		

Construction

	R	RJ	RR	Date	Approved by
Concrete					
Design mix, PSI slump	☐	☐	☐		
Thickness	☐	☐	☐		
Drainage					
Drain pipe	☐	☐	☐		
Drain Wyes	☐	☐	☐		
Drain Elbow	☐	☐	☐		
Drain Reducers	☐	☐	☐		
Catch basins Conc./Plastic	☐	☐	☐		
Filter fabric	☐	☐	☐		
Gravel	☐	☐	☐		
Sand/compost mix	☐	☐	☐		
Amenities					
Removable bollard	☐	☐	☐		
Trash receptacle	☐	☐	☐		
Park bench	☐	☐	☐		
Picnic Table	☐	☐	☐		
BBQ	☐	☐	☐		
Shade structure	☐	☐	☐		
Restroom building	☐	☐	☐		
Backstop	☐	☐	☐		
Player's bench	☐	☐	☐		
Bat rack	☐	☐	☐		
Ball field bases	☐	☐	☐		
Infield mix & sand	☐	☐	☐		
Chain link fencing	☐	☐	☐		
Chain link gates	☐	☐	☐		
Tubular steel fencing	☐	☐	☐		
Tubular steel gates	☐	☐	☐		
Drinking fountain	☐	☐	☐		
Flag pole	☐	☐	☐		
Playground (tot-lot)	☐	☐	☐		
Playground equipment	☐	☐	☐		
Swings	☐	☐	☐		
Trash enclosure	☐	☐	☐		
Lighting					
Light fixtures	☐	☐	☐		
Electrical pedestal	☐	☐	☐		
Electrical panels	☐	☐	☐		

"R" = Review "RJ" = Rejected "RR" = Revise & Re-submit

21.0 Landscape Inspection Card

Hesperia Recreation & Park District

Landscape Inspection Card

Call (760) 244-5488 for 48 hr notice for inspection

Provide tract number and project name when calling for inspection. Approved plans must be on job at time of inspection.

Project Name_____ **Tract #**_____ **Start Date**_____ **Developer**_____

Inspection	Re-inspection If needed	Approval Date	Approved by Inspector
Pre-job conference		_____	_____
Verify approved plans	☐ ☐ ☐		
Verify submittals	☐ ☐ ☐		
Coordinate inspection proc.	☐ ☐ ☐		
Sleeving		_____	_____
Verify sleeving depth, type & size	☐ ☐ ☐		
Verify sleeving separation, bedding	☐ ☐ ☐		
Mainline		_____	_____
Mainline depth, type & size	☐ ☐ ☐		
Mainline connections	☐ ☐ ☐		
Hydrostatic test (150 psi for 3 hrs)	☐ ☐ ☐		
Wiring for size, depth, color (min 14 ga)	☐ ☐ ☐		
Backflow Preventer		_____	_____
Verify backflow cert.	☐ ☐ ☐		
Verify type, size & location	☐ ☐ ☐		
Verify thrust blocks, cage, & pad	☐ ☐ ☐		
Booster Pump		_____	_____
Location/enclosure, Install	☐ ☐ ☐		
Installation/power connect.	☐ ☐ ☐		
Booster pump certification	☐ ☐ ☐		
Irrigation (Open Trench)		_____	_____
Verify lateral line depth, Size, & type	☐ ☐ ☐		
Verify head type, spacing	☐ ☐ ☐		
Verify swing joint assembly	☐ ☐ ☐		
Verify RCV for type & size	☐ ☐ ☐		
Irrigation (General)		_____	_____
Verify box supports, gravel, markings	☐ ☐ ☐		
Verify valve I.D. tags	☐ ☐ ☐		
Verify wire connections	☐ ☐ ☐		
UVR or Sch 80 above ground	☐ ☐ ☐		
Verify pipe & head staking	☐ ☐ ☐		
Controller type/stations	☐ ☐ ☐		
Controller type/stations	☐ ☐ ☐		
Controller certification	☐ ☐ ☐		
Installation/power connection	☐ ☐ ☐		
Verify current as-builts	☐ ☐ ☐		
Fertigation system	☐ ☐ ☐		
Coverage test (100% coverage)	☐ ☐ ☐		

Inspection	Re-inspection If needed	Approval Date	Approved by Inspector
Planting Installation		_____	_____
Weed eradication program	☐ ☐ ☐		
Verify soil amendments/prep	☐ ☐ ☐		
Verify plant species/size/ quantities/location	☐ ☐ ☐		
Verify tree pit depth	☐ ☐ ☐		
Verify root barriers where specified	☐ ☐ ☐		
Verify tree staking/installation/ ties	☐ ☐ ☐		
Finish grade (prior to hydroseed)	☐ ☐ ☐		
Turf installation	☐ ☐ ☐		
Verify hydro-seed species mix/ installation	☐ ☐ ☐		
Hydroseed (100% germination)	☐ ☐ ☐		
Ground cover (95% coverage)	☐ ☐ ☐		
Hardscape/Site Amenities		_____	_____
Site furnishings	☐ ☐ ☐		
Play equipment	☐ ☐ ☐		
Fencing, type/height/material	☐ ☐ ☐		
Walks/curbs/layout	☐ ☐ ☐		
Signage where required	☐ ☐ ☐		
Play equipment certification	☐ ☐ ☐		
Maintenance		_____	_____
Compliance to begin maintenance	☐ ☐ ☐		
Turn over controller charts, as-builts	☐ ☐ ☐		
30 day maintenance walk	☐ ☐ ☐		
60 day maintenance walk	☐ ☐ ☐		
Final maintenance walk	☐ ☐ ☐		
Final Acceptance		_____	_____
Materials to be turned over per specifications	☐ ☐ ☐		
Walk-through inspection with contractor/owner	☐ ☐ ☐		
Landscape architect/inspector	☐ ☐ ☐		
Letter of completion from Landscape architect	☐ ☐ ☐		
Cut sheets/guarantees/ warranties	☐ ☐ ☐		

Other requested/required inspections

_____

_____

No work shall be covered without inspection

22.0 Inspection List

District Inspection List

Call (760) 244-5488 for all inspections

Landscape Construction Inspections:	Notification Time
1. Pre-construction conference	7 days
2. Concrete formwork and sub-grade	48 hours
3. Concrete footings	48 hours
4. Concrete finish and elevations	48 hours
5. Utility trenches	48 hours
6. Drainage trenching/piping	48 hours
7. Final inspection	7 days

Irrigation Inspections:	Notification Time
1. Pre-construction conference	7 days
2. Mainline/valve layout	48 hours
3. Pressure line/wiring installation and testing	48 hours
4. Lateral line and sprinkler installation	48 hours
5. Coverage test	48 hours
6. Final Inspection	7 days

No field inspections will commence unless record drawings are current and available for observation upon request by the Owner's representative.

Planting Inspections:	Notification Time
1. Finish grading	48 hours
2. Soil preparation & weed-abatement	48 hours
3. Tree and shrub layout	48 hours
4. Plant material review	48 hours
5. Tree and shrub planting pits	48 hours
6. Final grade prior to mulching or hydro-seeding	48 hours
7. Final Inspection	7 days

- Contractor must be on site for all inspections.
- Any work not completed when inspector arrives which was requested shall be billed to the contractor at the current non-productive inspection rate.
- Any work completed without inspection or approval shall be uncovered, exposed and/or reviewed at the cost of the contractor.
- All rejected work shall be removed and replaced at the cost of the contractor.

23.0 Approved Plant List

District Approved Plant List

SMALL TREES – Confined Space Areas		
#	**Botanical Name**	**Common Name**
1.	Celtis reticulate	Western Hackberry
2.	Cercis occidentalis	Western Redbud
3.	Chilopsis linearis	Desert Willow
4.	Cordia boissieri	Texas Olive
5.	Cordyline australis	*resembles Joshua tree when mature*
6.	Cotinus species	Smoke Tree, *Deciduous, fall color, also used as a shrub*
7.	Ginkgo biloba	Maidenhair Tree
8.	Gleditsia triancanthos	Sunburst Honey Locust
9.	Kolreteria bipinnata	Chinese Flame Tree
10.	Kolreteria paniculata	Golden Rain Tree
11.	Lagerstromemia indica	Crape Myrtle
12.	Malus species	Crab Apple, *Check for proper variety and location*
13.	Pinus acerfolia	Mondel Pine
14.	Pinus thunbergii	Japanese Black Pine
15.	Pistacia chinensis	Chinese Pistache
16.	Platnus x acerfolia	London Plan Tree
17.	Prosopis chilensis	Chilean Mesquite
18.	Prunus caroliniana	Carolina Laurel Cherry
19.	Prunus cerasifera 'Atropurpurea'	Purple Leaf Plum
20.	Quercus ilex	Holly Oak
21.	Quercus palustris	Pin Oak
22.	Quercus rubra	Red Oak
23.	Quercus suber	Cork Oak
24.	Rhaphiolepis 'Majestic Beauty'	Indian Hawthorn
25.	Robinia vicosa 'Purple Robe'	Purple Robe Locust
26.	X Chitalpa tashkentensis	Chitalpa

23.0 Approved Plant List (continued)

LARGE TREES – Open Space Areas		
#	**Botanical Name**	**Common Name**
1.	Albizia julibrissin	Silk Tree, Mimosa, *caution invasive roots*
2.	Calocedrus decurrens	Incense Cedar
3.	Cedrus atlantica	Blue Atlas Cedar
4.	Cedrus deodora	Deodar Cedar
5.	Cupressus sempervirens	Italian Cypress *columnar evergreen*
6.	Eucalyptus	*species vary from large trees to shrubs, select proper species for site*
7.	Fraxinus velutina	Rio Grande Fan-Tex Ash
8.	Fraxinus velutina rubnun	Red Bud Ash
9.	Fraxinus gregii	Little Leaf Ash
10.	Gymnocladus dioica	Kentucky Coffee Tree
11.	Magnolia grandiflora	Southern Magnolia
12.	Morus alba	White Mulberry
13.	Pinus pinea	Italian Stone Pine
14.	Platanus racemosa	California Sycamore
15.	Ulmus parvifolia	Chinese Elm

PALMS		
#	**Botanical Name**	**Common Name**
1.	Brahea erythea	Mexican Blue Palm
2.	Chamaerops Humilis	Mediterranean Fan Palm
3.	Cycas revoluta	Sago Palm
4.	Trachycarpus fortunei	Windmill Palm
5.	Rhapidophyllum hystrix	Needle Palm
6.	Washingtonia filifera	California Fan Palm

Note: Washingtonia filifera, California Fan Palm, ***may freeze*** in ***coldest years, plant*** *only* ***in spring or summer to let them become established before winter***

SHRUBS		
#	**Botanical Name**	**Common Name**
1.	Abelia grandiflora	Glossy Abelia
2.	Agapanthus species	Lily-of-the-Nile
3.	Allium species	Ornamental Garlic
4.	Atriplex canescens	Saltbush
5.	Baccharis pilularis	Dwarf Coyote Brush
6.	Berberis thunbergii 'Atropurpurea'	Red Leaf Japanese Barberry
7.	Buxus michrophylla japonica	Japanese Boxwood
8.	Calliandra californica	Baja Fairy Duster
9.	Caeslpinia gilliesii	Desert Bird of Paradise
10.	Cercocarpus betuloides	Mountain Mahogany

23.0 Approved Plant List (continued)

11.	Cistus species	Rock Rose
12.	Cordia parivfolia	Little-Leaf Cordia
13.	Coreopsis grandiflora	Tickseed
14.	Cotoneaster species	Cotoneaster
15.	Dasylirion wheelleri	Desert Spoon
16.	Dodonea viscosa 'Purpurea'	Purple Hopseed Bush, *can also be a small tree*
17.	Elaeagnus pungens	Silverberry
18.	Erica carnea varieties	Heath
19.	Euonymus japonicus	Evergreen Euonymus
20.	Hemerocallis species	Daylilly
21.	Ilex x altaclerensis 'Wilsonii'	Wilson Holly
22.	Juniper species	*check location for proper variety*
23.	Lantana species	Lantana
24.	Lavandula angustifloia	English Lavender
25.	Leucophyllum frutescens	Texas Ranger
26.	Ligustrum japonica	Wax-Leaf Privet, *also used as small tree*
27.	Pittosporum tobira	Japanese Mock Orange
28.	Rhaphiolepis indica	Indian Hawthorn
29.	Rhus ovata	Sugar Bush
30.	Rosmarius officialis	Upright Rosemary
31.	Salvia nemorosa 'Ostfriesland'	Sage
32.	Salvia species	Sage
33.	Santolina chamaecyparissus	Lavender Cotton
34.	Senecio cineraria	Dusty Miller
35.	Senna wislizeni	Cassia
36.	Thuja orientalis	Oriental Golden Arborvitae
37.	Thymus species	Thyme
38.	Trachelospermum species	Star Jasmine
39.	Viburnum japonicum	Japanese Viburnum

23.0 Approved Plant List (continued)

District Approved Plant List

GROUNDCOVER		
#	**Botanical Name**	**Common Name**
1.	Achillea species	Yarrow
2.	Ajuga reptans	Carpet Buldge
3.	Alyssum species	Carpet of Snow
4.	Artemisia species	Worm Sage
5.	Baccharis pilularis	Coyote Brush
6.	Cerastium tomentosum	Snow in Summer
7.	Coreopsis species	Tickseed
8.	Dalea greggii	Trailing Indigo Bush
9.	Eschscholzia californica	California Poppy
10.	Festuca idahoensis	Blue Green Fescue
11.	Gazania species	Gazania
12.	Heuchera	Corral Bells
13.	Potentilla neumanniana	Spring Cinquefoil
14.	Rosemarinus officinalis 'Prostratus	Prostrate Rosemary
15.	Salvia greggii	Autumn Sage
16.	Salvia microphylla	Sage
17.	Verbena peruviana*	Verbena, check variety for proper location
18.	Vinca minor*	Dwarf Periwinkle

*For use at tract entrances only.

VINES		
#	**Botanical Name**	**Common Name**
1.	Parthenocissus quinquefolia	Virginia Creeper
2.	Hedera helix	English Ivy
3.	Hadera colchica	Persian Ivy
4.	Parthenocissus tricuspidata	Boston ivy

All listed plant material is subject to approval based on location and use

23.0 Approved Plant List (continued)

District Approved Plant List for Basins

GROUNDCOVER		
#	**Botanical Name**	**Common Name**
1.	Prosopis chilensis	Chilean Mesquite
2.	Pyrus species	Ornamental Pear
3.	Pinus thumbergii	Mondale Pine

LARGE TREES – Open Space Areas		
#	**Botanical Name**	**Common Name**
1.	Pinus pinea	Italian Stone Pine
2.	Albizia julibrissen	Silk Tree
3.	Ulmus parvifolia	Chinese Elm
4.	Morus alba	White Mulberry
5.	Cedrus deodora	Deodar Cedar
6.	Calocedrus decurrens	Incense Cedar
7.	Platanus x acerifloia	London Plane Tree

GROUNDCOVER		
#	**Botanical Name**	**Common Name**
1.	Rosmarinos officnalis Prostratus	Dwarf Rosemary
2.	Baccharis pilularis	Dwarf Coyote Brush

VINES Group in alternating pairs, each planted two feet apart		
#	**Botanical Name**	**Common Name**
1.	Parthenocissus tricuspidata	Boston Ivy
2.	Parhenocissus quinquefolia	Virginia Creeper

HEDGES for Greenwalls		
#	**Botanical Name**	**Common Name**
1.	Ligustrum japonica	Wax Leaf Privet
2.	Buxus michrophylla japonica	Japanese Boxwood
3.	Photinia fraseri	Red Tipped Photina

23.0 Approved Plant List (continued)

SHRUBS		
#	**Botanical Name**	**Common Name**
1.	Abelia grandiflora	Glossy Abelia
2.	Barberis thunbergii 'Atropurpurea'	Red Leaf Japanese Barberry
3.	Ligustrum japonica	Wax Leaf Privet
4.	Rosmarinus officinalis	Upright Rosemary
5.	Buxus machrophylla japonica	Japanese Boxwood
6.	Leucophyllum frutescens	Texas Ranger

NOTE:

All plant material shall be disease and weed free, healthy nursery stock.

The approved plant list does not assume that the plants listed will be right for all situations.

Space, light exposure and many other considerations must be considered to create a beautiful and manageable landscape.

Other plants may be substituted for the plants listed, but must be approved by the District.

Plants should conserve water, be manageable and able to thrive in our unique climate.

Hesperia's climate is influenced by both mountain, desert, and high winds.

Plants that do well in Zone 10 of "Sunset's Western Garden" book are best suited for the area.

24.0 Construction Specifications

LANDSCAPE CONSTRUCTION
Revised 2014

CONSTRUCTION SPECIFICATIONS (GENERAL)

1.0 General Requirements

1.1 "The District" shall be considered Hesperia Recreation & Park District inspection personnel, consultants or other approved team members hereafter.

1.2 Contractor shall obtain and pay for any permits for all structural footings as required by the County of San Bernardino and/or City of Hesperia.

1.3 A Cal-Osha permit is required prior to any excavation greater than 4 feet deep.

1.4 Contractor shall be responsible for notifying all utility companies 2 days prior to any trenching.

1.5 Contractor must provide the District's representative with the Dig Alert number at first inspection.

1.6 The current Standard Landscape Specifications & Design Guidelines booklet must be on site at all times for each project.

1.7 All inspection fees must be paid prior to start of work.

1.8 Contractor shall have and maintain the required license throughout the duration of the work as required by the State of California.

1.9 Substitutions or alternates of any material must be approved a minimum of ten (10) days before bid.

1.10 All work must be performed by a qualified contractor with a minimum of 5 years experience performing similar projects. The District reserves the right to disqualify any contractor that does not meet the qualifications.

1.11 All work shall be performed by contractor specifically licensed for each applicable specialty trade.

1.12 In the event of any contradiction within specifications, details or plans the contractor shall be responsible for compliance with the more stringent standard.

1.13 Labor Code Sections 1720 et seq. and 1770 et seq., as well as California Code of Regulations, Title 8, Section 16000 et seq. ("Prevailing Wage Laws"), require the payment of prevailing wage rates and the performance of other requirements on certain "public works" and "maintenance" projects. If this Project involves an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Developer agrees to fully comply with such Prevailing Wage Laws. The Developer shall defend, indemnify and hold the District, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

2.0 Scope of Work

2.1 The intent of the drawings and specifications is to indicate the process required for the installation of a complete project, satisfactory to the District and applicable regulatory agencies.

2.2 The work consists of furnishing all tools, equipment, material, transportation, labor and any processes required to provide a complete project as specified in the drawings and specifications.

2.3 Drawings are diagrammatic and must be field verified. Contractor must notify the architect and the District immediately of any discrepancies prior to starting work. Continued work without notification of any discrepancy between plans and/or field conditions by contractor is considered by the District as acknowledgement that contractor agrees to take responsibility for all necessary adjustments required to comply with District requirements.

2.4 All work indicated in the specifications, details, notes or plans shall be provided and installed whether or not specifically mentioned in the specifications. It shall be understood that if an item is shown in specifications but not shown on the plan it shall be as if shown on both and if an item is shown on plan but not shown in the specifications it shall be as if shown on both. The District shall have final authority for any and all requirements.

2.5 Due to the scale of the drawings it is not possible to show all assemblies, hardware, etc. for a complete construction of all items whether shown or not.

2.6 Contractor shall provide all necessary assemblies, hardware, etc. to provide a complete installation as listed in drawings and specifications with no additional cost to the District.

2.7 The work shall be performed in such a manner as to not conflict with any known obstructions. Contractor shall notify the District of any conflict. Contractor shall assume full responsibility for any modification or revision required in the event that no notification was given to the District.

3.0 Quality Control

3.1 Contractor must provide one competent English speaking employee capable of understanding and communicating with District personnel on site at all times throughout the duration of the work.

3.2 Contractor must have a project foreman with a minimum of three (3) years experience that is familiar with all types of material being used and installation methods for all work performed on similar projects under this section.

3.3 In the event that no specifications or details are provided for any items shown on the plans, the manufacturer’s directions, specifications and/or details shall be followed.

3.4 District specifications and/or details shall always take precedence over manufacturer’s specifications or recommendations.

3.5 All local, county and state laws, rules and regulations related to any portion of work shall be incorporated within these specifications and adhered to throughout the duration of work. Nothing contained within these specifications shall be construed to conflict with said rules and regulations.

3.6 The provisions of these specifications shall take precedence over the said rules and regulations in the event that these specifications indicate a higher quality or better standard.

3.7 Any extra work performed shall be approved in writing by the District or District's representative prior to the start of such work.

3.8 Any unapproved work must be corrected at the contractor's expense.

3.9 All material and labor shall be free from any defects. Any defective work must be corrected immediately without additional cost to the District.

3.10 In the event of conflict between plans and specifications, the specifications shall take precedence. No additional compensation shall be considered for direction given by District personnel providing clarification to specifications in the event of conflict between plans and specifications.

3.11 No additional compensation shall be given as a result of any District generated punch list item or correction notice given to contractor in order to comply with specifications.

4.0 Submittals

4.1 7 days prior to pre-construction conference and prior to ordering irrigation materials, contractor must submit to the District a complete detailed list of all construction item components to be used per plan and District specifications.

4.2 Any substitutions that are not per plan or District specifications must be submitted on a separate cover sheet clearly identified as “Construction Item Submittal Substitutes”. Any material that may be thought as equal by contractor will be determined solely by the District and shall also be based upon the required material consistency throughout the District. All proposed submittals shall be submitted for District 14 days prior to pre-construction conference. Substitution shall not be approved unless submitted as outlined.

4.3 Submittals shall include but not be limited to the following:

a. Title sheet indicating job name, contractor name, address, phone number, date of submittal and submittal number.

b. Index sheet indicating item number for each item, description of each item, manufacturer name and model number and the page that item is within the submittal.

c. Manufacturer cut sheet of each item providing manufacturer address and phone number, warrantee information, all available model numbers and all available graphic illustrations of item.

d. Each model number to be used shall be circled or marked and highlighted to indicate exact model number, size, type and options to be used.

4.4 Submittals shall be submitted complete and be bound in a manner to allow disassembly for review, processing and digital archiving.

4.5 The District shall return without review any submittal that does not comply with the above mentioned format.

4.6 Three sets of submittals are required to be submitted. The District will retain two sets for record and inspection.

5.0 Record Drawings

5.1 Record accurately on one set of black and white prints denoting variation in work from original drawings.

5.2 Dimensions shall be taken from two permanent points of reference including but not limited to sidewalks, pavement, curbs, street lights, buildings, fire hydrants and shall be recorded on

as-builts daily or as work is performed. All drafting must be clearly legible and dimensions shall be no smaller the 1/4" in size.

5.3 For parkways, all second point of reference dimensions must be taken from face of curb when ever possible.

5.4 Show dimensions from the following locations:

a. Point of connection (P.O.C.).

b. Backflow prevention assembly.

c. Routing of potable pressure mainlines and all directional changes.

d. Routing of electrical wiring and conduits including data and telephone.

e. Gas lines.

f. Storm drain lines.

g. Other related underground utilities (as directed by the District).

5.5 Maintain as-built drawings on site at all times. As-built drawings are subject to inspection at any time.

5.6 Make changes to reproducible drawings in ink (no ball-point pen). Erase or use eradicating fluid as needed when revising drawings. Make changes in a manner equal to the original drawings.

5.7 Contractor must submit as-built drawings (sepia mylars and two bond hard copies) to the District prior to the start of the maintenance period for approval.

5.8 As-built measurements must be transferred to an AutoCAD .dwg and Adobe Acrobat .pdf digital file by the Landscape Architect or qualified draftsman prior to turn-over. All site lines must be black, utilities must be red and dimensions must be blue.

5.9 Upon completion and approval of record drawings, transfer all information to reproducible mylars and provide two additional bond hard copies.

5.10 Field as-builts must be completed and ready for review at time of inspection for any backfill approval. No trenches will be allowed to be backfilled until field as-builts are reviewed and are deemed acceptable to be transferred to final record drawings.

6.0 Operation and Maintenance Manuals

6.1 Prepare and deliver to the District, prior to the start of maintenance, all required descriptive materials in complete detail prepared in four individually bound copies. Describe the material installed in sufficient detail to permit qualified operating personnel to understand, operate and maintain all equipment. Each manual shall include the following:

a. Index sheet, stating contractor's address and telephone number.

b. Duration of guarantee period with guarantee forms.

c. List of equipment with names and addresses of manufacturer's local representatives.

d. Complete operating and maintenance instructions on all major equipment.

7.0 Inspections

7.1 The contractor shall allow the District to inspect the project at any time throughout the duration of the project and shall provide safe access to all areas of the project.

7.2 No work shall be covered without inspection for all items listed in this section and any other items specifically requested by the District.

7.3 The District requires inspection for all work listed below including but not limited to the following:

	Landscape Construction Inspections:	**Notification Time**
a.	Pre-construction conference	7 days
b.	Concrete formwork and sub-grade	48 hours
c.	Concrete footings	48 hours
d.	Concrete finish and elevations	48 hours
e.	Utility trenches	48 hours
f.	Drainage trenching/piping	48 hours
g.	Final inspection	7 days

7.4 Refer to *Sections 25.0 Irrigation Specifications, Section 26.0 Planting Specifications,* and *27.0 Maintenance Specifications* for required irrigation, planting and maintenance inspections.

7.5 Contractor must be on site for all inspections.

7.6 Any work not completed when inspector arrives, which was requested to be inspected, shall be billed to the contractor at the current non-productive inspection rate.

7.7 Any work completed without inspection or approval shall be uncovered or exposed as deemed necessary by the District in order to be reviewed. Said work shall be at the cost of the contractor with no additional cost to the District.

7.8 All rejected work shall be removed and replaced at the cost of the contractor with no additional cost to the District.

7.9 Contractor shall schedule all inspections by calling (760) 244-5488.

7.10 A copy of the allocated inspection quantities and associated cost that is based on each project size and type is available from the District for review.

LANDSCAPE CONSTRUCTION (MATERIALS)

8.0 Concrete Flatwork

8.1 Cement shall be Portland cement standard brand type I or II in compliance with ASTM C-150.

8.2 Aggregates shall be aggregate hard rock in compliance with ATSM C-33. Aggregates shall be class II with a maximum of 3/8" in diameter.

8.3 Sand shall be natural, strong and durable washed, not containing more than 2% of shale, clay or other harmful material, free of impurities.

8.4 Water shall be potable; free from harmful levels of alkali, acid or salt.

8.5 Rebar shall be Grade 40 and in compliance with ASTM A-615.

8.6 Integral pigment shall be iron oxide plain concrete.

8.7 Curing compound shall be used for all flatwork and curbs.

8.8 Expansion joints shall be asphalt impregnated fiberboard 3/8" thick minimum. When caulking is specified on the plans a plastic or foam break-away strip shall be used.

9.0 CONCRETE SPECIFICATION: EXECUTION

9.1 Prior to placement of concrete the sub-grade shall be compacted using a tamp or roller. Sub-grade shall be compacted to 90% density unless otherwise noted. Concrete shall be 4 inch minimum thickness.

9.2 Sand base shall have a depth as specified in District details. Sand base shall be mechanically compacted to a smooth surface and watered after completion. Compaction test shall be performed by a qualified approved soil compaction testing personnel.

9.3 Forms shall be Douglas Fir or equal with a minimum height of 3½ inches. Forms shall have a smooth texture, straight upper edge.

a. Forms shall be adequate thickness to support the concrete without bending. Thin planks can be used for radius curves and supported as needed to prevent bending. No bender board shall be allowed.

b. Forms shall not vary from vertical grade by more than 0.02' in 10' and from horizontal alignment by more than 6". Fill dirt may be required to be placed against the forms to eliminate bulging when concrete is poured.

c. All forms shall be protected in place for a period of 12 hours minimum with the exception of vertical curbs. Forms for vertical curbs shall be removed when required to provide a consistent finish per plan without any concrete movement.

d. All forms shall be clean and coated to prevent the concrete from adhering to forms.

e. All forms shall be held in place with steel or wood stakes as required.

9.4 Rebar

a. Rebar shall be as specified in drawings.

b. Rebar shall be clean, free of rust, oil and grease.

c. Rebar shall be secured together at intersections with 16-gauge wire.

d. Rebar shall be supported with pre-cast mortar blocks or other approved spacers at 4' spacing. Pre-cast mortar blocks shall be 2"x2" for 4" thick concrete and 3"x3" for 6" thick concrete per District detail.

e. Rebar shall be supported in a manner to support foot traffic and concrete pouring without displacement.

f. Rebar welding when specified shall be performed by a qualified welder in compliance with the American Welding Society's recommendations for welding reinforcing steel. (AWSD 12.1) latest edition.

g. Existing reinforcing rebar, which is connected to new reinforcing rebar, shall be cleaned to remove any dirt, rust, oil or grease.

h. Rebar shall be at 4 foot minimum spacing.

9.5 Concrete mixing shall be in compliance with ASTM C-94 and shall consist of the following:

a. 6 sacks of Portland cement per cubic yard.

b. 6-3/4 gallons of water per sack of cement maximum.

c. Slump, 2 to 5 inches of concrete shall fall in globs from chute. Any soupy mixtures shall not be accepted.

d. Mixing strength for footings, curbs and flat work shall be 2,500 pounds per square inch @ 28 days.

e. Concrete mixed in a transit mixer shall be mixed for a period of 10 minutes minimum at a peripheral drum speed of 200 feet per minute.

f. Concrete color shall be standard gray unless otherwise specified.

9.6 All existing trees, shrubs, groundcovers, hardscaping and structures within the limits of work specified shall be protected.

9.7 Weather Conditions

a. No concrete shall be poured or finished when rain is apparent.

b. No concrete paving shall commence during rainfall or unless air temperature is 50°F and increasing unless previously approved in writing. No request will be reviewed unless contractor submits a program for cold weather pouring. Report shall be based on ACI Standards.

c. No concrete shall be mixed or poured when the temperature is below 40°F or when conditions indicate that the temperature will fall below 40°F within 72 hours. Concrete when deposited shall have a temperature of not less than 60°F. Reinforcements, forms, and ground of which concrete will come in contact with shall be completely free of frost.

9.8 Pouring

a. Prior to placement of concrete, all tools and equipment used for mixing and conveying shall be cleaned. All forms must be wet and entire area where concrete will be placed must be cleaned.

b. Concrete pouring shall be carried on, as a continuous operation until the areas of approved size is complete. Cut off locations shall be approved and shall never end on a driveway.

c. Concrete shall be handled as rapidly as practical from the mixer to the place of final deposit by methods which prevent the separation or loss of material. It shall be deposited as nearly as practical, in its final position to avoid re-handling or flowing.

Concrete shall not be dropped freely more than six feet. Concrete that has partially hardened shall not be deposited in the work. The discharge of concrete shall be started not more than 45 minutes after the introduction of mixing water. Placing of concrete shall be completed within 90 minutes of the first introduction of water into the mix. It shall not be reworked.

d. In pouring columns, walls or thin sections of considerable heights, openings in the forms, elephant trunks or other approved devices shall be used which will permit the concrete to be placed without segregation and the accumulation of hardened concrete on the forms or metal reinforcement above the level of the concrete. Such devices shall be installed so the concrete will be dropped vertically. At least two hours must elapse after depositing concrete in wall or columns before depositing concrete in heads over openings, supported beams, girders or slabs.

e. All concrete shall be thoroughly agitated using approved mechanical vibrators. Internal vibration must be by direct action in the concrete and not against forms or reinforcement. Each pour shall be vibrated until the water shows indications of rising, but not until the water has risen.

f. Along the faces of the forms, suitable tools shall be used during the pour to force large particles away from the forms and bring mortar to the surface of the forms. In addition, when approved by the District's representative, external form vibration may be used. The responsibility for providing fully filled out, smooth, clean and properly aligned surfaces free from objectionable pockets and blemishes shall rest entirely upon the contractor.

g. Slabs shall be tamped to depress the rock and push floated with a float as necessary. Care shall be taken at all times so that the wet slab meets the screeds accurately and does not rise above or settle below required grade.

h. When the slab is indicated as being poured directly on an earth construction pad without rock fill, proceed as follows: Although the construction pad was made level within 0.10 of a foot, it is assumed that by the time all the excavation for footings and utility trenches is completed, the surface will be considerably disturbed. Therefore, it shall be bladed off and brought to an accurate level compacted to a smooth, true surface. This level shall be thoroughly re-leveled before each day's pour and thoroughly wet down, but not flooded.

i. Cast in place concrete foundation piers shall be poured into undisturbed pier holds. Casing should be placed where walls of the pier holes show instability. Casing should be withdrawn gradually as pour proceeds. Where ground water occurs in the pier hole, it should be pumped dry before pour by tremie method.

9.9 Construction Joints

Locations of construction joints shall be as indicated on the plans and District details. Joints shall be made and located as not to impair strength of the structure. Review all locations of construction joints with the District's representative before blocking out the pours.

a. Large slabs poured on grade shall be limited to 10 ft x 10 ft. between construction joints, or as shown on the details and as approved by the District's representative. Pathways shall have control joints equal to the width but not greater than 10 ft. In general, lines of joints shall follow column lines, fence posts or permanent walls. Construction and control joints shall be tooled with a 3/4" radius edge tool on both sides of the joint. Joints shall be straight, true and level. Control joints shall be ¼" wide by ¾" deep minimum.

b. All control joints shall be saw cut to a depth of 1-1/2".

9.10 Finishing

Finish shall be as specified on the plans and details.
After concrete has been troweled to a smooth finish following lines and grades shown on the drawings, one of the following finishes shall be executed:

a. Broom: Draw broom across the surface at 90° to direction of traffic in a continuous motion from score mark to score mark or edge to edge. The degree of texture – light, medium or heavy broom – will be specified on the drawings. Broom marks shall be neat, parallel and uniform in texture throughout.

b. Washed aggregate finish: Evenly expose aggregate by water washing and brushing or other approved means to an average depth of 1/8 inch. Pocketing or kicking out of aggregate will not be accepted.

c. Finish shall be uniform throughout in color, texture and degree of exposure.

9.11 Protections

Concrete surfaces shall be protected from the elements, defacement and traffic during construction operations by whatever means necessary without additional cost to the District.

9.12 Defects

If any concrete work is not formed as indicated, is under-strength concrete, concrete out of line, level, plumb, or showing objectionable cracks, honeycomb, rock pockets, voids, spalling, exposed reinforcing or have scratched or scrapes, it shall be removed and replaced as directed by the District's representative. No repairs by filling or patching shall be allowed unless approved by District in writing. All repairs are subject to replacement if deemed to be unacceptable by the District.

a. Defects in concrete work approved to be repaired shall be as directed by the District. Voids shall be chipped to a depth of at least one (1) inch or to remove all loose material with the edges perpendicular to the surface and parallel of form markings. Voids, surface irregularities, chipped areas, etc. shall be filled by patching as directed by the District and shall be done at the contractor's expense. Repaired surfaces shall duplicate the appearance of the unpatched work. Prepare a sample of a repaired condition for approval before proceeding with all of the repair work.

9.13 Grading

The contractor shall complete grading and filling as needed and remove all rocks and debris. Sub-grading preparation shall be in accordance with local governing agencies.
Prior to commencing any work the contractor shall carefully check all grades and verify that after all irrigation work and soil preparation completed, all grades will be per specified depth as per the landscape contractor's scope of work within +-.10 of a foot. Where concrete is adjacent to a planter the planter sub-grade shall be 4 inches below the top of concrete.

9.14 Clean-Up

Clean up shall take place on a daily basis, after each portion of work has been completed and as directed by the District's representative. The contractor shall legally remove from site any trash or unused material from the project.

9.15 Final Approval

All concrete paving shall be inspected in its entirety by the District's representative and must be approved by the District in writing.

10.0 Concrete Mow Curb

10.1 All mowcurb concrete shall conform to concrete flat work *Section 9.0*.

10.2 Concrete mow curb shall be a minimum of 2500 PSI concrete and as specified on District details.

10.3 All mowcurb shall be 6” x 8” with #4 continuous rebar. Rebar shall be centered within mowcurb both directions and shall not be within 2 inches of edge of concrete.

10.4 All mowcurbs must be formed and poured in place. Mowcurb extrusion with dry mix material shall not be allowed.

10.5 All forms shall be consistent in grade and maintain a 6” minimum height and 6” minimum width.

10.6 Mowcurbs shall be depressed when needed when installed across any flow line to prevent ponding as directed by the District.

10.7 All control and expansion joints shall be installed per District detail spacing.

10.8 All cold joints shall be secured with rebar per District detail.

11.0 Play Area Curbs and Ramps

11.1 All play area curb concrete shall conform to concrete flat work section 9.0.

11.2 All play area curbs shall be a minimum of 2500 PSI concrete and as specified on District detail.

11.3 All play area curbs shall be 12” wide x 20” deep with three #4 continuous rebars. All rebar shall be centered within play area curb and shall not be within 2 inches of edge of concrete.

11.4 All play area curbs must be formed and poured in place. Mowcurb extrusion with dry mix material shall not be allowed.

11.5 All forms shall be consistent in grade.

11.6 All control and expansion joints shall be installed per District detail spacing.

11.7 All cold joints shall be secured with rebar per District detail.

11.8 Play area ramps shall comply with ADA requirements.

11.9 Play area ramps shall have a slope not greater than 16:1 (6.25%) and shall have flared sides with 10:1 (10%) max. elevation change.

11.10 All edges of concrete ramp adjacent to wood fibar shall have a tapered bullnose per District detail.

12.0 Concrete Footings

12.1 Contractor shall be responsible for securing all required permits as required by the County of San Bernardino and/or City of Hesperia.

12.2 All concrete footings shall be inspected by the District prior to pouring.

12.3 All steel reinforcement bars shall be in place at time of inspection. Rebar must be properly supported and tied to maintain its position during concrete placement operations through the use of wire ties and spacers. Rocks, wood blocks, or other unapproved material shall not be used as support for reinforcement. Wire tie ends shall be twisted away from concrete surfaces. Rebar overlap shall be 12 inches minimum.

12.4 Adding water to the surface of the concrete during finishing activities and overworking the concrete shall not be permitted to avoid lowering water/cement ratio and thereby lowering strength in the top layer which later can be more susceptible to spalling.

12.5 All footings shall be installed per plan and/or manufacturer's guidelines.

12.6 Footings for support posts shall be poured at the required depth but shall be low enough to accommodate form boards when mowcurbs are required.

12.7 Footings for shade structures, backstops, sports and parking lot lighting shall be designed by a structural engineer licensed in the State of California.

13.0 CMU Block

13.1 CMU block when used for trash enclosures or garden walls shall be structural split-face concrete masonry units with integral color. CMU block for tract boundary walls and retaining walls shall be as selected by the structural engineer and as approved by the County of San Bernardino and/or City of Hesperia. All block walls to be maintained by the District shall be split-face with an integral color to match community theme.

13.2 All structural units shall conform to ASTM C90, specification of load bearing masonry units medium weight and the latest editions of ACI 530, and chapter 21 of the California Building Code (CBC) and the International Building Code (IBC)

13.3 Unless otherwise approved all CMU block shall be 8" wide and 8" tall.

14.0 Chain link

14.1 Fencing Chain link fencing shall be 6' minimum height unless otherwise approved by the District.

14.2 Line Post shall be a minimum size of 2-3/8" schedule 40 galvanized pipe. Terminal posts shall be a minimum size of 2-7/8". Top rail shall be a minimum size of 1-5/8".

14.3 Gate frames shall be a minimum size of 1-5/8" schedule 40 galvanized pipes. Gate frames shall be welded and hinges to be tack welded.

14.4 All pipe shall be schedule 40 or equal (SS40, DQ40, or WT40).

14.5 Concrete terminal post footing shall be 36" deep by 12" wide and line posts footing shall be 30" deep and 10" wide.

14.6 A 16' sliding or double swing gate shall be required. Gate posts shall be 2 7/8" diameter with 12"x36" footing for all gate leafs up to 6' wide. Gate leafs larger than 6' wide shall be 4" diameter with 12"x36' footing. All swing gates shall comply with City of Hesperia specifications.

14.7 Chain link fabric shall be galvanized (zinc) coated chain link for commercial applications conforming to ASTM A392. Fabric size shall be 2" mesh. Fabric thickness shall be 9 gauge.

14.8 Chain link framework shall be galvanized steel for commercial use conforming to ASTM F1043 and ASTM F1083.

14.9 Steel pipe shall be SCH 40 cold formed electric resistance welded complying with ASTM F1043 Group IC having minimum steel yield strength of 50,000 psi (344 MPa). External protective coating F1043 Type B, 0.9 oz/ft² (270 g/m²) minimum hot-dip zinc coating plus a chromate conversion and a clear polymer coating. Internal coating F1043 Type D, 81% nominal zinc pigmented coating minimum 3 mils (0.0076 mm) thick or Type B, minimum 0.9 oz/ft² (275 g/m²) zinc. Steel pipe sizes shall be as indicated in District details.

14.10 Chain link accessories shall be with galvanized steel framework for commercial use.

14.11 Post caps shall conform to ASTM F626 galvanized pressed steel, malleable iron, or aluminum alloy weather tight closure cap for tubular posts. Provide one cap for each post.

14.12 Rail ends shall be galvanized pressed steel per ASTM F626, for connection of rails to post using a brace band.

14.13 Top rail sleeves shall be 6” galvanized steel sleeve per ASTM F62614.14

14.14 Wire ties shall be 9 gauge (0.148”) (3.76 mm) galvanized steel wire for attachment of fabric to line posts and rails. Pre-formed hog ring ties to be 9 gauge (0.148”) (3.76 mm) galvanized steel or aluminum for attachment of fabric to tension wire. Tie wire and hog rings per ASTM F626.

14.15 Tension wire shall conform to ASTM A824 Type II, zinc coated (galvanized) steel wire, 7 gauge, (0.177”) (4.50 mm) diameter wire having a tensile strength of 75,000 psi (517 MPa). Hog rings shall be 9 gauge.

14.16 Brace and tension (stretcher bar) bands shall conform to ASTM F626 galvanized 12 gauge (0.105”) (2.67mm) pressed steel by 3/4” (19mm) formed to a minimum 300 degree profile curvature for post attachment. Secure bands using minimum 5/16” (7.94 mm) galvanized carriage bolt and nut.

14.17 Tension (stretcher) bars shall be galvanized steel one piece length equal to 2 inches (50 mm) less than full height of fabric with a minimum cross-section of 3/16” x 3/4” (4.76 mm x 19 mm) per ASTM F626. Provide tension (stretcher) bars where chain link fabric is secured to the terminal post.

14.18 Truss rod assembly shall be galvanized steel minimum 5/16” (7.9mm) diameter truss rod with pressed steel tightener, in accordance with ASTM F626.

14.19 Swing gates shall be chain link fabricated in accordance with ASTM F900. Gate frame to be of welded construction. Weld areas to be protected with zinc-rich paint per ASTM A780. The gate frame members are to be spaced no greater than 8’ 0” (2.44 m) apart horizontally or vertically. Exterior members to be 1.900” (48.3 mm) OD pipe, interior members when required shall be 1.660” (42.2 mm) OD pipe. Pipe to be [Grade 1 ASTM F1083] [Grade 2 ASTM F1043 Group IC] per section 2.03. Chain link fabric to match specification of fence system. Fabric to be stretched tightly and secured to vertical outer frame members using tension bar and tension bands spaced 12” (304.8 mm) on center and tied to the horizontal and interior members 12” (304.8 mm) on center using 9 gauge galvanized steel ties per section 2.04.

14.20 Hinges shall be hot dip galvanized pressed steel or malleable iron, structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180° (3.14 rad).

14.21 Latches shall be galvanized forked type capable of retaining gate in closed position and have provision for padlock. Latch shall permit operation from either side of gate.

14.22 Double gates must have a galvanized drop rod with center gate stop pipe or receiver to secure inactive leaf in the closed position. Provide galvanized pressed steel locking latch, requiring one padlock for locking both gate leaves, accessible from either side.

14.23 Gate holdback shall be galvanized gate hold back for each gate leaf over 5' (1524 mm) wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position.

14.24 Concrete footings shall be 2500 PSI @ 28 days. Footings shall be as indicated within the District details.

14.25 All chain link fencing shall have a maintenance concrete mowcurb between each post per District detail unless approved by the District. Footing height shall allow for mow curb form boards to avoid breaking post footings in order to form and pour mowcurb.

14.26 Contractor shall be responsible for all permits and inspections required by the County of San Bernardino and/or City of Hesperia.

14.27 Install chain link fence system in accordance with ASTM F567. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30° or more.

14.28 Space line posts uniformly 8' on center [maximum 10'on center] as determined by wind load post selection calculations.

14.29 Footings for concrete set posts shall be excavated in firm, undisturbed or compacted soil. Holes shall have diameter a minimum of 4 times greater than the rounded outside dimension of post, and depths approximately 4" deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom a minimum of 18" below surface when in firm, undisturbed soil. Place concrete around posts in a continuous pour. Trowel finish around post and slope to direct water away from posts. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.

14.30 Install horizontal brace and truss assemblies at mid-height or above for fences over 6' at each fabric connection to the terminal post. The diagonal truss rod is installed at the point where the brace rail is attached to the terminal post and diagonally down to the bottom of the adjacent line post. Place the truss rod in tension by adjusting the turnbuckle.

14.31 Top, center and bottom rails are required on all fences for parks and other active projects per District details.

14.32 Top rails shall be installed in lengths of 21'. Connect ends with sleeves forming a rigid connection, allow for expansion and contraction.

14.33 Center rails shall be installed between line posts and attached to posts using rail end or line rail clamps. A center rail is required for fabric height 8' and over.

14.34 Bottom rails shall be installed for all fencing between posts and attached to post using rail end or line rail clamps.

14.35 Install fabric on security side unless used for tennis courts, pull fabric taut; thread the tension bar through fabric and attach to terminal posts with tension bands spaced maximum of 15" on center and attach so that fabric remains under tension after pulling force is released. Secure fabric using wire ties to line posts at 15" on center and to rails and braces 24" on center, and to the tension wire using hog rings 24" on center. Tie wire shall be secured to the fabric by wrapping it two 360 degree turns around the chain link wire pickets. Cut off any excess wire and bend back so as not to protrude so as to avoid injury if a pedestrian may come in contact with the fence.

14.36 Installation of swing gates and gate posts shall be per ASTM F567. Direction of swing shall be as shown on drawings. Gates shall be hung plumb in the closed position with minimal space from grade to bottom of gate leaf. Double gate drop bar receiver shall be set in a minimum concrete footing 6" diameter by 24" deep. Gate leaf holdbacks shall be installed on all double gates and all gate leafs greater than 5' in width.

15.0 PVC Fencing

15.1 General

This section includes the following:

a. Polyvinyl chloride (PVC) fence and gate components

b. Gate hardware

c. Reinforcing steel for concrete-filled, reinforced fence posts

d. Concrete for post footings and for concrete filled reinforced fence posts

15.2 Definitions

a. Posts are the vertical structure support members of the fence.

b. Rails are the horizontal structural support members of the fence or gate frame.

c. Gate Uprights are the vertical structural support members of the gate frame.

15.3 Submittals

Submit the following according to the general submittal requirements:

a. Product Data: In the form of manufacturer's technical data, specifications, and installations for fence, posts, gate uprights, post caps, gates, gate hardware and accessories. Samples for verification of PVC color in form of 3-inch lengths of actual product to be used in color selection.

b. Shop Drawings showing fence design.

15.4 Quality Assurance

Installer shall be experienced personnel who has at least three years experience and has completed at least five PVC fence projects with same material and of similar scope to that indicated for this project with a successful construction record of in-service performance.

Single - Source Responsibility: Obtain PVC fences and gates, including accessories, fittings, and fastenings, from a single source.

15.5 Project Conditions

Field Measurements: Verify layout information for fences and gates shown on the drawings in relation to the property survey and existing structures. Verify dimensions by field measurements.

15.6 Warranty

Manufacturer's Warranty: Lifetime non-prorated limited warranty applies to original homeowner/consumer, or 30 year non-prorated limited warranty applies to commercial applications.

15.7 Fence Materials

Style 1: Diamond 2 Rail Fence Smooth

Available from Kroy Products through Fence Works (800) 350-5620 or equivalent

Style 2: Standard 3 Rail Fence Smooth
Certainteed Selects™ available from J&W Redwood (951) 698-0215 or equivalent

15.8 Polyvinyl Chloride (PVC) Fence Components

Posts, rails, gate uprights, post caps, and accessories shall be of high impact, Ultra Violet (U.V.) resistant, rigid PVC, and shall comply with ASTM D1784, Class 14344B.

15.9 Fence Posts: One piece extruded, of lengths indicated and pre-routed to receive rails at spacing indicated.

a. Cross Section: 5" x 5" minimum.

b. Wall Thickness: 0.135" minimum.

c. Corner Radius: 3/8" R minimum.

d. Rails: One piece extruded, of lengths indicated.

e. Small Rail – Ribbed Extrusions

f. Wall Thickness: 0.120" minimum.

g. Corner Radius: 11/32" R minimum.

15.10 Gate Uprights: One piece extruded, of lengths indicated.

a. Cross Section: 4" x 4" minimum.

b. Wall Thickness: 0.140" minimum.

c. Corner Radius: 11/32" R minimum.

15.11 Post Caps: Molded, one piece

a. Cross Section: Match post or gate upright cross section.

b. Thickness: 0.095" minimum.

c. Configuration: Flat or four-sided pyramid design, with cross section sized as required for installation to top of posts and gate uprights. Form post caps as required for concealed attachment to tops of posts and gate uprights.

15.12 Miscellaneous Materials

a. Fasteners and Anchorage: Stainless Steel. Provide sizes as recommended by fence manufacturer.

b. PVC Cement: As recommended by fence manufacturer.

15.13 Rail Plugs: Manufacturer's standard duct tape to prevent seepage at concrete filled posts.

15.14 Gate Hardware and Accessories

Provide hardware and accessories for each gate according to the following requirements:

15.15 Hinges:

Size and material to suit gate size, lift-off type stainless steel and adjustable, offset to permit 120 degree gate opening. Provide one pair of hinges for each gate.
Finish: Pre painted, 2 coats "Polane"
Color: Black
Latch: Manufacturers' standard self latching, stainless steel latch. Provide one latch per gate.
Finish: Match gate hinge finish.
Hardware: Stainless Steel. Provide sizes as recommended by fence manufacturer.
Finish: Match gate hinge finish.

15.16 Concrete

Provide concrete consisting of Portland cement per ASTM C 150, aggregates per ASTM C 33, and potable water.

a. Mix materials to obtain concrete with a minimum 28-day compressive strength of 2500 psi. Use at least four sacks of cement per cubic yard, 1-inch maximum size aggregate, 3-inch maximum slump. Use 1/2 inch maximum size aggregate in post where required.

b. Packaged Concrete Mix: Mix dry-packaged normal- weight concrete conforming to ASTM C 387 with clean water to obtain a 2 to 3 inch slump.

15.17 Installation

Install fence in compliance with manufacturer's written instructions. During installation, PVC components shall be carefully handled and stored to avoid contact with abrasive surfaces. Install components in sequence as recommended by fence manufacturer. Install fencing as indicated on the drawings provided. Variations from the installation indicated must be approved. Variations from the fence and gate installation indicated and all costs for removal and replacement will be the responsibility of the contractor.

Drill or hand-excavate (using post hole digger) holes for posts to diameters and spacings indicated, in firm, undisturbed or compacted soil. If not indicated on drawings, excavate holes for each post to a minimum diameter of 10" inches. Unless otherwise indicated, excavate hole depths not less than 30 inches or to frost line.

Install posts in one piece, plumb and in line. Space a maximum of 8 feet O.C. unless otherwise indicated. Enlarge excavation as required to provide clearance indicated between post and side of excavation. Protect portion of posts above ground from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment and hold in position during placement and finishing operations. Terminate top of concrete footings per District detail. Secure posts in position for manufacturers' recommendations until concrete sets. After installation of rails and unless otherwise indicated, install reinforcing in posts in opposing corners of post as shown and fill end and gate posts with concrete to level as indicated. Concrete fill shall completely cover the reinforcing steel and gate hardware fasteners. Consolidate the concrete by striking the post face with a rubber mallet, carefully tamping around the exposed post bottom.
Install post caps. Use #8 screws, nylon washers and snap caps. Remove concrete splatters from PVC fence materials with care to avoid scratching.

Install rails in one piece between post and into routed hole fabricated into posts to receive rails where necessary. Stagger rail ends in posts. Except at sloping terrain, install rails level, centered on posts.

Nylon lock or notched rings inserted into ends of rails to secure in post. At posts to receive concrete fill, plug ends of rails with duct tape to prevent seepage when filling post with

concrete. Fence Installation at Sloping Terrain: At sloping terrain rails may be racked (sloped) or stepped to comply with manufacturers' recommendations.

Prior to installation of rails into gate upright, apply PVC cement into sockets per manufacturer's recommendations. Assemble gate prior to fence installation to accurately locate hinge and latch post. Align gate horizontal rails with fence horizontal rails. Install gates plumb, level, and secure for full opening without interference according to manufacturer's instructions. Install gate latch according to manufacturer's instructions. Adjust for smooth, trouble-free operation. Allow minimum 72 hours to let concrete set-up before opening gates. Remove all traces of dirt and soiled areas in accordance with manufacturer's recommendations.

16.0 Wrought Iron Fencing

16.1 Steel material for fence panels and posts shall conform to the requirements of ASTM A653/A653M, with a minimum yield strength of 50,000 psi (344 MPa) and a minimum zinc (hot-dip galvanized) coating weight of 0.90 oz/ft2 (276 g/m2), Coating Designation G-90.

16.2 Material for fence pickets shall be 1" square x 14 Ga. tubing. Picket holes in the rail shall be spaced 41/2" O.C. Pickets shall have smaller openings and smaller space between the bottom rail and mowcurb when used for dog parks. Posts shall be a minimum of 1-1/2" square x 14 Ga. Rails shall be tubular steel with a minimum radius of 1-1/2" x 14 Ga. Rails shall be installed 4" above concrete mowcurb.

16.3 Pickets, rails and posts shall be pre-cut to specified lengths.

16.4 The manufactured panels and posts shall be subjected to inline electrode position coating process consisting of a multi-stage pretreatment/wash (with zinc phosphate), followed by a duplex cathodic electro coat application of an epoxy primer followed by an acrylic topcoat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils (0.058 mm). The color shall be black. Any field welds if required must have one coat of epoxy primer and two coats of exterior enamel. Painting must be guaranteed for 5 years.

16.5 Gates shall be fabricated using welded ornamental panel material and gate ends having a 1-3/4" square cross-sectional size. All rail and upright intersections shall be joined by welding. All picket and rail intersections shall also be joined by welding. All welds shall be primed and receive two coats of black enamel paint.

16.6 All fence posts shall have a standard square cap permanently secured to each post.

16.7 Concrete footings shall be 2500 PSI @ 28 days. Footings shall be as indicated within the District details.

16.8 All tubular steel fencing shall have a maintenance concrete mowcurb between each post per District detail unless approved by the District. Footing height shall allow for mow curb form boards to avoid breaking post footings in order to form and pour mowcurb

16.9 All fencing shall be installed per District details.

16.10 All posts shall be 2 l/2" square. Thickness shall be 11 ga steel. Posts shall be embedded 27" in a concrete footing l0" diameter 30" deep. Set 8' or less apart.

16.11 Gate posts shall be 2-½" square. Thickness shall be 11 gage steel for gate leafs that arc 6' or less in width. Gate posts for gates 6' – 10' wide shall be 4" square, 11 gage thickness embedded 33" in concrete footing 12" diameter x 36" deep.

16.12 Wrought iron panels shall be 1-½ square top and bottom rails 14 gage steel.

16.13 Pickets shall be 1" square 14 gage steel welded to top and bottom rails all the way around.

The wrought iron panels shall be attached to the posts using wall mounting brackets 14 gage steel. The brackets will slide into the top and bottom rails and mount to the post with self-tapping screws.

16.14 All wrought iron fencing to be powder coated. Touch up will be with paint color to match.

16.15 Gates are to be welded at all joints and tack weld all hinges to gate post and gate frame.

16.16 Gate frame leafs that are 6' wide or less will have 1 1/2" frames 14 gage steel with l" pickets, 14 gage welded to the frame all the way around. Gate frame leafs that are over 6' wide will have 2" frame 12 gage steel with 1" pickets, 14 gage welded to the frame all the way around.

16.17 No U channel construction shall be used for wrought iron.

16.18 All panels and panel pickets shall be welded.

17.0 Rock Mulch

17.1 All proposed rock mulch shall be approved by the District and shall be a minimum depth of 3 inches.

17.2 All rock mulch shall have Mirafy 140N filter fabric or approved equal.

17.3 Rock mulch larger than 1 inch shall not be used around play areas or buildings.

18.0 Decomposed Granite

18.1 Decomposed granite shall be blended material consisting of natural colors ranging from tan to gold. Material size shall not exceed 3/8".

18.2 Decomposed granite shall be compacted to a minimum thickness of 4 inches and shall be compacted to 85%.

18.3 Decomposed granite pathways and trails shall be subject to ADA guidelines unless otherwise specified and approved in writing by the District.

18.4 Decomposed granite shall be installed flush with all walkways and curbs per District detail.

18.5 All decomposed granite pathways and trails shall have a cross fall of 2% max. All decomposed granite pathways shall be crowned in the center per District detail unless project topography requires sheet flow in one direction only .

18.6 All decomposed granite must sheet flow at 1-1/2% minimum to 2% maximum to avoid standing water.

18.7 Contractor shall submit samples for District approval prior to delivery.

18.8 Decomposed granite shall be derived from the crushing and screening of naturally friable granite. The blending of course sand with rock dust is not an equal product.

18.9 Decomposed granite shall be screened to include stone particles of 3/8" minus. The particles that pass the 200 screen mesh as determined by ASTM methodology shall not exceed 18 percent.

18.10 Decomposed granite shall have a Natracil™ organic binder with a minimum swell volume of 35 ml/gm. The binder shall be incorporated with the granite fines by the use of a pug mill that includes a weight belt feeder that insures the proper ratio of binder to granite fines. Blending with the use of a bucket loader or similar is not acceptable. For pathways the binder shall be

blended at the rate of 12 lbs. per ton of granite fines. For parking lots or roadways the binder shall be incorporated at the rate of 14 lbs. per ton. Pathways, driveways or vehicular roadways shall have stabilized decomposed granite and be placed to a minimum depth of 4" compacted over an approved base. For each 2" lift evenly spread the material over area of concern. Grade and smooth as desired. Thoroughly water entire area so that the entire depth of the material is moist. After a period of +/- 6 hours compact the final lift with a 1000-3000 lb. drum roller. Allow for a sufficient curing period of +/- 4 days prior to use.

Supplier: Gail Materials (951) 667-6106, www.gailmaterials.net or approved equal.

19.0 Infield Mix

19.1 Infield mix shall be 4" minimum thickness compacted to 90% density.

19.2 Gradation – A minimum of 98% of particles shall pass the 2.00 mm sieve with the highest portion of sand particles in the medium to very fine range. Silt and clay distribution shall be relatively equal with allowable differences no greater than 10%. The final soil classification based on USDA criteria shall be a "sandy loam – sandy clay loam". This is a single source material and the blending of different parent materials is not acceptable.

19.3 The color of the material shall be "Gold" to "Reddish Gold".

19.4 For installation of new fields place infield mix to a final minimum depth of 4 inches over a 2" washed concrete sand sub-base that is prepared to acceptable specifications. The final grade should be leveled and sloped according to standard infield construction specifications. Allow for +/- 1 inch for compaction.

19.5 For installation of existing fields, properly scarify the surface of the existing material while incorporating +/- 1 inch of infield mix. Continue placement of the remainder of infield mix that is to be installed.

19.6 After leveling the infield skin thoroughly water the entire infield surface until the complete depth of the infield mix is moistened. After a period of +/- 4 hours compact with a minimum 2000 lb. static drum roller. If low areas are present, scarify and level low areas with additional infield mix.

19.7 Infield mix shall be 1" below all concrete edges and flush with all turf areas.

Supplier: Corona Clay Pro Gold Mix (951) 277-2667 , *www.**coronaclay**co.com*

20.0 Pitching Mix

20.1 Pitching mix shall be used around all home plate bases and pitching rubbers.

20.2 Provide a 9 foot diameter of pitching mix 4 inches deep around home plate and pitching rubber(s).

20.3 Gradation – A minimum of 95% of particles shall pass the 2.0 mm sieve with the highest proportion of sand particles in the medium to fine range. The particles that do not pass the 2 mm sieve shall be limited to fine gravel and shall not exceed 5%. Combined silt plus clay content shall be in the range of 30% with the allowable difference between silt and clay particles no greater than 10%. All of the above percentages are based on weight and not by volume.

20.4 Premium Grade Red Diamond® Calcined Clay as distributed by Gail Materials (951) 667-6106 shall be incorporated by use of a pug mill that includes a weight belt feeder at the rate of +/- 3 percent by weight which is equal to +/- 50 lbs of Red

Diamond per ton of Pro Gold Infield Mix.

20.5 The color of the material shall be “Gold” to “Reddish Gold”.

Supplier: Corona Clay (951) 277-2667. www.coronaclayco.com

21.0 Drinking Fountains

21.1 Drinking fountains shall be made from heavy duty 11 gauge galvanized steel with a power-coated finish.

21.2 Drinking fountain shall have a stainless steel push bottom valve allowing for front access to a stream adjustment and cartridge and strainer access.

21.3 Drinking fountain shall meet all current Federal Regulations for the disabled including those in the Americans with Disabilities Act. Drinking fountains shall be lead-free by all known definitions including ANSI/NSF Standard 61, Section 9, California Proposition 65, and the Federal Safe Drinking Water Act. Product is compliant to California Health and Safety Code 116875 (AB 1953-2006). Color shall be approved by the District.

21.4 All drinking fountains must have a sand trap per District detail. Sand trap body and fittings shall be made of hi-density black polyethylene. Cover shall be white polypropylene with eight vandal-resistant ¼” x 1-1/2” stainless steel screws and cadmium plated steel anchoring nuts, rubber gasket and three anti-skid strips. Contractor shall provide the District with a tool or key capable of opening the vandal-resistant cover. Contractor shall install a plastic irrigation valve box to cover sand trap cover to prevent pedestrian damage. If sand trap is installed within a concrete or other walkway surface a concrete valve box must be used.

21.5 All drinking fountain drain lines shall be installed per local codes.

21.6 All drinking fountain supply lines shall be copper piping encased within a poly sleeve or SCH 40 PVC piping with SCH 80 fittings. All piping shall be pressure tested at 150 PSI for 4 hours. Pressure test shall be performed by the contractor in the presence of the District. All piping shall conform to the District’s potable water pressure line irrigation standards.

21.7 All drinking fountain supply lines shall be flushed, chlorinated and sanitized per local health code.

21.8 All drinking fountains must have a supply shut off valve within 10ft of the fountain. Contractor shall install a plastic irrigation valve box to cover enclose shut off valve. If shut off valve is installed within a concrete or other walkway surface a concrete valve box must be used.

Manufacturer: Haws Corporation (888) 640-4297 Model #3380 and #6611 or approved equal.

22.0 Aluminum Bleachers

22.1 General

Manufacturer must have a minimum of ten years experience in the design and manufacture of bleachers. Welders must conform to AWS standards. Source Quality Control: Mill Test Certification. Codes and Standards: 2006 International Building Code / ICC 300. Bleacher shall be 21 feet long and 5 rows. Larger bleachers may be required as determined by the District depending on the type and size of project. Bleachers larger than 21’ must have a cut out to comply with ADA requirements.

22.2 Warranty

Warranty shall guarantee bleachers to be free from defect in materials and workmanship for period of 1 year under normal use. Warranty period shall begin on date of completion for projects installed by manufacturer, or its subcontractors, or warranty period shall begin on date of final delivery on projects installed by others. Anodized finish of plank extrusions shall be covered by a 5 year warranty against loss of structural strength or finish deterioration due to exposure to weather conditions or UV rays. Discoloration of mill finish aluminum due to galvanic reaction not covered.

22.3 Product Liability Insurance
Product liability insurance must be carried for the life of the product in the amount of $2,000,000 and shall be supplied with the project submittals prior to installation.

22.4 Engineering

Engineering certifications and calculations by a Registered Professional Engineer shall be provided upon request.

22.5 International Building Code (IBC), 2006 Edition / ICC 300

Design Loads:

a. Live Loads: Uniform loading - Structure = 100 per square foot (PSF) Uniform loading - Seat and Foot plank = 120 per linear foot (PLF)

b. Sway Loads: Perpendicular to seats = 10 PLF Parallel to seats = 24 PLF

c. Guardrail Loads: Uniform vertical load = 100 PLF Uniform horizontal load = 50 PLF Concentrated horizontal load = 200 pounds

d. *Wind Loads: Basic design wind speed = 150 mph (exposure “B”)
*Note: Bleacher must be anchored to meet wind loads above

22.6 Non-elevated Angle Frame Bleachers

Quantity and Size: Shall consist of 1 unit(s) 5 rows high x 21'-0" min. length.
Net seating capacity per unit 48 + 2 HC (excluding aisles, based on 18" per seat).
Framework: Prefabricated aluminum angle spaced at 6' - 0" intervals joined by means of aluminum angle cross bracing. Shop connections: Welded to meet AWS standards and local code requirements

22.7 Non-elevated Aluminum Angle Frame Bleachers

Design and fabrication of Non-Elevated angle frame bleachers Non-Elevated Aluminum Angle Frame Bleacher Specifications. Joint Sleeve Assembly: Internal splices, where required shall be two per joint, and shall penetrate the joint a minimum of 8” in each direction and be riveted at one end only to allow for contraction and expansion.
Rise and Depth Dimensions: 8” vertical rise and 24” tread depth, Seat height is 17” above its respective tread. Seats: Nominal 2” x 10” anodized aluminum with anodized end caps.
Treads: Nominal two (2) 2” x 10” mill finish aluminum with anodized end caps on rows 2 & up.
Risers: Nominal two (2) 1” x 6” mill finish aluminum with mill finish end caps on top row.
Nominal 1” x 6” mill finish aluminum with end caps on all other rows.

22.8 Aisles

Aisle footboards shall be of aluminum alloy 6063-T6 and be of mill finish with contrasting aisle markings. Three aisle stiffener angles shall be used to strengthen the aisle step. There shall be1 aisle(s) 48" wide.

22.9 Aisle Handrail

Anodized aluminum pipe with intermediate rail.

22.10 Guard Rail

Guard rails shall be anodized aluminum vertical picket panels attached to support members. Rear rail support member to be aluminum channel. Side rail support member to be aluminum angles. Standard AA-M10C223A31(204R1). Panels shall consist of 1-5/8" O.D. round tube and extruded aluminum 5/8" square. Panels shall attach to rail support members by means of 5/16" dia. u-bolts, lock washers, and nuts. Panels shall connect together using internal splice and rivet. End panels shall be terminated using aluminum elbows, and aluminum round tube mechanically fastened.

22.11 Handicapped Accessibility

Handicap accessibility shall be provided as required by the code listed above.

22.12 Framework:

a. Aluminum: Structural fabrication with aluminum alloy 6061-T6 mill finish. Each frame shall be unit-welded, using metal inert gas method, under guidelines by the American Welding Society. After fabrication all steel is hot dipped galvanized to ASTM A-123 specifications. All cross bracing and horizontal bracing shall be aluminum angle 6061-T6 mill finish.

b. Extruded Aluminum: Seat planks: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II with a wall thickness nominally .078" for impact and deformation resistance.

c. Tread and Riser Planks: Aluminum alloy 6063-T6, mill finish with a wall thickness nominally .078” for impact and deformation resistance.

d. Guardrail Pipe: 1-5/8 OD schedule 40 aluminum alloy 6105-T5, clear anodized 204R1, AA-M10C22A31, Class II.

22.13 Accessories:

a. Channel End Caps: Aluminum alloy 6063-T6, clear anodized 204R1,AA-M10C22A31,Class II.

b. Hardware: Bolts and Nuts shall be hot dipped galvanized.

c. Hold Down Clip Assembly: Aluminum alloy 6063-T6 mill finish.

d. Joint Sleeve Assembly: Aluminum alloy 6061-T6, mill finish.

22.14 Installation

Install bleacher unit in accordance with manufacturer written instructions and shop drawings. Note: Building codes may vary from site to site. The customer is responsible for verification of local code requirements. Bleacher shall be permanently anchored to concrete per manufacturer and District details and requirements. Contractor shall maintain ADA accessible routes as required per ADA regulations.

Manufacturer: Tomark Sports #K13722 (800) 959-1844 or approved equal.

23.0 Aluminum Player Bench and Bat Rack

23.1 Player’s Bench

Player's bench shall be clear anodized aluminum. Bench shall be 21 feet long capable of seating 14 people. Bench shall be footing mounted within the concrete dugout area. All plank ends shall be protected with a plastic end cap that is secured with rivets. Bench shall be installed per manufacturer's installation instructions and District details.

Manufacturer: Tomark Sports #K10697 (800) 959-1844 or approved equal.

23.2 Bat Rack

Bat rack shall be galvanized steel footing mount rack capable of holding 8 bats. Bat rack shall be 2'6" minimum length.

Manufacturer: Tomark Sports #K30026 (800) 959-1844 or approved equal.

24.0 Trash Receptacles & Recycle Containers

24.1 General

All trash receptacles shall be PVC consisting of a litter receptacle, anchor, bolting hardware, a plastic liner, and a dome lid. Trash receptacle shall have a thirty-two gallon galvanized liner that lifts out for emptying. All trash receptacles shall be footing mounted.
Trash receptacles shall be permanently mounted to concrete flatwork

24.2 Receptacle Assembly

The litter receptacle sections shall be constructed of 16 ga. punched steel sheet sides with 7 ga. trim, 1/4" x 2" bolting brackets, and 7 ga. base attaching brackets.

24.3 Anchor Assembly

The anchor leg shall be constructed of 2" steel pipe. The anchor bracket and anchor brace shall be constructed of 11 ga. A-60 Galvannealed sheet. The anchor assembly shall be solid welded.

24.4 Liner

Contractor shall remove plastic liner provided by the manufacturer and provide a galvanized liner. The liner shall be 20-1/2" in diameter at the top, 27" tall, and shall have a 32 gallon capacity.

24.5 Dome Lid

The dome lid shall be made of structural plastic measuring 25" in diameter by 12-3/4" tall. The dome lid shall be secured to receptacle frame with a galvanized cable and vandal proof screws per District detail.

24.6. Fasteners

All hardware shall be Fastener Style A.

24.7 Finishes

The litter receptacle sections shall be finished in Mira-Therm. The anchor assembly shall have a Mira-Cote finish. The dome lid shall have color molded in.

Manufacturer: Miracle Playgrounds (800) 264-7225) Model #1129 or approved equal.

24.8 Recycle containers shall be used for all parks with sports fields and restrooms and shall be designed for outdoor use and must be lockable. Two recycled containers must be provided

for every ball field and soccer field. For parks without playing fields, one container shall be provided at the restroom building. Recycle containers shall be permanently mounted to concrete flatwork. Recycle containers shall have circular openings for plastic bottles. Recycle containers shall have a recycled logo permanently inscribed in the frame.

Manufacturer: To be submitted to the District for approval by project designer.

25.0 BBQ & Hot Coal Containers

25.1 BBQ shall have 1/8" thick 304 stainless steel sides and 1/4" thick 304 stainless steel bottom. Firebox size shall be 15"x20"x10" (300 sq. in.). BBQ shall have an adjustable stainless steel cooking grate and a 2-3/8" dia. galvanized support post. Support post shall be permanently secured to the frame. Provide a 4' x4' minimum concrete pad around BBQ. Container shall have a standard gloss sealer applied by the manufacturer. Group BBQ's shall be provided as determined by the District.

Manufacturer: RJ Thomas Mfg. Co., Inc. (800) 762-5002 Model #NSS20 B6S or approved equal. RJ Thomas Mfg. Co., Inc. (800) 762-5002 Model #L-1500/S (group BBQ) or approved equal.

25.2 Hot coal container shall be 28" x 28" x 42" tall. Container shall be precast concrete with light sand blast finish. The container shall have cast in painted logo and words to read, "HOT COALS ONLY". Steel ash grate shall be 23-1/4" square to dump coals and ash. The grate bar spacings shall allow full size charcoal briquettes through, but will prevent most large trash from being deposited. Contractor shall provide galvanized steel garbage can for ash and coal collection.

Manufacturer: Quick Crete (951) 737-6240 Model #Q-PSHA-2842-C3-T2 or approved equal.

26.0 Picnic Table

26.1 General

All picnic tables shall be PVC-dipped punched steel picnic tables seat boards and table top with rounded edges for enhanced comfort and safety, and shall be designed for in-ground installation. All picnic tables shall be footing mounted. Picnic tables shall be permanently mounted to concrete flatwork

26.2 Table Top & Seatboards

The table top shall measure a minimum of 30" x 72" (or 96") x 2" thick. The seat boards shall measure 10" x 72" (or 96") x 2" thick. Each shall be constructed with 11 ga. steel sheet perforated with a staggered pattern of 3/8" diameter holes at 5/8" apart center-to-center. The frame shall be constructed by folding edges to form 2" tall walls and shall be supported by solid welded braces of 1/4" x 1-1/2" flat.

26.3 Legs

The upright and seat support arms shall be constructed of 4" square tube with a cap of 11 ga. sheet. The top support angle shall be constructed of 2" x 3" x 3/16" angle, and the seat support angle shall be constructed of 3" x 4" x 3/16" angle. The assembly shall be solid welded. Adapter brackets for Model # 1148 and angle braces for Model # 1116-2 and # 1118-2 shall be constructed of die-formed 11 ga. sheet A-60 Galvannealed.
Seatboard mounting brackets shall be constructed of 11 ga. steel sheet.

26.4 Fasteners

The assembly shall contain Fastener Style A hardware.

26.5 Finishes

The seatboards and table top shall be finished in Mira-Therm. The legs, brackets, and braces shall be finished in Mira-Cote.

Manufacturer: Miracle Playgrounds (800) 264-7225) Model #1116-2 or approved equal.

26.6 Each project shall have a minimum of one ADA accessible table and one ADA accessible table for every additional six standard tables. ADA tables shall comply with all ADA requirements.

Manufacturer: Miracle Playgrounds (800) 264-7225) Model #1148 or approved equal.

27.0 Benches

27.1 General

All benches (excluding aluminum player's bench in dugouts) shall be PVC-dipped punched benches with backs with rounded edges for enhanced comfort and safety, and shall be designed for in-ground installation. All benches shall be permanent PVC-dipped, punched steel 6' min. long park benches. All benches shall be footing mounted. Benches shall be permanently mounted to concrete flatwork. A 3' min. concrete pad shall be provided for each bench per District detail.

27.2 Seatboards

The seat boards shall measure 10" x 72" x 2" thick. Each shall be constructed with 11 ga. steel sheet perforated with a staggered pattern of 3/8" diameter holes at 5/8" apart center-to-center. The frame shall be constructed by folding edges to form 2" tall walls and shall be supported by solid welded braces of 1/4" x 1-1/4" flat. Seatboard brackets shall be constructed of 11 ga. galvanized 1-1/2" x 2" x 7-1/2" angle containing 7/16" diameter holes and 7/16" x 7/8" slots.

27.3 Legs

Leg assemblies each shall consist of a seat support welded to a vertical support which serves as the leg and back bracing. The assembly shall be fabricated of 2" pipe with seat brackets made of 7 ga. galvanized sheet, solid welded, drilled and formed. Open pipe ends shall be capped with 16 ga. galvanized steel, die-formed and welded caps.

27.4 Connectors

The connector shall be constructed of 1" pipe, 47-1/16" or 65-5/16" long.

27.5 Fasteners

The assembly shall contain Fastener Style A hardware.

27.6 Finishes

The seatboards and table top shall be finished in Mira-Therm. The legs, brackets, and braces shall be finished in Mira-Cote.

Manufacturer: Miracle Playgrounds (800) 264-7225) Model #1266 or approved equal.

28.0 Play Equipment

28.1 Scope

Furnish labor, material and equipment necessary for the installation of the playground equipment, structure or modular unit as shown on the drawings and specified herein. Work shall include, but not limited to the following: excavation, layout, and the installing of playground equipment in accordance with the manufacturer's installation specifications, including all appurtenances and accessories as required for a full and complete installation.

28.2 Products

All public playground equipment supplied shall meet all applicable provisions of the current California Code of Regulations Title 22, Div. 4, Chapter 22. All productions shall bear the certifications seal of the International Playground Equipment Manufacturers Association (IPEMA). All designs shall meet or exceed the Americans with Disabilities Act (ADA) "Final Accessibility Guidelines for Play Areas" regulations as published on October 18, 2000. All manufacturers must be ISO 9001 certified.

28.3 Design and Fabrication

Playground equipment, structure or modular unit submitted for consideration shall be equivalent in design, layout, deck size, post size, clamping/fastening system, deck/slide/climber height, ADA accessibility, appearance, color and construction detail to playground equipment specified in the drawings. Reasonable variations in size/height (no more than +/- 10%) and manufacturer's standard colors may be allowed at the District's discretion. Color schemes are to match as closely as possible to the originally specified colors. Play value and safety features of components must be equal or superior to specified design as judged by the District. All playground equipment shall have a shade canopy structure unless otherwise approved by the District.

28.4 Modification

Any expense of modification, adjustment or revision required to ensure compliance of furnished equipment to specified equipment and playground design shall be the sole expense and responsibility of the Contractor.

28.5 Safety Standards & Quality Assurance

All products shall bear the certification seal of the International Play Equipment Manufacturers Association (IPEMA). All designs shall meet or exceed the Americans with Disabilities Act (ADA) "Final Accessibility Guidelines for Play Areas" regulations as published on October 18, 2000. All manufacturers must be ISO 9001 and ISO 14001 certified.

28.6 References and Standards

a. California Title 22, Division 4, Chapter 22 Playground Safety Regulations

b. CPSC: Consumer Product Safety Commission

c. IPEMA: International Playground Equipment Manufacturers Association

d. ADA: Americans with Disabilities Act

e. ISO: International Organization for Standardization

f. CPSI: Certified Playground Safety Inspector

28.7 Manufacturer Warranty/Guaranty

The equipment manufacturer shall warrant material and workmanship against defects, from the date of manufacturer's invoice, for the period of time as follows:

a. LIMITED ONE HUNDRED (100) YEAR WARRANTY on aluminum deck posts, steel deck posts, clamping/fastening system (Versalok®), and associated fastening hardware against structural failure caused by corrosion or deterioration from exposure to weather, or by defective materials or defective workmanship.

b. LIMITED FIFTEEN (15) YEAR WARRANTY on steel support legs and Mira-Therm II components on TOTS' CHOICE®, KIDS' CHOICE®, and CENTER STAGE® against structural failure caused by corrosion, defective materials, or defective workmanship.

c. LIMITED FIFTEEN (15) YEAR WARRANTY on playsystem steel components including railings, rungs, and rigid climbers against structural failure caused by defective materials or defective workmanship.

d. LIMITED FIFTEEN (15) YEAR WARRANTY on rotationally-molded plastic components (Rockite®) against structural failure caused by defective materials or defective workmanship.

e. LIMITED FIVE (5) YEAR WARRANTY on Kidrox™ Climbing Rocks against structural failure caused by defective materials or defective workmanship.

f. LIMITED ONE (1) YEAR WARRANTY on TODDLERS' CHOICE® main support materials and decks against structural failure caused by defective materials or defective workmanship.

g. LIMITED THREE (3) YEAR WARRANTY on Slashproof Seats and 360 degree Bucket Tot Seats for Swings against structural failure caused by defective materials or defective workmanship.

h. LIMITED ONE (1) YEAR WARRANTY on all products not listed above including all moving parts and flexible climbers against structural failure caused by defective materials or defective workmanship.

i. Warrantee for repaired or replacement part(s) are only for the balance of the original limited warranty. These warranties are only valid if products are installed according to manufacturer's installation instructions.

28.8 Contractor Warranty/Guarantee

a. The Contractor shall guarantee installation workmanship for a period of one year from the date of Substantial Completion of the Project. The Contractor shall be responsible for coordinating manufacturer material warranty items with the manufacturer/distributor and for the installation of replacement material(s) at no additional cost to the District.

b. Provide copy of contractor's installation warranty on company letterhead.

28.9 Installation

a. Instructions: Explicit installation instructions shall be provided by the manufacturer, which shall include detailed, scaled plan view; elevations; footing drawings and details; as well as, written instructions to assure proper installation of the playground equipment, structure or modular unit.

b. Playground equipment must be installed by a manufacturer certified installer and be installed in accordance with the manufacturer's installation specifications. Installation crew leader must be CPSI certified. If not installed by a manufacturer certified installer the play equipment shall be inspected after installation by a CPSI not employed by the installer and signed off by said CPSI before the playground is

opened for first use. Inspection certification must be provided to the District prior to park acceptance.

c. Close Out: Contractor shall provide the District with one copy of complete manufacturers installation instructions and maintenance kit if provided. Most manufacturers send at least two sets of installation manuals with each order. Additional sets of installation instructions should be purchased from the manufacturer if originals are lost or damaged. It is the contractor's responsibility to secure the installation instructions from the installer. Miracle Playground mails one complete set of installation instructions/directions directly to the purchasing party.

d. The contractor shall have the playground certified by an authorized playground inspector. A record of the inspection and certification must be provided to the District before the playground will be accepted by the District or open to the public.

e. Clean-up: The site shall be kept clean and free of tools, trash, debris and installation materials on a daily basis. Material may be stored on site during installation with appropriate protective measures and approval by the District.

28.10 Safety Surfacing

a. All playgrounds shall have a minimum compacted thickness of 12 inches of engineered wood safety surfacing.

b. All playground safety surfacing must comply with IPEMA and ADA regulations. Wood safety surfacing must be watered, compacted and replenished as required to be 1 inch below the top of playground curb. Fiber must comply with ASTM 2075-04 & F-1292-99.

c. All playgrounds which are located in an area where wood safety surfacing is determined by the District to not be adequate the District may require pour in place safety surfacing. Surfacing material shall be reviewed and approved by the District.

Manufacturer: Cross Roads Mulch PLAYSOFT engineered wood fiber or approved equal.

29.0 Basketball Goals

29.1 Basketball goals shall have a 16'6" galvanized steel support post with 6 foot extensions.

Manufacturer: Tomark Sports (800) 959-1844 #K31004 or approved equal.

29.2 Basketball goals shall have a ¼" thick steel rectangle backboard. Backboard shall be white powder-coated finish. Size shall be 48" high and 72" wide. Goal mount shall be 5" x 5". Backboard shall have an orange square target and border applied at the factory.

Manufacturer: Tomark Sports (800) 959-1844 #K32533 & #K32577 or approved equal.

29.3 Backboard shall have a 5/8" solid steel goal rim with a ½" bracer bar. Back plate shall be 3/16" thick with a universal mounting pattern. Rim shall have continuous net locks and have a heavy duty orange powder coated finish. Contractor shall provided and install poly net prior to project turnover. Net shall be model #K30457 or approved equal.

Manufacturer: Tomark Sports (800) 959-1844 #K32642 or approved equal.

30.0 Monument Sign

30.1 General

Monument sign shall be installed per District detail. Monument sign shall be pre-cast concrete. Sign shall have recessed painted lettering per District detail. Precast sign shall have on site erected custom block pilasters with rock veneer per District detail. Pre-cast caps for sign and pilasters shall be provided by monument sign manufacturer. Sign shall be elevated as to allow lettering visibility over landscape vegetation. Sign shall not conflict with any County or City site distance regulation. Monument signs shall be illuminated with LED lighting.

30.2 Submittals

Submit shop drawings of all precast concrete items showing detail sections and profile for all precast items. Details shall show all reinforcing and special hardware required for fastening. Submittals shall comply with general submittal section 4.0.

30.3 Performance Requirements

a. Compressive Strength 5000

b. Air Content 6-8%

c. Water-Cement Ratio .45:1

30.3 Certification

Suppliers shall furnish certification attesting that materials meet specification requirements.

30.5 Quality Assurance

a. PCI Standards: Comply with specified provisions and recommendations of the Precast/Prestressed Concrete Institute. (PCI)

b. ACI Manual of Concrete Practice: Comply with specified provisions and recommendations of the American Concrete Institute. (ACI)

c. Manufacturer's Instructions: In addition to specified requirements, comply with precast concrete manufacturer's instructions and recommendations for substrate preparation, material storage, mixing and application, finishing and curing.

30.6 Qualifications

Precast Concrete Manufacturer and Trade Contractor must have a minimum of 5 years of successful experience on projects of similar magnitude and complexity to that indicated project. Manufacturer and contractor shall be prequalified by the District prior to bidding. Failure to prequalify will void bid.

30.7 Delivery, Storage and Handling

Precast concrete to be palletized and shrink wrapped, delivered in original unopened packaging with legible manufacturer identification, including size, piece number, quantities, manufacture date and inspectors initials. Precast concrete to be stored in secure area in original packaging. Protect from damage by other trades.

30.8 Warranty

Manufacturer/Installer shall warrant installed system for a period of 2 years from date of substantial completion against failure of workmanship and materials.

30.9 Materials

a. Portland Cement: ASTM C-150 specifications for Portland Cement.

b. Aggregates: All aggregates to meet ASTM C-33 specifications, cleaned and properly graded to size. Aggregates shall be blended to meet individual project requirements.

c. Coloring: Pigments used shall be inorganic, resistant to alkalinity and used per manufacturer's recommendations.

30.10 Reinforcement

Reinforcement and hardware to conform with ACI and manufacturer's design.

a. Reinforce precast with rods or wire, or both, as recommended by precast concrete manufacturer.

30.11 Caulks and Sealants

a. Urethane or Polyurethane sealant

b. Color to be selected by architect from standard color palette.

30.12 Sealer

Colorless, pure acrylic water-repellent penetrating sealer. Sealer to maintain natural look of concrete surface with no glaze or gloss, darkening or color change.

30.13 Tolerances

All units to conform to shop drawings, with a 1/8" tolerance in dimension.

30.14 Precast Surfaces and Edges

All exposed edges to have minimum 1/8" chamfer to prevent chipping. Finished surfaces to match approved control sample. All precast concrete finished surfaces to be sealed with a sealer approved by manufacturer.

30.15 Installation

Alignment of precast should be straight and true to all dimensions. It may not vary more than 1/8" in length, height or width. Install anchors as shown on details. Fill joints between with manufacturer approved caulk or as specified.

30.16 Protection

Upon completion, the work shall be ready for final inspection and acceptance by the District or District's representative. Contractor shall protect the finished work from the time the installing contractor completes the work.

Manufacturer: Wausau Tile, Inc. or approved equal.

31.0 Shade Structures

31.1 General

Shade structures shall be prefabricated from manufacturer with 10 or more years of experience in designing and manufacturing steel pre-manufactured shade structures. Cumulative experience in fabrication will not be an acceptable alternative. The product shall comply with the following:

a. The product shall be shipped from a single source.

b. Membership in American Institute of Steel Construction.

c. Membership in American Society for Quality.

d. Membership in American Welding Society.

e. Membership in Chemical Coaters Association International.

f. Membership in Construction Specifications Institute.

g. Full time on-staff Licensed Engineer.

h. Full time on-staff Quality Assurance Manager.

i. Published Quality Management System.

j. Full time on-staff AWS Certified Welding Inspector.

k. Continued certification by an independent inspection agency.

l. Control of finishing quality by in-house shot blast, pretreatment, primer and powder coating.

All shade structures shall be hexagonal or octagonal. Rectangle structures may be allowed for large structures for group events with written approval by the District.

Shade structures shall be bolt-together tubular steel frames, with a powder coat finish. No field welding shall be permitted. Roof decks shall be metal or concrete tile. Shade structures shall be shipped as a knocked-down pre-fabricated kit that includes the structural frame, roof deck, fasteners, trim, optional ornamentation and installation instructions. Footing details shall be designed by a licensed engineer. All shade structures shall comply with current local building codes. Install all components according to manufacturer's installation instructions and these specifications.

31.2 Structural Framing

Structural framing shall be steel tube minimum ASTM A500 grade B. "I" beams; tapered columns, open channels, or wood products shall not be accepted for primary beams. All support frames, posts, beams, braces and rails shall be hot dip galvanized to protect steel from rust. All support frames, posts, beams, braces, perlins and rails shall received an "E"-Coat Undercoating dip process with an electro-deposition applied epoxy coating that bonds to the steel. The combination of "E"-coating and powder coating shall be a durable finish, and shall be comparable to Poli-5000 available through Poligon. Support posts shall have all required electrical. Typical support posts shall be square; however, decorative posts can be submitted for approval. Structural channel or welded plate minimum ASTM A36 or Compression Tube: structural steel tube minimum ASTM A500 grade B.

Structural Fasteners: ASTM A325 high strength bolts and A563 high strength nuts, ASTM A307 anchor bolts. One support for each shade structure shall have an electrical box knock out provided by the manufacturer.

Contractor shall install an electrical conduit per local codes to electrical outlet opening and install an Intermatic® outdoor GFCI outlet with a weather proof lockable receptacle cover plate. All electrical work shall be performed by a licensed electrician and shall be inspected by the District and local governing agency. Where possible, columns shall be surface mounted with all anchor bolts hidden within the column. Where possible, the structure will have a moment connection at the top of the column and a pinned connection at the base of the column to ensure a clean connection at the base, reduce the size of the concrete base, and provide for one-step concrete installation process. Steel shall be cleaned, pretreated and finished at a facility owned and directly supervised by the manufacturer. Steel shall be shot

blasted to SSPC-SP10 near-white blast cleaning. SSPC-SP2 hand tool cleaning will not be an acceptable alternative. Parts shall be pretreated in a 3 stage iron phosphate or equal washer. Epoxy primer powder coat to be applied to parts for superior corrosion protection. Top powder coat of Super Durable TGIC Powder Coat to color selected from manufacturer's standard color chart: For environmental purposes, finish shall allow no VOC emissions. Sample production parts shall have been tested and meet the following criteria:

a. Salt spray resistance per ASTM B 117/ ASTM D 1654 to 5000 hours with no creep from scribe line and rating of 10.

b. Humidity resistance per ASTM D2247-02 to 3000 hours with no loss of adhesion or blistering.

c. Color/UV resistance per ASTM G154-04 to 2000 hours exposure, alternate cycles with results of a) no chalking b) 75% color retention c) Color variation maximum 3.0 E variation CIE formula (before and after 2000 hours exposure.)

31.3 Roofing

Roofing for shade structures for parks under five acres without a restroom building shall be multi-rib roofing. Multi-rib roofing shall be 24-gauge galvanized steel panels with a Kynar color paint on the top and white prime paint on the ceiling surface. Multi-rib roofing shall be supplied pre-cut to length and angle. All trim shall be matching Kynar color trim as required. The metal roof deck shall be attached with exposed fasteners with gaskets. Trim shall include panel ridge caps, eave trim, splice channels, roof peak cap, and corner trim as applicable for model selected, reference drawings for additional information. Painted screws and butyl tape shall be included. Ridge Caps shall be preformed with a single central bend to match the roof pitch and shall be hemmed on the sides. Roof peak cap shall be supplied on all buildings except ones that include a cupola option. 30 pound felt and nails shall be provided when tongue and groove or SIP roof deck is ordered along with metal roofing. 2x6 tongue and groove panel roof decks with exposed wood ceilings can be used as an upgrade if desired. Roofing for shade structures for parks with restrooms or other buildings shall match style and color of standing seam roof used on other buildings. Standing seam roofing shall have a 2x6 tongue and groove roof deck.

31.4 Footings

Shade structure shall be set on prepared footings designed by manufacturer, anchor bolts to be provided by manufacturer. The design engineer shall be presented with complete information about the site including soil bearing and lateral load capability. The contractor must use appropriate construction practices for the specific site conditions. All footings shall be installed per stamped engineered plans and shall be inspected by the District prior to pouring. Typical footing details within shade structure plans shown "for reference only" shall not be used. All excavation shall be performed per OSHA safety requirements. Contractor shall be responsible for procuring an excavation permit as required by law for footings over four feet in depth. All steel bars shall be installed per structural engineered drawings. Anchor bolts provided by the manufacturer shall be installed per approved plans.

31.5 Concrete Patio.

Concrete patio shall comply with section 8.0 & 9.0.

31.6 Submittals

Submit 4 sets shop drawings and 2 sets structural calculations signed and sealed by a Professional Engineer licensed in the State of California. Structural calculations shall be in conformance to item 1.5A under System Description. Submittals shall comply with general submittal section 4.0.

31.7 Substitutions

Substitutions must be approved a minimum of ten (10) days before bid. Alternate suppliers must meet the qualifications and provide proof of certifications listed under section 31.1. Alternate suppliers must provide equivalency and written verification test data to Poligon's Poli-5000 paint system. Alternate suppliers must provide proof that their designs do not infringe on patents or copyrights.

Manufacturer: Poligon® by PorterCorp (800) 354-7721 or approved equal.

- END OF SECTION -

25.0 Irrigation Specifications

IRRIGATION SYSTEMS

IRRIGATION SPECIFICATIONS (GENERAL)

1.0 General Requirements

1.1 "The District" shall be considered Hesperia Recreation & Park District inspection personnel, consultants or other approved team members hereafter.

1.2 Permits: Contractor shall obtain and pay for any permits required.

1.3 A Cal-Osha permit is required prior to any excavation greater than 4 feet deep.

1.4 Contractor shall be responsible for notifying all utility companies 2 days prior to any trenching.

1.5 Contractor must provide the District's representative with the Dig Alert number at first inspection.

1.6 The current Standard Landscape Specifications & Design Guidelines booklet must be on site at all times for each project.

1.7 All inspection fees must be paid prior to start of work.

1.8 Contractor shall have and maintain a specialty C-27 license throughout the duration of the work. Contractor shall maintain an experienced project supervisor and project foreman at the project site at all times throughout the duration of the installation.

1.9 All work must be performed by a qualified contractor with a minimum of 5 years experience performing similar projects. The District reserves the right to disqualify any contractor that does not meet this qualification.

1.10 Substitutions or alternates of any material must be approved a minimum of ten (10) days before bid.

1.11 It is the intent of the District for all irrigation systems to properly irrigate all landscape areas with water conservation being the utmost importance. All irrigation shall be designed with individual zones for each different moisture requirement to provide 80% minimum Distribution Uniformity (DU).

1.12 All plant material shall be California friendly and shall survive with a water demand of 70% or less of its referenced evapotranspiration (ETo).

1.13 Irrigation consultant shall provide an Estimated Annual Water Use (EAWU) and shall not exceed the Maximum Allowed Water Allowance (MAWA) unless approved by the District. Sports parks shall be considered a special use project and will be considered exempt from the MAWA.

1.14 All planter irrigation shall be low volume irrigation unless approved by the District. All turf irrigation within 24" of any non-permeable surface that could potentially run off-site shall be irrigated with Rainbird XF-SDI Series Dripline with Copper Shield™ Technology or approved equal. Dripline irrigation shall be installed per manufacturer guidelines.

1.15 An irrigation audit shall be provided for all irrigation work larger than 3,000 square feet to confirm distribution uniformity. Irrigation audit shall include recommended adjustments when needed.

1.16 All irrigation shall conform with Ordinance No. 859.2 and AB1881.

1.17 In the event of any contradiction within specifications, details or plans the contractor shall be responsible for compliance with the more stringent standard.

1.18 All recycled and potable water irrigation systems shall comply with the following items per HWD recycled water guidelines regardless of water source and are subject to change and must be verified with and the District:

a. All recycled water irrigation pressure mainline piping shall be installed a minimum of four horizontal feet away and one vertical foot under any domestic water line including but limited to all fire hydrants, blow-offs, drinking fountains. In the event that a four foot separation is not feasible all irrigation pressure mainline shall be sleeved ten feet each direction from any domestic water line. If pressure mainline changes direction within ten feet of domestic water line, piping must be backfilled with concrete slurry in lieu of sleeving. No slurry shall be installed until District has verified layout, piping, as-built measurements and digital photo documentation has been completed.

b. All recycled water irrigation lateral piping that crosses or is within four feet of any domestic water line shall be sleeved ten feet in each direction.

c. Unless approved in writing by the District based upon the geographic area, all piping must be purple PVC per piping specifications regardless if recycled water is available or not.

d. Cross connections between domestic and irrigation piping is strictly prohibited. Interconnection of irrigation pressure mainlines originating from more than one meter is strictly prohibited.

e. No ponding, runoff or overspray is permitted. Adjust all sprinkler heads to minimize overspray onto sidewalks, streets, drinking fountains, decorative fountains, comfort stations, playground equipment, picnic tables, bbq, private lots, potable water areas and equipment, food preparation, outdoor eating areas or non-designated use areas. All areas must be protected from recycled water overspray, wind blown spray, runoff, ponding, or unauthorized use. Lack of prevention, whether by design, construction practice, or system operation, is strictly prohibited.

f. Any proposed changes to a system during construction must be submitted to the District for authorization of the changes prior to the change being made in the field.

g. All irrigation components must be included in the project record drawings as outlined within specification section 5.0.

1.19 Labor Code Sections 1720 et seq. and 1770 et seq., as well as California Code of Regulations, Title 8, Section 16000 et seq. (“Prevailing Wage Laws”), require the payment of prevailing wage rates and the performance of other requirements on certain “public works” and “maintenance” projects. If this Project involves an applicable “public works” or “maintenance” project, as defined by the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Developer agrees to fully comply with such Prevailing Wage Laws. The Developer shall defend, indemnify and hold the District, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

2.0 Scope of Work

2.1 The intent of the drawings and specifications is to indicate the process required for the installation of a complete operating irrigation system complete in every respect satisfactory to the District, applicable water district, county, city and state requirements.

2.2 The work consists of furnishing all tools, equipment, material, transportation, labor and any processes required to provide a complete operating irrigation system as specified in the drawings and specifications.

2.3 Drawings are diagrammatic and must be field verified. Contractor must notify the architect and the District immediately of any discrepancies prior to starting work.

2.4 All work indicated in the specifications, details, notes or plans shall be provided and installed whether or not specifically mentioned in the specifications. It shall be understood that if an item is shown in specifications but not shown on the plan it shall be as if shown on both and if an item is shown on plan but not shown in the specifications it shall be as if shown on both. The District shall have final authority for any and all clarifications.

2.5 Due to the scale of the drawings it is not possible to show all offsets, assemblies, fittings, etc. for a complete irrigation system.

2.6 Contractor shall provide all necessary assemblies, fittings, sleeves etc. to provide a complete fully automatic irrigation system as listed in drawings and specifications with no additional cost to the District.

2.7 The work shall be performed in such a manner as to not conflict with any known obstructions. Contractor shall notify the District of any conflict. Contractor shall assume full responsibility for any modification or revision required in the event that no notification was given to the District.

2.8 If recycled water is used, contractor shall provide all necessary recycled water signage and equipment. The entire irrigation system must be in accordance to the local recycled water district's specifications and as listed in drawings. Contractor shall notify the District of any contradictions between District specifications and local water district's specification to confirm precedence.

3.0 Quality Control

3.1 Contractor must provide one competent English speaking employee capable of understanding and communicating with District personnel on site at all times throughout the duration of the work.

3.2 Contractor must provide personnel with a minimum of three (3) years experience that are familiar with all types of material being used and installation methods for all work performed.

3.3 In the event that no specifications or details are provided for any items shown on the plans, the manufacturer's directions, specifications and/or details shall be followed.

3.4 District specifications and/or details shall always take precedence over manufacturer's specifications or recommendations.

3.5 All local, county and state laws, rules and regulations related to any portion of work under this section shall be incorporated within these specifications and adhered to throughout the duration of work. Nothing contained within these specifications shall be construed to conflict with said rules and regulations.

3.6 The provisions of these specifications shall take precedence over the said rules and regulations in the event that these specifications indicate a higher quality or better standard.

3.7 Any extra work performed shall be approved in writing by the Owner or District's representative prior to the start of such work.

3.8 Any unapproved work will be at the contractor's expense.

3.9 All material and labor shall be free from any defects. Any defective work must be corrected immediately without additional cost to the District.

3.10 In the event of conflict between plans and specifications, the specifications shall take precedence. No additional compensation shall be considered for direction given by District personnel providing clarification to specifications in the event of conflict between plans and specifications.

3.11 No additional compensation shall be given as a result of any District generated punch list item or correction notice given to contractor in order to comply with specifications.

4.0 Submittals

4.1 7 days prior to pre-construction conference and prior to ordering irrigation materials, contractor must submit to the District a complete detailed list of all irrigation components to be used that are per plan and District specifications.

4.2 Any substitutions that are not per plan or District specifications must be submitted on a separate cover sheet clearly identified as “Irrigation Submittal Substitutes”. Any material that may be thought as equal by contractor will be determined solely by the District and shall also be based upon the required material consistency throughout the District. Substitution shall not be approved unless submitted as outlined. Submittals shall include but not limited to the following:

a. Title sheet indicating job name, contractor name, address, phone number, date of submittal and submittal number.

b. Index sheet indicating item number for each item, description of each item, manufacturer name and model number and the page that item that is within the submittal.

c. Manufacturer cut sheet of each item providing manufacturer address and phone number, warrantee information, all available model numbers and all available graphic illustrations.

d. Each model number to be used shall be circled or marked and highlighted to indicate exact model number, size, type and options to be used.

4.3 Submittals shall be submitted complete and be bound in a manner to allow disassembly for review, processing and digital archiving.

4.4 The District shall return without review any submittal that does not comply with the above mentioned format.

4.5 Three sets of submittals are required to be submitted. The District will retain two sets for record and inspection.

4.6 Submittals shall be stamped “Reviewed” if deemed to be consistent with District specifications. Submittals shall be stamped “Approved as noted” when minimal changes and/or notations have been made by the District. Submittals stamped “Rejected” do not conform to District specifications and must be corrected and re-submitted for review. Once approved submittals are received the contractor must install material per approved submittals.

5.0 Record Drawings

5.1 Record accurately on one set of black and white prints denoting variation in work from original drawings.

5.2 Dimensions shall be taken from two permanent points of reference including but not limited to sidewalks, pavement, curbs, street lights, buildings and fire hydrants, and shall be recorded on as-builts daily or as work is performed. All drafting must be clearly legible and dimensions shall be no smaller than 1/4" in size. For parkways, all second point of reference dimensions must be taken from face of curb when ever possible. All piping depths shall be shown on record drawings.

5.3 Show dimensions from the following locations:

a. Point of connection (P.O.C.)

b. Backflow prevention assembly, master valve and flow sensor

c. Routing of irrigation pressure mainlines and all directional changes

d. Routing of control wiring when separate from irrigation mainline

e. Future wire stub-out locations and quantities

f. Gate, ball and butterfly isolation valves

g. Irrigation control valves

h. Automatic controller, rain sensors and electrical conduits

i. Sleeves and pull boxes

j. Flush valves

j. Pressure regulators

k. Other related equipment (as directed by the District)

5.4 Maintain as-built drawings on site at all times. These drawings are subject to inspection at any time.

5.5 Make changes to reproducible drawings in ink (no ball-point pen). Erase or use eradicating fluid as needed when revising drawings. Make changes in a manner equal to the original drawings.

5.6 Contractor must submit as-built drawings (sepia mylars and two bond hard copies) to the District inspecting the site seven days prior to the start of the maintenance period for approval.

5.7 As-built measurements must be transferred to an AutoCAD .dwg and Adobe Acrobat .pdf digital file by the Landscape Architect or qualified draftsman prior to turn-over. All site lines must be black, mainline and valves must be red and dimensions must be blue.

5.8 Upon completion and approval of record drawing prints, transfer all information to reproducible mylars and provide two additional bond hard copies.

5.9 Field as-builts must be completed and ready for review at time of pressure test. No pressure line trenches will be allowed to be covered until field as-builts are reviewed and are deemed acceptable to be transferred to final record drawings.

5.10 All electrical conduits shall be included in the as-builts.

5.11 All as-builts shall include actual depths taken from top of pipe to final finish grade.

6.0 Controller Charts

6.1 As-built drawings shall be approved in writing prior to preparing controller charts.

6.2 Provide two controller charts for each controller supplied, showing the area covered by the automatic controller.

6.3 The chart shall be a reduced reproduction of the as-built system. If the controller sequence is not legible when reduced, enlarge it to a size that will be legible when reduced.

6.4 Charts shall be black line print with a different transparent color used to show area of coverage for each station.

6.5 Completed and approved charts must be laminated with 10 mil thick plastic.

6.6 Charts shall be completed and approved prior to final inspection of the irrigation system. Charts that are laminated prior to approval with corrections shall be revised without additional cost to the District. Controller charts shall be also be saved as an Adobe Acrobat .PDF file and submitted to the District.

6.7 Controller access. The District reserves the right to have complete access to the controller clocks for monitoring and controlling system failures. The contractor shall provide the District with two sets of all keys necessary for access to the controller clocks within the designated area. The keys will then become the property of the District.

7.0 Operation and Maintenance Manuals

7.1 Prepare and deliver to the District, prior to the start of maintenance, all required and necessary descriptive material in complete detail and sufficient quantity properly prepared in four individually bound copies. Describe the material installed in sufficient detail to permit qualified operating personnel to understand, operate and maintain all equipment. Each manual shall include the following:

a. Index sheet, stating contractor's address and telephone number.

b. Duration of guarantee period with guarantee forms.

c. List of equipment with names and addresses of manufacturer's local representatives.

d. Complete operating and maintenance instructions on all major equipment.

7.2 In addition to the maintenance manuals, provide the maintenance personnel with the instructions for major equipment and show written evidence to the District at the conclusion of the work that this service has been completed.

8.0 Spare Parts and Equipment

8.1 Prior to the start of maintenance prepare and deliver to the District, all required spare parts, tools and equipment. Spare parts, tools and equipment shall include but not limited to the following:

a. Two quick coupler keys with 3/4 inch bronze hose bib with hand wheel.

b. Two quick coupler lid keys

c. One valve box cover wrench or key

d. Two wrenches and screw drivers for adjustment and disassembly for each type of sprinkler head used in the irrigation system

e. One 5-foot tee wrench for operating isolation valves specified

f. Six extra sprinkler heads of each type and size used in the irrigation system

g. 25 extra drip emitters of each type used

h. Remote radio device for irrigation controller(s) for systems 30 stations or greater and if otherwise specified

9.0 Guarantee

9.1 Provide written guarantee in form approved that all work with defects in workmanship and materials will be repaired or replaced at no cost to the District for a period of one year from the date of acceptance by the District's representative.

9.2 Manufacturer’s warrantees does not relieve the contractor of liability under their guarantee but shall supplement the contractor.

9.3 This form shall be transferred onto the contractor's letterhead and must contain the following information on the following sheet:

Guarantee for Irrigation System

Contractor hereby guarantees that the irrigation system furnished and installed by

_____ is free from defects in materials and workmanship, and the work has been
(CONTRACTOR'S NAME)
completed in accordance with the drawings and specifications. The District agrees to not hold contractor responsible for ordinary wear and tear, unusual abuse or neglect as determined by the District. Contractor agrees to repair or replace any defects in material or workmanship, which may develop during the period of one (1) year from the date of acceptance, and also to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the District. Contractor shall make all mainline repairs or replacements within 36 hours of written notification and all other repairs or replacements within 7 days of written notice. If contractor fails to complete such repairs or replacements for mainline piping within 36 hours of written notice or any other repair within 7 days after receipt of such written notice, the contractor hereby authorizes the District to proceed on behalf of the contractor to have said repairs or replacements made and agrees to pay all cost including material, labor and equipment including a 10% administrative fee.

Project Name: _____

District: _____

Landscape Architect: _____

Location: _____

Signed: _____ Title: _____

Address: _____

Telephone: (___)_____

Date of Signature: _____

Notary:

10.0 Inspections

10.1 The contractor shall allow the District to inspect the project at any time throughout the duration of the project and shall provide safe access to all areas of the project for all visits.

10.2 No work shall be covered without inspection for all items listed in this section and any other items specifically requested by the District.

10.3 The District reserves the right to require inspection of any and all work listed below but not limited to the following:

Site inspections and notification time:

a.	Pre-construction conference	7 days
b.	Mainline/valve layout	48 hours
c.	Pressure line installation and testing	48 hours
d.	Lateral line and sprinkler installation	48 hours
e.	Coverage test	48 hours
f.	Final Inspection	7 days

10.4 Refer to *Section 24.0 Construction Specifications, 26.0 Planting Specifications,* and *Section 27.0 Maintenance Specifications required* construction, planting and maintenance inspections.

10.5 No field inspections will commence unless record drawings are current and available for observation upon request by the District's representative.

10.6 A copy of the allocated inspection quantities and associated cost based on each project size and type is available from the District for review.

11.0 Irrigation System Testing

11.1 District must be notified 48 hours prior to any irrigation testing or inspections.

11.2 Contractor shall perform a pressure test to all pressure lines in the presence of the District.

11.3 All pressure lines must be tested under hydrostatic water pressure at 150 pounds per square inch (PSI) and be proven watertight.

11.4 Pressure lines must maintain pressure for a period of 2 hours. If pressure drop occurs, contractor shall replace joints and repeat test until no pressure drop is achieved.

12.0 Pressure Line Observation

12.1 Prior to commencement of any trenching, contractor must mark-out proposed lines and obtain layout approval from the District. Approval from District does not relieve the contractor of any potential obstructions. Contractor must review all construction plans to avoid layout conflicts with any storm drain, electrical, gas, domestic water, cable television, data lines, trees etc.

12.2 Prior to any backfilling of any trench, contractor shall call for field observation for verification of material, depths, clearances and warning tape by the District. As-builts must also be reviewed for all pressure lines prior to backfilling.

12.3 Any trenching covered that was not inspected or approved shall be made visible for observation at the cost of the Contractor.

12.4 All pressure line trenches must be trenched wide enough to allow for control wiring to lay adjacent to pipe and maintain 1” clearance on each side from side of trench.

13.0 Lateral Line Observation

13.1 Prior to any backfilling of any trench, contractor shall call for field inspection for verification of material, depths and clearances by the District.

13.2 All sprinklers and assemblies shall be made visible for observation for verification that all material has been installed per plans and specifications.

13.3 All lateral line trenches must be trenched wide enough to allow 1” clearance between pipe and un-trenched soil.

13.4 Any trenching covered that was not inspected or approved shall be made visible for observation at the cost of the Contractor.

13.5 All above grade UVR piping shown on plans within 8 feet of any sidewalk or pathway shall be buried below grade per District detail.

14.0 Controller Testing

14.1 Prior to final acceptance contractor shall provide certification from manufacturer stating that controller specified on drawings has been installed per manufacturer's specifications and District communication requirements.

14.2 Contractor shall test in the presence of the District all control wires and extra control wires to confirm they are functioning properly.

14.3 Contractor must have all flow sensors, master valves, weather devices, booster pumps etc. installed prior to controller inspection.

14.4 Controller must have permanent power.

14.5 Contractor shall provide sufficient manpower and communication devices to complete such testing in a timely manner.

15.0 Coverage Test

15.1 Contractor shall perform a coverage test in the presence of the District. All irrigation sprinkler systems must provide 100% head to head coverage. Any areas not receiving head to head coverage shall be corrected and retested by the District.

15.2 Permanent power must be connected prior to scheduling of the coverage test.

15.3 All irrigation areas to be tested must be finish graded prior to coverage test.

15.4 Contractor shall provide sufficient manpower and communication devices to complete such testing in a timely manner.

15.5 All heads must be adjusted to prevent over spray to buildings, walks, streets etc. per Section 20.0.

15.6 No planting or hydro-seeding shall take place until coverage test has been approved in writing by the District.

15.7 Tree planting may commence after mainline is completed with approval from District.

16.0 Final Irrigation Inspection

16.1 All irrigation systems shall be tested in the presence of the District and be under complete automatic operation and proven to be leak free; irrigating designated areas per plans and specification without over spray.

16.2 Contractor shall provide AutoCAD and Adobe Acrobat .PDF files with as-built record drawings and controller charts at final irrigation inspection for approval prior to mylar transfer and laminating of controller charts.

16.3 All irrigation turn over items shall be turned in to the District prior to the start of maintenance.

17.0 Layout

17.1 Contractor shall layout irrigation mainline, valves, and sprinklers etc. for approval from the District. Layout approval is for compliance of District guidelines and does not relieve the contractor of the obligation to verify potential conflicts with existing utilities and other items to be installed i.e. trees, walls, concrete, etc.

18.0 Trenching and Backfilling

18.1 Contractor must contact Dig Alert prior to any digging.

18.2 No trenches are to be backfilled until approval from District has been acquired.

18.3 Excavate trenches straight and support pipe continuously on the bottom of trench per layout indicated on drawings.

18.4 All trenches must be 1” wider than piping.

18.5 All lines shall have a minimum clearance of 4 inches vertical and horizontal from each other and 24 inches from any other lines from other trades.

18.6 Provide the minimum cover as listed below:

a.	Pressure lines 4 inch and larger	30 inches
b.	Pressure lines 3 inch and larger	24 inches
c.	Pressure lines 2-1/2 inches and smaller	24 inches
d.	Lateral lines	12-inches (no more than 18”)
e.	Control wiring	24 inches (next to mainline)

18.7 Fine granular soil not larger than 1/2 inch shall be backfilled to achieve a 2 inch deep bedding below piping. Sand shall be used when site soil is unsuitable as determined by the District at no additional cost to the District.

18.8 Fine granular soil not larger than 1/2 inch shall be used for the initial 6 inches of backfill and shall be compacted to a density equal to undisturbed soil. Sand shall be used when site soil is unsuitable as determined by the District at no additional cost to the District. Clean backfill

soil not greater than 1 inch shall be used for remaining backfill and shall be compacted to 90% density.

18.9 No flooding shall be performed to compact trenches unless approved by the District.

18.10 Sand backfill a minimum of 3 inches shall be provided below and above all piping under paved areas.

18.11 If any settling occurs and if any irrigation adjustments are required, the contractor shall make these adjustments with no additional cost to the District.

18.12 Contractor shall install concrete thrust blocks for all pressure lines 2 inch and larger. Thrust blocks shall be a minimum size of one cubic foot. For bell and gasket pipe a joint restraint system shall be used instead of thrust blocks per manufacturer's specifications.

19.0 Flushing the System

19.1 Contractor shall flush all mainline piping and assemblies prior to installing control valves, quick coupler valves or other valves per plan to insure that no debris is present. Contractor shall repeat flushing as needed to achieve a clean and clear system.

19.2 Contractor shall flush all lateral piping and assemblies including all swing joints prior to installing irrigation heads, bubblers or emitters per plan to insure that no debris is present. Contractor shall repeat flushing as needed to achieve a clean and clear system. After all heads have been installed, contractor shall install all nozzles as needed.

20.0 Adjusting the System

20.1 The contractor shall adjust all irrigation heads, control valves, pressure regulators, etc. for optimum performance.

20.2 Because irrigation plans are diagrammatic, contractor shall be responsible for selecting the best nozzle to achieve head-to-head coverage at no additional cost to the District. All head and nozzle adjustments shall be shown on the record as-built drawings. All nozzles shall be adjusted to spray the arc and radius as specified per the manufacturer's nozzle performance chart. Nozzles for rotors and spray heads shall not be over tightened to achieve desired arc or radius in order to avoid replacing the nozzle with the appropriate size. Any nozzle for rotor or spray heads with poor spray patterns shall be replaced per the manufacturer's recommendations as directed by the District without any additional cost to the District.

20.3 All heads must be adjusted to prevent over spray on to buildings, walkways, streets etc.

21.0 Sleeving

21.1 All sleeving shall be 2 times the diameter of the pipe used. Minimum sleeve size shall be 2 inches.

21.2 All sleeving shall have minimum cover of 24 inches and a maximum cover of 36 inches under paving.

21.3 All sleeving shall extend 12 inches horizontally past paving.

21.4 All street sleeving must be installed per sleeving detail.

21.5 All trenches for sleeving must be compacted to 95% compaction using manual or mechanical taping device.

21.6 Contractor shall cap and pressure test all pressure lines under paving prior to backfilling and paving as requested by the District.

21.7 Contractor shall be responsible for the installation of all sleeves required for the irrigation system not listed in the drawings.

21.8 As-builts must be provided for all sleeves with two points of reference and shall also include depths of sleeves.

IRRIGATION SPECIFICATIONS (MATERIALS)

22.0 Backflow Prevention Devices

22.1 A backflow prevention device shall be installed for all irrigation. It shall be a pressure-reducing device approved by the Hesperia Water District and/or by the Foundation for Cross-Connection Control and Hydraulic Research.

22.2 Backflow assemblies shall be installed using brass ells, unions and nipples.

22.3 Type: Febco 825YA or approved equal.

22.4 Backflow device enclosure shall be constructed of powder coated steel painted green. Enclosure shall be poured in a concrete pad using steel hardware. Sentry Max Security Lock Down (800) 716-8071 (no known equal) A backflow device enclosure must be installed. Backflow device enclosures shall be VIT Strong Box SBBC-75SS along with VIT Strong Box SBBC-75HP backflow insulated cover (no exception).

22.5 Backflow prevention units and filters can be installed next to each other per District detail and share one large enclosure.

22.6 An approved double check backflow assembly shall be used when a fertigation system is used when recycled water is used. Type: Febco LF850 or approved equal.

23.0 Pressure Reducing Valves

23.1 Pressure reducing valves shall be of bronze and stainless steel construction and be adjusted from 25 P.S.I. to 125 P.S.I.

Manufacturer: Wilkens 500HLR or approved equal.

24.0 Wye Strainers

24.1 Wye strainer shall be bronze construction with a stainless steel screen element. Wye strainer shall have a standard filtration size of 80 mesh.

Manufacturer: Wilkens 100YSBR or approved equal.

25.0 Shut off Valves

25.1 Ball Valve:

a. Shut off valves 2 inch and smaller shall be brass ball valves.

b. Brass ball valves shall be threaded forged brass 1 CU>57% with a working pressure of 400 PSI. Ball valve shall have a vented ball with a blowout proof system. Ball valves shall conform to AWWA standards.

Manufacturer: Nibco T-580-A or approved equal.

25.2 Butterfly Valves:

a. Shut off valves 2-1/2" through 3" inch and larger shall be butterfly valves.

b. Butterfly valves shall have a ductile iron body according to ASTM A-536 with extended neck, geometric drive, molded-in seat liner and shall be lug style with standard ANSI Class 125/150 flanges. Stem shall be stainless steel ASTM A 582 Type 418. Stem and body seal shall be EPDM Rubber Butterfly valves shall be equipped with a 2-inch square operating nut. Butterfly valves shall have a working pressure of not less than 200 P.S.I. and shall conform to AWWA standards. Butterfly valves shall have a ductile iron porcelain enamel coated disc.

c. Flange adapters for butterfly valves where needed to connect to mainline shall be SCH 80 PVC.

Manufacturer: Nibco LD-2000-5 or approved equal.

25.3 Gate Valves:

a. Shut off valves 4" and larger shall be self restrained, resilient wedge gate valves.

b. Gate valves must conform to AWWA C-515 standards, rated for 250 PSI.

c. Gate valves shall have ductile iron parts and must be coated with fusion bonded epoxy that meets AWWA C550 standards.

d. Gate valves shall have a 2-inch square operating nut.

e. Gate valves shall have a shroud around the operating nut to provide dirt-free access to activate the valve.

Manufacturer: Leemco LMV BB Series or approved equal

26.0 Quick Coupler Valves

26.1 Quick coupler valves shall have a body constructed of red brass with a wall thickness guaranteed to withstand normal working pressure of 150 P.S.I. without leakage with female threads (penning at base). Quick coupler valve shall have a hinge cover constructed of red brass with leather like vinyl cover bonded to it in such a manner that it becomes permanent type of cover. Quick couplers used with potable water shall have vinyl covers yellow in color. Quick coupler valves used for recycled water shall have vinyl covers purple in color with the appropriate recycled water warnings in English and Spanish as well as the "Do Not Drink" symbol.

26.2 All quick coupler valves must have a brass ball valve to isolate mainline from quick coupler valve. Mainline shall be the size of quick coupler valve from mainline tee to quick coupler.

26.3 A 1" quick coupler shall be installed every 100' in each landscaped site. A shut off valve must be installed inline 3' away from the quick coupler.

Manufacturer: Potable Water: Rainbird 44LRC or approved equal
Recycled Water: Nelson # 7645, Signature-ACME or approved equal

27.0 Remote Control Valves

27.1 The remote control valve shall be normally closed 24 VAC solenoid actuated globe pattern, spring-loaded diaphragm type. The valve shall be pressure rated up to 200 P.S.I. at 150 degrees F. Valve shall have a durable glass-filled nylon construction.

27.2 The valve shall have a 600-pound test fabric reinforced rubber diaphragm assembly with self-cleaning stainless steel screen.

27.3 Remote control valve body and bonnet shall be brass and the valve shall have a stainless steel control shut-off stem and manual operator.

27.4 Valve shall have a nylon scrubber that scrapes a stainless steel screen to clean and break down grit and plant material.

27.5 Valve shall have a pressure regulating solenoid module (PRS-D) for all lateral lines with fixed spray nozzles or rotors.

27.6 Valve shall have a purple handle when recycled water is used.

27.7 All remote control valves shall have Christy or approved equal plastic molded valve identification tags with corresponding controller and valve number. Purple numbered identification tags with the "Do Not Drink" symbol on the back shall be used when recycled water is used.

Manufacturer: Rainbird PESB-PRS-D or approved equal.

28.0 Master Control Valves

28.1 The master control valve shall be a switch-able normally closed or open 24 VAC solenoid actuated globe pattern, spring loaded diaphragm type. The valve shall have up to 400 P.S.I. at 150 degrees F. pressure rating.

28.2 The master valve body, bonnet and internals shall consist of 316 stainless steel.

28.3 Water shall not flow through or around the metering pin but external of the valve via stainless steel braided tubing and brass inserts.

28.4 The valve shall have a 600-pound test fabric reinforced rubber diaphragm assembly with self-cleaning stainless steel screen.

28.5 The master valve shall have a pressure reducing control valve with solenoid (on/off) and surge anticipation relief feature when used for large systems. Pressure regulator shall have a 316 stainless steel body and cover with stainless steel and EPDM internals. Solenoids shall be 0.08 amp holding current.

28.6 Install down stream of filter.

28.7 All wiring for master valves shall be installed in a separate conduit from the master valve to the controller.

28.8 Red wires from master valve solenoid shall be connected to the controller "MV" and "MV Common" terminals. Green wire is not required to be grounded and can remain unconnected.

28.9 All master valves shall have Christy or approved equal plastic "MV" molded valve identification tags. Purple identification tags with the international "Do Not Drink" symbol on the back shall be used when recycled water is used.

28.10 All wire connections for master valves shall be soldered in addition to the wire connectors per section 38.0.
Manufacturer: Griswold 2000 Series (or approved equal)

29.0 Flow Meter

29.1 Flow meter shall be constructed of a schedule 80 tee whenever possible with a solid state o-ring sealed epoxy fused sensor housing and nylon impeller. Flow switch sensitive to flows as low as 1 foot per second (FPS) mounted on piping and interconnected to time delay relay to shut down pump for no flow conditions, time delay relay adjustable from 0 to 5 minutes

29.2 Flow meter must be installed and wired per manufacturer's specifications.

29.3 Irrigation zones must be sized so that the specified flow meter is capable of reading the minimum and maximum gallons per minute for all proposed zones.

29.4 Install directly down stream of master valve.

29.5 All wiring for flow meter shall be installed in a separate conduit from the flow meter to the controller.

29.6 All flow meters shall have Christy or approved equal plastic “FM” molded valve identification tags. Purple identification tags with the “Do Not Drink” symbol on the back shall be used when recycled water is used.

29.7 All wire connections for flow meters shall be soldered in addition to the wire connectors per *Section 38.0*.

Manufacturer: Calsense FM-X

30.0 Rain Sensor

30.1 Rain sensor shall be a heavy-duty plastic container with epoxy sealed electronics installed within a 1/8-inch thick steel enclosure. Mount sensor on controller enclosure or building eave per manufacturer's specifications. Sensor shall be wired per manufacturer's specs.

30.2 The sensor must be housed within a stainless steel vandal proof enclosure by the manufacturer.

Manufacturer: WCS Rainguard

31.0 Main Line Filtration Device

31.1 Filter shall be constructed of heavy-gauge steel which is fusion epoxy lined with 3M Scotchkote® 134 with a Maxi-Clean® rugged polymeric screen 150-mesh filtration element with a stainless steel basket.

31.2 Filter shall have a flush port that shall be connected to an automatic flush valve per District Auto Flush Detail.

31.3 Filter shall have an easy-open lid that allows cartridge removal

31.4 Filter must comply with all current local water district requirements.

31.5 Filter shall be powder coated purple when recycled water is used.

31.6 Filters shall be installed for potable and recycled water systems.

31.7 Filter must have an automatic remote control valve with control wiring connected to irrigation controller for automatic flushing per filter detail.

31.8 Auto flush valve must be connected to DRIP 2 program within the Calsense controller for District monitoring.

31.9 Filters must have a discharge piping and sump to capture automatic flushing.

Manufacturer: Yardney MCS-XX Series or approved equal.

32.0 Lateral Line Filtration Device

32.1 Lateral line filters shall be installed directly after each drip remote control valve.

32.2 Filter body shall be made from impact resistant glass filled polypropylene with a glass filled nylon cap.

32.3 Filter shall have an indicator bubble to insure filter will be cleaned as needed.

32.4 Filter screen shall be stainless steel. Mesh size shall be 75/100.

32.5 Two filters shall be used at each valve when flows are between 20.0 and 40.0 GPM.

Manufacturer: Rainbird QK-CHK or approved equal.

33.0 Booster Pump

33.1 Booster pumps shall be as manufactured by Barrett Engineered Pumps, San Diego, California (619) 232-7867. The project irrigation consultant and pump engineer shall determine pump based upon District requirements for each specific project.

33.2 Booster pumps must be controlled by a flow switch activator. Pump relay switches will not be allowed without written approval.

33.3 Booster pumps must be pre-assembled from the manufacturer and have an aluminum marine grade lockable enclosure.

33.4 Pump size, pressure regulator settings and relay timing shall be determined by the irrigation consultant and the pump manufacturer and approved by District.

33.5 Booster pumps shall have variable frequency drive (VFD) motors.

34.0 Automatic Controller

34.1 The controller shall operate on a minimum of 120 volts A.C. power input and shall be capable of operating up to four 5.5 VAC 24 volt A.C. remote control valves at once. The controller shall have a reset circuit breaker to protect the controller from overloading.

34.2 The controller shall have independent programmable stations. The controller-programming schedule shall be capable of allowing four automatic start times per day on four separate programs. Station timing shall be variable from 1 to 99 minutes. The controller must have a water budgeting function to allow increasing or decreasing of watering times for all stations at once.

34.3 The controller shall have a master valve/remote pump start circuit for use with a master valve to pressurize the system when the programmed cycle starts to activate a remote pump start relay to run the pump during the programmed cycle.

34.4 The controller shall have manual watering capabilities for single station operation at any time without changing programmed times.

34.5 The controller shall have a factory installed backup program for standby operation and a backup battery to maintain the programs during power loss.

34.6 Install one extra 1-1/2" inch conduit to controller for future use.

34.7 Contractor shall be responsible to communicate with Calsense to insure that all of the required components are ordered and installed per the District's requirements as determined by Calsense for each individual project.

34.8 Architect must provide the following information to Calsense:

a. Project name and tract number

b. Project location-cross streets or address if applicable

c. Number of controllers on the project and proposed specification

d. Number of water meters on the project

Example (ET2000-e-24-LR-RR-SSER) This is important to make sure that the specification is correct for application and location.

34.9 The architect must obtain a letter from Calsense confirming District compliance.

34.10 Controller compliance letter must be attached with first irrigation plan submittal.

34.11 Controller shall be a minimum of 5 feet away from any 3 phase power.

34.12 Upon completion a Calsense installation certification must be submitted: Contractor will provide Hesperia Recreation and Park District a Calsense letter of certification prior to requesting final inspection of irrigation control system. This letter can be obtained from a Calsense Field Service representative once all Calsense equipment has been installed per manufacturer specifications. Contact Calsense at 1-800-572-8608 to arrange certification.

Manufacturer: Calsense ET-2000e. Contact Bob Moxley with Calsense at (800) 572-8608 for specific District requirements and communication components as determined per project. Note: A phone line may be required based upon Calsense radio survey.

35.0 Controller Enclosure

35.1 All controllers installed outside must be mounted inside a stainless steel enclosure with lockable-hinged doors provided by the controller manufacturer.

35.2 The enclosure shall have one full time 120 VAC GFCI type circuit with on/off switch and pigtail connection for remote control use.

Manufacturer: Calsense SSE-R.

36.0 Electrical Pedestal

36.1 All electrical pedestals must be stainless steel

36.2 All electrical pedestals must comply with local electrical code and agency requirements and permits.

Manufacturer: Strongbox #MPS-A16-10K or approved equal

37.0 Control Wiring

37.1 All control wiring for connections between remote control valves and controllers shall be direct burial AWG-F wire installed in accordance with manufacturer's specifications.

37.2 All required splices in the event of project phasing shall be approved by the District and be sealed with waterproof connectors and waterproof sealant and must be installed in a pull box. Wire must be up-sized one size for each splice.

37.3 All wire connections for remote control valves must be connected with 3M DBR-6 connectors.

37.4 All wire connectors for master valves and flow sensors must be connected with 3M DBR-6 connectors with a hardener applied inside of wire nut.

37.5 All extra wires shall be sealed with waterproof connectors.

37.6 Wiring shall be buried adjacent to mainline wherever possible and for more than one wire they shall be bundled at every ten feet using black electrical tape.

37.7 24 inch expansion curls shall be provided within three feet of each connection and at all changes in direction. Provide a 24 inch expansion loop for every 100 feet of run.

37.8 Wire size shall not be less than #14. Provide #12 for runs over 2500 feet.

37.9 All common wires shall be #12.

37.10 Control wires shall be black in color. If additional controllers are installed, provide different color control wires for each controller.

37.11 Common wire shall be white in color. If additional controllers are installed provide white wire with colored stripe. Stripe to be same color as control wire color.

37.12 Contractor shall provide one extra wire for every five valves and two extra wires shall be provided for every valve in any isolated area and the extra wires shall extend past the last valve in a group. Extra wires shall be orange in color and looped in every valve box and made accessible for future use if needed.

37.13 No wire splices shall be permitted unless run is longer than 2500 feet or approved by District's representative.

Manufacturer: Paige or approved equal.

38.0 Valve Boxes

38.1 All valve boxes for irrigation valves shall be made of HDPE structural foam conforming to ASTM D1248 with a tensile strength of 3,000 to 4,400.

38.2 Rectangular valve boxes shall be 12 inch wide by 17 inch long and 12-1/4 inch high. Rectangular lids shall have a lip (t-cover) to overhang box. Rectangular boxes shall be Carson #1419-4 or approved equal.

38.3 Round valve boxes shall be 10-inch diameter and 10 1/4 inch high. Round lids shall have a lip (t-cover) to overhang box. Round boxes shall be Carson #910-4 or approved equal.

38.4 Jumbo valve boxes shall be used when needed and as indicated in District details. Jumbo boxes shall be 14-7/8 inch wide by 21-7/16 inch long and 12 inches high or larger as needed

to accommodate valve(s). Jumbo box lids shall have a lip (t-cover) to overhang box. Jumbo boxes shall be Carson #1220-4 or approved equal.

38.5 Valve boxes shall have locking covers secured with a 3/8-inch stainless steel bolt and washer.

38.6 Rectangular valve boxes shall be used for control valves, master control valves, pressure regulators, flow sensors, wye strainers, filtration devices, ball valves and pull boxes.

38.7 10” Round valve boxes shall be used for quick coupler valves, flush valves, butterfly valves and resilient gate valves.

38.8 All valve boxes to be green in color unless otherwise specified for use of recycled water. All valve boxes for recycled water shall be purple in color and bear the recycled water warnings as well as the "Do Not Drink" symbol.

38.9 Heat brand all box lids with the appropriate two-inch high identification letters and/or numbers as indicated on District details.

38.10 All valve boxes shall have ½” square spaced hot dipped galvanized welded wire mesh at bottom opening and side pipe openings to prevent rodent entry.

38.11 All rectangular valve boxes shall receive 3 cubic feet of ¾ inch gravel per detail. All round valve boxes shall receive 1 cubic foot of ¾ inch gravel per detail.

38.12 All valve boxes shall have 4 common bricks.

38.13 Valve boxes shall not be cut past the knock-out to insure that valves are not placed too high for lid to close properly without touching lid cover and to not alter the strength of the valve box.

Manufacturer: Carson or approved equal.

39.0 General Piping

39.1 Pressure line from point of connection to master valve shall be brass or Type K copper.

39.2 Pressure line from master valve to isolation valves, remote control valves and quick couplers shall be PVC piping per plastic pipe specifications.

39.3 Pressure lines 2" and smaller after master valve shall be Schedule 40 solvent weld PVC.

39.4 Pressure lines 2-1/2 inch to 3 inch after master valve shall be Class 315 solvent-weld PVC.

39.5 Pressure lines 4 inch and larger after master valve shall be Class 200 bell and gasket PVC. All bell and gasket connections for all piping shall be iron ductile fittings with restraints including all bell and gasket couplings. All piping connected to any tee, elbow, cap or other fitting regardless of change of degree shall be restrained including pipe to pipe connections.

39.6 All pressure line piping shall have blue metallic detecting warning tape installed 6 inches above all piping. Warning tape for recycled water piping shall be purple metallic warning tape.

39.7 Lateral lines 1-1/2 inch and smaller shall be Schedule 40 solvent-weld PVC.

39.8 Lateral lines 2 inch and larger shall be Class 315 solvent-weld PVC.

39.9 All pipe and fittings shall bear the markings of the Manufacturer's name, nominal pipe size, pressure rating P.S.I., NSF, schedule or class and date of extrusion.

39.10 All solvent weld pressure line piping shall be primed with approved primer and glued with approved glue suitable for current weather temperatures as authorized by the District. All

lateral lines shall be glued with approved glue suitable for current weather temperatures as authorized by the District. All above grade UVR piping shall be primed with approved primer and glued with approved glue suitable for current weather temperatures as authorized by the District.

40.0 Plastic Pipe

40.1 Solvent weld pipe shall conform to ASTM D 1784 or D 2241 to meet the requirements of cell classification 12454B for pipe. Pipe shall be extruded of an improved PVC virgin pipe compound high impact strength. Compound shall have a hydrostatic design stress rating of 2,000 P.S.I.

Manufacturer: Pacific Plastics or approved equal.

40.2 Rubber gasket PVC pipe shall conform to ASTM D-1784 Type I, Grade I 2,000 P.S.I. design stress. All pipes shall conform to commercial standards CS-256-64 and NSF testing laboratories. Rubber gaskets shall conform to ASTM 1869.

40.3 Recycled water pipe shall conform to ASTM D1784 or D 2241 to meet the requirements of cell classification 12454B for pipe. Pipe shall be extruded of an approved PVC virgin pipe compound high strength. Compound shall have a hydrostatic design street rating of 2,000 P.S.I. Recycled water pipe shall be purple in color and bear the words "CAUTION - RECYCLED WATER" printed in black letters on two sides of all pipes.

40.4 Ultra Violet Resistant (U.V.R.) pipe shall conform to ASTM D 1784 or D 2241 to meet the requirements of cell classification 12454B for pipe. Pipe shall be extruded of an approved PVC virgin pipe compound high strength. Compound shall have a hydrostatic design street rating of 2,000 P.S.I. U.V.R. pipe shall be manufactured using material proven to resist corrosion by ultra-violet radiation. Pipe shall be brown in color.

Manufacturer: Pacific Plastics or approved equal.

41.0 Fittings

41.1 All pressure line fittings 3 inch and smaller shall be Schedule 80 solvent weld PVC Fabricated pipe shall be from an NSF approved Type I, Grade I, PVC compound conforming to ASTM D-1784.

Manufacturer: Dura, Lasco or approved equal.

41.2 All pressure line fittings including couplings 4 inch and larger shall be iron ductile, slanted, deep bell, gasketed style made in accordance with ASTM A-536, Grade 65-45-12. Rubber for gaskets in fittings shall be in accordance with ASTM-477.
All ductile iron parts must be coated with fusion bonded epoxy that meets AWWA C550 standards. All iron ductile fittings shall have iron restraints that are made in accordance with ASTM A-536. Exterior bolts and nuts to secure a joint restraint system shall be 304 stainless steel.

Manufacturer: Leemco or approved equal.

41.3 All lateral line fittings after remote control valves shall be Schedule 40 solvent weld PVC. Fabricated pipe shall be from an NSF approved Type I, Grade I, PVC compound to ATTM D1784.

Manufacturer: Dura, Lasco or approved equal.

41.4 Provide primer and solvent cement for all PVC solvent weld pipe and fittings of specified type by manufacturer's recommendations.

Manufacturer: Weld-on or approved equal.

41.5 All fittings shall have the manufacturer's name, trademark and size applicable NSF or IPS approval.

41.6 All threaded fittings shall have ¾ inch teflon tape wrapped one and a quarter times.

42.0 Brass Pipe and Fittings

42.1 Brass pipe shall be in accordance with American National Standard Institute and be 85 percent Schedule 40 red brass.

42.2 Brass fittings shall be threaded 125-pound class.

42.3 All threaded fittings shall have ¾ inch teflon tape wrapped one and a quarter times.

43.0 Galvanized Steel Pipe and Fittings

43.1 Galvanized steel pipe shall be Schedule 40 hot dipped galvanized.
All galvanized pipe and fittings shall be approved for use in writing by the District.

43.2 All threaded fittings shall have ¾ inch teflon tape wrapped one and a quarter times.

44.0 Low Volume Emitters

44.1 Low volume emitters shall have a threaded inlet with one-half inch female threads so that it may be screwed onto a standard one-half inch male threaded fitting or nipple. The emitters shall be available in flow rates of one-half, one, two and four gallons per hour. Each outlet of each emitter shall be fully pressure-compensated and self-flushing with a diffuser cap. The outlet of the emitter shall have a separate silicone elastomeric control element to provide pressure compensation.

44.2 Features shall include:

a. Stamped flow and color coded cap for easy installation.

b. Fully pressure compensating design delivers uniform flow throughout a wide pressure range (5-45 psi; 0.33-3 bars), regardless of pressure inconsistencies (from elevation changes, etc.).

c. 2" FIPT (PST) or barbed base (PS) configuration to handle every design situation.

d. Available in flow rates of 0.5, 1, and 2 GPH. Flow rates and flow direction are clearly molded into diffuser cap.

e. Rugged design using UV inhibiting engineering grade plastics to ensure maximum life span.

f. Barbed emitters are compatible with PVC or polyethylene tubing. 1/2" FIPT emitters are compatible with all standard 1/2" MIPT fittings.

44.3 Operating range shall be P.C. flow: 0.5, 1, 2 & 4 GPH.

44.4 Pressure: 5-65 PSI.

44.5 Filtration: 80-150 mesh.

Manufacturer: GPH Products SpecFlow GPST2 Series, Salco ProSpec, Bowsmith SL220 or approved equal.

45.0 Flexible Riser Tubing

45.1 Flexible tubing shall be non-rigid poly-vinyl-chloride (PVC) hose, extruded from integrally compounded algae-resistant S-0214 material that shall conform to all of the following: Hardness (A Shore) - 92 to 86 tested per ASTM Method D2240 Specific Gravity, nominal - 1.42 +/-.02 tested per ASTM Method D792(A). 100% Modulus: -1800 (psi) Tensile Strength, minimum - 2450 (psi) tested per ASTM Method D412 Brittleness Temp., maximum -20 C tested per ASTM Method D746(A) Elongation: -270%.

45.2 Algae resistant hose shall be in compliance with ASTM F-21-70* (Fungus Testing) and ASTM G-42* (Algal Testing). Hose shall be uniformly black in color, smooth inside and outside, free of foreign material contamination and have no cracks, pinholes, dents, wrinkles or blisters.

45.3 Tubing shall be UV and algae resistant.

45.4 PVC supply tubing shall be compatible with schedule 40 slip fittings of the corresponding size. The fittings shall be solvent welded.

45.5 All tubing shall have P-70 or equal primer applied with IPS-795 PVC solvent cement for SCH 40 fitting connections.

45.6 Tubing thickness shall be no smaller than 0.50" inside diameter, 0.68" outside diameter and a minimum wall thickness of 0.09".

Manufacturer: GPH Products Model #GPVCAR050IPS or approved equal.

46.0 Flexible Riser Fittings (Black PVC Fittings)

46.1 Flexible riser fittings shall be used in conjunction with flexible or rigid PVC pipe.

Durometer Hardness	- 90D tested per ASTM D2240
Tensile Strength, minimum	- 4,700 psi tested per ASTM D412
Brittleness Temp., maximum	- 15 C tested per ASTM D746(A)

Manufacturer: GPH Products Model #G436, Salco SLV-436-073B or approved equal.

47.0 Flexible Riser Assembly

47.1 Flexible riser assemblies (IH-Series) shall be used for all plant material when possible.

47.2 Flexible riser assemblies shall be made from non-rigid vinyl-chloride ½" irrigation hose (3/8" IPS) extruded from integrally algae-resistant poly-vinyl chloride (PVC) resin conforming to ASTM Designation D2287 with the following characteristics:

Durometer Hardness (A Scale) - 88 to 94 tested per ASTM Method D2240
Specific Gravity, nominal - 1.40 to 1.44 tested per ASTM Method D792(A)
Tensile Strength, minimum - 1,800 psi tested per ASTM Method D412
Brittleness Temp., maximum - 15 C tested per ASTM Method D746(A)

47.3 The IH Series is available in any length required.

47.4 The hose shall be uniformly black in color, homogeneous throughout and smooth inside and outside, free from foreign materials, cracks, holes, dents, wrinkles and blisters. The shape must remain concentric for proper contact with the fittings.

47.5 The rigid vinyl-chloride fittings are to be BLACK in color and ½" Irrigation size (3/8") slip x ½"

threaded. The solvent used to weld the hose and fittings together must meet the designation by GPH to conform with the assembly process. A thorough coating of primer (# P-70) shall be used to conform with proper welding techniques.

Manufacturer: GPH Products Model #GIHXXA, Salco SLV-PVC-ACL or approved equal.

48.0 Irrigation Heads (General)

48.1 All irrigation heads shall be the size, type, and provide the same rate of precipitation with the same radius of spray, pressure and discharge in G.P.M. as listed on drawings.

48.2 All spray head sprinklers shall have stainless steel screw adjustment for radius of spray.

48.3 Riser and swing joint assemblies shall be as indicated on drawings.

48.4 All irrigation heads shall have a factory installed check valve or have an after market check valve installed.

48.5 All other requirements for non-pressure lateral line pipe to be as specified in fitting specification section.

48.6 In no case shall the irrigation head spacing exceed the maximum manufacturer's recommendation.

48.7 Irrigation heads shall be installed ¾" above finish grade for turf areas and flush with all sidewalks, curbs, paving, etc. Irrigation heads in planter areas shall be installed 2" above finish grade and flush with all sidewalks, curbs, paving, etc.

48.8 All sprinkler heads shall be set perpendicular to finish grades.

48.9 All sprinklers in turf areas shall have a minimum pop-up height of six (6) inches.

48.10 All sprinklers in planter/slope areas shall have a minimum pop-up height of twelve (12) inches.

49.0 Bubblers

49.1 Bubblers shall be constructed of heavy duty plastic and be pressure compensation full circle. The bubbler shall have a screen to protect the nozzle from clogging.

49.2 Bubblers shall be preset to 1.0 GPM and operate between 20-90 PSI.

Manufacturer: Rainbird 1404 Series, Rainbird RWS-B-1401-RWS-SOCK or approved equal.

50.0 Sprinkler Heads

50.1 The sprinkler body, nozzle, stem and screen shall be molded out of heavy duty plastic.

50.2 Pop-up height shall be as listed in drawings and in no case shorter than 6 inches.

50.3 The sprinkler shall have an adjustment screw used for regulating flow and radius with matched precipitation rate (MPR) nozzle.

50.4 The sprinkler shall have a removable screen to protect it from clogging.

50.5 The sprinkler shall have a stainless steel spring for proper pop down.

50.6 The sprinkler shall be equipped with a factory installed check valve identified on the cap and capable of holding water up to 10 feet of elevation change.

50.7 The sprinkler shall be equipped with a factory installed pressure-regulating device constructed of stainless steel and heavy-duty plastic capable of maintaining a pressure of 45-70 PSI for operation of the sprinkler unless specified for rotary nozzles.

50.8 Fixed spray nozzles shall have matched precipitation rates per valve to insure distribution uniformity.

Manufacturer: Rainbird SAM-PRS or approved equal.

51.0 Sprinkler Heads for Rotary Nozzles

51.1 The sprinkler body, nozzle, stem and screen shall be molded out of heavy duty plastic.

51.2 Pop-up height shall be as listed in drawings and in no case shorter than 6 inches.

51.3 The sprinkler shall have an adjustment screw used for regulating flow and radius.

51.4 The sprinkler shall have a removable screen to protect it from clogging.

51.5 The sprinkler shall have a stainless steel spring for proper pop down.

51.6 The sprinkler shall be equipped with a factory installed check valve identified on the cap and capable of holding water up to 10 feet of elevation change.

51.7 The sprinkler shall be equipped with a factory installed pressure-regulating device constructed of stainless steel and heavy-duty plastic capable of maintaining a pressure of 40-45 PSI for operation of rotary nozzles.

51.8 Rotary nozzles shall have matched precipitation rates per valve to insure distribution uniformity.

Manufacturer: Rainbird SAM P45, Hunter MPR 40 or approved equal.

52.0 Rotor Heads (Medium Range)

52.1 All pop-up rotors shall have a rubber cover and be constructed of heavy duty plastic except for wiper seal, bearing spring and bearing washers. All rotors to have a reinforced rib design with flange encasement.

52.2 Pop-up height shall be as listed in drawings and in no case be shorter than 5½ inches.

52.3 The rotor shall have a diffuser pin for regulating flow and radius.

52.4 The rotor shall have a screen to protect it from clogging and have a minimum inlet of 3/4 inch.

52.5 The rotor shall be capable of covering 16-55 feet radius at 40-60 PSI with a rate of .5 - 9.2 GPM. and be adjustable from 1-360 degrees. All rotors designated for center 360 degrees rotation shall be full circle.

52.6 Rotor nozzles shall have matched precipitation rates per valve to insure distribution uniformity.

Manufacturer: Hunter I-20, Rainbird 5000 Plus or approved equal.

53.0 Rotor Heads (Large Range)

53.1 All pop-up rotors shall have a rubber cover and be constructed of heavy duty plastic except for wiper seal, bearing spring and bearing washers. The riser shall be constructed of plastic encased in a stainless steel sleeve. All rotors to have a reinforced rib design with flange encasement.

53.2 Pop-up height shall be as listed in drawings and in no case be shorter than 5 inches.

53.3 The rotor shall have a diffuser pin for regulating flow and radius.

53.4 The rotor shall have a screen to protect it from clogging and have a minimum inlet of 1 inch.

53.5 The rotor shall be capable of covering 16-55 feet radius at 40-74 PSI with a rate of 3.8 - 27.5 GPM. and be adjustable from 1-360 degrees. All rotors designated for center 360 degrees rotation shall be full circle.

53.6 Rotor nozzles shall have matched precipitation rates per valve to insure distribution uniformity.

Manufacturer: Hunter I-25, Hunter I-40, Rainbird 7005 or approved equal.

54.0 Turf Dripline

54.1 All turf areas within 24” of a non-permeable surface where run-off will occur off-site shall be irrigated with dripline to be in compliance with AB1881.

54.2 Dripline shall be a flexible polyethylene tubing with a factory installed pressure compensating, inline emitters spaced evenly at 12” spacing. The flow rate shall be from 0.6 to 0.9 when inlet pressure is between 8.4 and 60 psi.

54.3 Tubing shall have an OD of 0.6364” and an ID of 0.536” with a wall thickness of 0.049”.

54.4 The inline emitter diaphragm shall have a pressure-regulating diaphragm with a spring action allowing it to self-rinse if there is a plug at the outlet hole. The flexible tubing shall allow for easy non-linear installation.

54.5 The inline emitter inlet shall have copper shield technology installed to protect the emitter from root intrusion.

54.6 The inline emitter inlet shall be raised off the inside tube wall to minimize dirt intrusion.

54.7 Dripline valve shall have a filter with a 120 mesh for filtration that must be installed after the remote control valve.

54.8 Dripline shall be installed per Rainbird’s *Sub-Surface Drip Irrigation Installation and Maintenance Guide* and as directed by the District.

Manufacturer: XF™-SDI Series Dripline #XFS-06-12, Rainbird or approved equal.

55.0 Additional Miscellaneous Items

55.1 All pipe above grade shall be UVR PVC and must be stabilized with j-hooks at every 10 feet. J-hooks shall be #3 x 9 inch black epoxy rebar. When UVR PVC is used in sandy soils, epoxy coated rebar J-hooks must be 12 to 18 inches long as required to properly stabilize the pipe in place.

55.2 All assemblies requiring rebar stabilizing rods per plan and details shall be with #4 x 30 inch rebar and supported by vandal proof clamps constructed of stainless steel installed with a tool specifically designed for the process.

55.3 Contractor shall install metallic warning tape over all pressure supply lines with a cover of 12 inches from grade. Warning tape for potable water shall be blue in color and the words, "CAUTION WATER LINE" permanently attached to tape. Warning tape for recycled water shall be purple in color and the words, "CAUTION RECYCLED WATER" permanently attached to tape. Warning tape shall be 3" wide minimum.

55.4 Contractor shall provide identification tags with the number labeled for each valve attached the each valve. For potable water the tags shall be yellow in color with black lettering. For recycled water the tags shall be purple in color with black lettering.

55.5 All utilities, valve boxes, valves, sprinklers, quick couplers, etc. shall either have purple caps or purple colored covers or tags as provided by the manufacturer for use of recycled water.

56.0 Water Supply

56.1 The Irrigation system shall be connected to water supply as shown on drawings. Contractor shall notify Architect and District immediately of any discrepancies.

56.2 The Contractor shall be responsible for any minor changes due to actual site conditions.

57.0 Electrical Supply

57.1 Contractor to coordinate final location of controller with job site Superintendent and District.

57.2 Prior to installation of controller contractor to verify that all required electrical equipment is accessible for complete installation.

57.3 Electrical connections and equipment must be as listed in controller installation section and per manufacturer's specifications and local codes.

57.4 Electrical enclosures shall be stainless steel per *Section 37.0*.

58.0 Grades

58.1 Prior to commencing any work the contractor shall carefully check all grades and verify that after all irrigation work and soil preparation is completed, all grades will be per specified depth as per the landscape contractor's scope of work with a +- .10 of a foot. No ponding shall be allowed.

59.0 Maintenance

59.1 Contractor shall maintain entire irrigation system to an acceptable condition to the District for the period of 90 days.

59.2 All irrigation piping, valves, filters and pressure regulators shall be regularly flushed.

59.3 All rotors and sprinkler heads shall be checked and adjusted as needed to provide optimum watering.

59.4 All valve box vaults shall be cleaned to insure that no soil has entered into the box. All lids shall be secured with locking bolts. All damaged valve box lids shall be replaced.

59.5 Contractor shall provide a current irrigation schedule for all controller programming at end of maintenance period.

60.0 Clean-Up

60.1 Clean up shall take place on a daily basis, after each portion of work has been completed and as directed by the District. The contractor shall legally remove from site any trash or additional material from project.

61.0 Final Approval

61.1 All irrigation shall be tested in its entirety by the District and approved in writing before commencement of planting and hydro-seeding except for trees as directed by the District.

61.2 Contractor shall provide all charts, record drawings, turn over items etc. as listed in Irrigation (General) Section prior to commencement of maintenance.

- END OF SECTION -

26.0 Planting Specifications

PLANTING

PLANTING SPECIFICATIONS (GENERAL)

1.0 General Requirements

1.1 "The District" shall be considered Hesperia Recreation & Park District inspection personnel, consultants or other approved team members hereafter.

1.2 Contractor shall obtain and pay for any permits required.

1.3 All work under this section shall be performed under the supervision of a current C-27 licensed Landscape Contractor in the State of California. Contractor shall maintain an experienced project supervisor and/or project foreman at the project site at all times throughout the duration of the installation.

1.4 All irrigation shall be completed and approved and be under automatic irrigation seven days. Irrigation system must be automatic in order to commence the weed-abatement process prior to planting and hydro-seeding as directed by the District.

1.5 No planting shall commence until the weed-abatement process has been completed unless approved by the District in writing.

1.6 The current Standard Landscape Specifications & Design Guidelines booklet must be on site at all times for each project.

1.7 No planting can occur until permanent electric and power is provided unless approved by the District.

1.8 Contractor shall be responsible for all erosion control best management practices per local, state and federal regulations.

1.9 Due to the scale of drawings it is not possible to show all plants symbol placement to scale. Minimum District plant spacing shall take precedence when symbol spacing is unclear or if spacing appears to exceed three feet unless specifically indicated on legend and approved by the District. It is the intent of the District that all planters and slopes shall receive vegetation at 3 foot spacing unless specifically approved by the District for less dense open space landscaping.

1.10 Contractor shall provide one competent English speaking person present at all times during the duration of the project with at least 5 years experience in equal or greater landscape projects. The District reserves the right to require contractor to replace foreman in the event that there is evidence of inexperience.

1.11 Contractor shall comply with all local, state and federal laws related to any portion of the work and shall be incorporated in these specifications. Nothing within these specifications shall be construed as a conflict with any laws or regulations. These specifications shall take precedence to industry standards and local, state and federal regulations when specifications indicate higher standard or better quality.

1.12 All work shall be inspected as indicated in *Section 4.0*.

1.13 Substitutions or alternates of any material must be approved a minimum of ten (10) days before bid.

1.14 In the event of any contradiction within specifications, details or plans the contractor shall be responsible for compliance with the more stringent standard.

1.15 Labor Code Sections 1720 et seq. and 1770 et seq., as well as California Code of Regulations, Title 8, Section 16000 et seq. ("Prevailing Wage Laws"), require the payment of prevailing wage rates and the performance of other requirements on certain "public works" and "maintenance" projects. If this Project involves an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Developer agrees to fully comply with such Prevailing Wage Laws. The Developer shall defend, indemnify and hold the District, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

2.0 Scope of Work

2.1 The intent of the drawings and specifications is to indicate the process required for the complete installation including but not limited to all, grading, soil amendment blending, planting, final finish leveling, raking and mulching. This section includes all labor, materials equipment and tools required for a complete planting operation including all imported top soils and fertilizers in order to adjust existing soil deficiencies to insure strong thriving plant material.

2.2 All work indicated in the specifications, details, notes or plans shall be provided and installed whether or not specifically mentioned in the specifications. It shall be understood that if an item is shown in specifications but not shown on the plan it shall be as if shown on both and if an item is shown on plan but not shown in the specifications it shall be as if shown on both. The District shall have final authority for any and all clarifications.

3.0 Quality Control

3.1 Contractor must provide one competent English speaking employee capable of understanding and communicating with District personnel on site at all times throughout the duration of the work.

3.2 Contractor must provide personnel with a minimum of three (3) years experience that are familiar with all types of material being used and installation methods for all work performed.

3.3 In the event that no specifications or details are provided for any items shown on the plans, the manufacturer's directions, specifications and/or details shall be followed.

3.4 District specifications and/or details shall always take precedence over manufacturer's specifications or recommendations.

3.5 All local, county and state laws, rules and regulations related to any portion of work under this section shall be incorporated within these specifications and adhered to throughout the duration of work. Nothing contained within these specifications shall be construed to conflict with said rules and regulations.

3.6 The provisions of these specifications shall take precedence over the said rules and regulations in the event that these specifications indicate a higher quality or better standard.

3.7 Any extra work performed shall be approved in writing by the Owner or District's representative prior to the start of such work.

3.8 Any unapproved work will be at the contractor's expense.

3.9 All material and labor shall be free from any defects. Any defective work must be corrected immediately without additional cost to the District.

3.10 In the event of conflict between plans and specifications, the specifications shall take precedence. No additional compensation shall be considered for direction given by District personnel providing clarification to specifications in the event of conflict between plans and specifications.

3.11 No additional compensation shall be given as a result of any District generated punch list item or correction notice given to contractor in order to comply with specifications.

4.0 Inspections

4.1 Request for inspections must be made 48 hours in advance of requested inspection date. Friday inspections may be scheduled only by special arrangements with a 4 day notification.

4.2 Contractor must be on site for all inspections.

4.3 Any work that is not ready for a requested inspection when inspector arrives for said inspection shall be billed to the contractor at the current inspector's non-productive inspection rate.

4.4 Any work completed without inspection or approval shall be removed, exposed or replaced at the cost of the contractor in the event that verification is required.

4.5 Contractor shall call for inspection for the following items:

a. Finish grading

b. Soil preparation and weed-abatement

c. Tree and shrub layout

d. Plant material review

e. Tree and shrub planting pits

f. Finish grade prior to mulching or hydro-seeding

g. Final Inspection

4.6 Refer to *Sections 24.0 Construction Specifications, Section 25.0 Irrigation Specifications* and *Section 27.0 Maintenance Specifications* for required construction, irrigation, and maintenance inspections.

4.7 A copy of the allocated inspection quantities and associated cost based on each project size and type is available from the District for review.

5.0 Submittals

5.1 All submittals shall be submitted 7 days prior to the pre-job conference.

5.2 Each submittal shall be bound in booklets with a minimum of three (3) copies. All items to be submitted shall be highlighted and marked with an arrow to indicate each item to be reviewed.

5.3 Contractor shall submit the following items including but not limited to:

a. Plant material breakdown indicating intended nurseries, material height, width and caliper for District approval. All plant material is still subject to field inspection to review root structure and overall consistency with all quantities.

b. Agronomic soil fertility analysis with recommendations of all required amendment material.

c. All required soil amendments per recommendation from an approved laboratory testing agency. No amendments shall be submitted unless approved by the laboratory testing agency.

d. Labels for all herbicide and fertilizers used.

e. Hydro-seed mix.

f. Tree stakes, ties and arbor guards if applicable.

g. Root barriers.

h. Decomposed granite, decorative rock or other landscape material.

5.4 Submittals shall include physical product samples when feasible in addition to catalog cuts indicating technical data.

5.5 Laboratory testing for the agronomic soil fertility testing shall be performed by an approved certified, reputable company. Approved companies are Wallace Laboratories, El Segundo, CA (310) 615-0116 and Soil and Plan Laboratory. Orange, CA (714) 282-8777 or approved equal.

5.6 Soil samples shall be taken in the presence of the District's representative. Locations of tested soil shall be indicated on the as-builts.

5.7 Contractor shall provide a minimum of one soil report for each project. Contractor shall provide an additional soil report for every 50,000 square feet to determine if there is soil variance that would require different amendment rates and applications.

5.8 Soil recommendations must be prepared for turf, planter, slope and plant material backfill mix.

5.9 Agronomic soil fertility analysis shall include results for all of the following: pH, salinity, soil texture, soil organic matter, sodium, lime, nitrate, sulfate, calcium, magnesium, potassium, boron, phosphate and zinc.

5.10 In addition to the actual site soil samples, contractor shall submit written specifications and current analysis of all intended organic compost material. In the event that analysis is older than six months, contractor shall provide a current soil analysis of the intended material to be used.

5.11 No planting shall commence until all submittals have been approved and soil has been amended per the agronomic soil fertility analysis and as approved by the District.

5.12 The soil report shall take precedence over the application rates indicated with the soil preparation section as approved by the District. In the event that soil preparation requirements indicated in the soil recommendations based upon field samples are greater or less than indicated in the specifications, the contractor must submit a cost breakdown of each item bid and of each item per the recommendations prior to commencement of work for District approval. Commencement of soil preparation prior to District notification constitutes contractor acceptance and that no additional cost will be owed by the District.

5.13 Three sets of submittals are required to be submitted. The District will retain two sets for record and inspection.

6.0 Substitutions

6.1 Any substitution shall be submitted on a separate sheet and be clearly identified as a substitution on the cover sheet. All substitutions are subject to review by the District and must be deemed equal. All substitutions must not vary in color, size, operation and/or appearance that will change the design, concept or performance as solely determined by the District. The burden of proof on product uniformity rest upon the contractor requesting the approval. Delays caused by substitution submittal review(s) shall be the responsibility of the contractor and will not be considered for additional time.

6.2 Changes in cost related to substitution approval or denial shall be the responsibility of the contractor and shall not warrant contract amount additions or reductions.

6.3 Substituted materials installed by the contractor that have not been approved are subject to rejection and shall be corrected at the cost of the contractor.

PLANTING SPECIFICATIONS (MATERIALS)

7.0 Plant Material

7.1 All plant material shall be the same as specified in the drawings.

7.2 All plant material shall be superior nursery stock, healthy, symmetrical and show vigorous growth. Plant material shall be true to botanical and common name as indicated in *An Annotated Checklist of Woody Ornamental Plants of California, American Standard for Nursery Stock*, ANSI Z60.1 and *American Joint Committee on Horticultural Nomeclature.*

7.3 Contractor shall tag one plant from each bundle or lot with the plant name in accordance with the recommendations of the American Association of Nurserymen.

7.4 All plant material shall be free of pest, plant diseases, abrasions or any other objectable disfigurations. Objectable disfigurations shall be determined solely by the District and shall not be decided by the opinion of the contractor.

7.5 Plant material must show vigorous habit of growth that is normal for that particular species.

7.6 Any plant material with evidence of insects, pests, larvae, eggs, plant diseases, root rot, abrasions, mechanical damage, wind damage, salt burn, sun burn or objectable disfigurations or discolorations shall be rejected.

7.7 Plant material shall not have circling roots, girding trunk surface or center roots that indicate any evidence of root bound material.

7.8 No plants shall be planted when root balls are broken, damaged or separated from the original container.

8.0 Tree Stakes

8.1 Tree stakes shall be lodge poles consisting of pine from various regions of North and South America. Lodge poles must be smooth without bark and be pointed on one end and chamfered at the other end. Lodge poles shall be pressure treated with an EPA – registered pesticide to protect from insect attack and decay. Pressure treatment shall be (ACQ) alkaline copper quaternary.

8.2 Tree stakes shall be 2" in diameter 10 feet long.

8.3 Tree stakes for larger trees or windy areas shall be 3” diameter as determined by the District.

8.4 Tree ties shall be manufactured from virgin flexible vinyl meeting ASTM D-412 standards for tensile and elongation strength. Material shall be black in color and be ultraviolet resistant. Tree ties shall be manufactured with a double back locking configuration and secured with one galvanized nail to prevent slippage. Tree ties shall elongate with the tree growth preventing damage to tree. Each tree shall receive (4) four cinch ties. Material shall be 30" or larger cinch ties manufactured by V.I.T. products or approved equal.

8.5 Tree ties shall be attached to lodge poles with galvanized nails per detail.

8.6 Contractor shall install 3" diameter stakes for all trees where high winds occur as directed by the District's representative.

8.7 V.I.T. Products or equal twist braces shall be required where high winds occur.

8.8 All trees larger than 36" box size shall have three guys with ½" PVC pipe to protect wire.

8.9 3" lodge poles may be used for 36" box trees and larger in high traffic areas or in small tree wells with the approval of District's representative.

9.0 Tree Guys

9.1 Tree guys shall have wireless collar consisting of a .375 inch flex poly vinyl tubing 30 inches long capable of up to 24" tree caliper.

9.2 Guy line shall be .375 inch flex poly vinyl tubing and be 60 inches long.

9.3 Cable shall be .0125 O.D. 7 x 19 strand galvanized aircraft cable with 2000 lb. nominal strength.

9.4 Fittings shall be 1/8 inch wire rope clips made of copper compressive oval sleeves.

9.5 Compressor springs shall be .375 inch zinc coated piano wire.

9.6 Anchoring device shall be 1" x 2" x 15" recycled polyethylene with a shear strength of 2150 PSI and tensile breaking strength of 4000 PSI.

9.7 Tree guys shall be installed per manufacturer specifications and District detail.

9.8 Material shall be manufactured by Wonder Tree Guy®, Duckbill Tree Anchor System or approved equal.

9.9 Size shall be as recommended by the manufacturer based upon the tree caliper size.

10.0 Vine Ties

10.1 Vine ties shall be as specified in details.

10.2 Vine ties shall be installed permanently to all wall surfaces for vines that do not self adhere to walls.

11.0 Root Barrier

11.1 Root barrier shall be black made of high density recycled polystyrene rubber modified; minimum .060 thickness with ribs every 6 inches.

11.2 Tensile strength shall conform to ASTM D 638 and yield and break at a value of 4100 PSI. Izon impact strength at 73 degrees shall be 2.0 ft/lbs/in. Root guiding ribs shall face towards the roots.

11.3 Top of root barrier shall be slightly above grade and never be under grade. Root barrier shall be 24" deep along all curbs and 18" deep along all walkways. Root barrier shall not be installed higher than any concrete surface.

11.4 Root barrier shall be "Deep Root" control barrier panels # UB 18 and UB 24- or approved equal. No cylinder root barriers shall be approved.

11.5 Root barrier shall be "Bio Barrier" for all Schinus, Liquidambar and Popular species within 8 feet of street curbs within the County right-of-way.

11.6 Root barriers shall be installed for all trees planted within 8 feet of any walls, sidewalks, building structure or other hard surface including all decomposed granite, gravel or other surface intended for the use of vehicle or pedestrian travel.

11.7 Root barriers shall be installed plumb to grade.

11.8 Length of root barrier shall extend along hardscape surface for all areas within an 8 foot radius from center of trunk.

11.9 Contractor shall install root barriers per District detail.

12.0 Herbicides

12.1 Contractor shall submit labels of all herbicides used prior to application for District approval.

12.2 Contractor shall apply pre-emergent herbicide to all areas possible as recommended by a licensed pest control consultant.

12.3 All herbicides shall be applied only by a licensed applicator in compliance with local, state and federal regulations.

12.4 Non-selective herbicides shall be spray applied 41% or greater Glyphosate or approved equal. Application rate shall be per manufacturer's instructions.

13.0 Plant Tablets

13.1 Planting tablets shall be Agriform, Gro-Power or approved equal as specified in plans, details and soil report recommendations.

13.2 The NPK and specific application rates must be determined per project by the soil report.

13.3 All trees, shrubs and groundcovers shall receive tablets as shown in the District planting details.

14.0 Bark Mulch

14.1 Mulch shall be produced from tree bark, ground clean brush, woody landscape trimmings and vegetative material free from deleterious material, debris, trash and weed seeds. No material shall be over 4" in size.

14.2 Due to the nature of this area that receives high winds, bark mulch should only be used in protected areas. Material shall be large enough to avoid being blown away by wind.

14.3 Mulch shall be certified to be free of any contaminants, weeds and insects.

14.4 All planters specified to receive mulch shall be 4" thick unless otherwise indicated on plans.

14.5 Mulch shall be tapered at the crown of all trees and shrubs per District detail.

14.6 Any and all objectable materials shall be removed from all areas with mulch as directed by the District.

14.7 Mulch pH shall be between 5.5 and 7.5.

14.8 Salt content shall be less than 4 parts per million.

15.0 Soil Conditioner Compost

15.1 Compost material shall be an organic soil amendment produced from clean vegetative material.

15.2 Material shall be high in organic matter, micronutrients and micro-organisms.

15.3 Material shall be dark earthy brown in color and possess a pH between 6.0 and 7.5. Ece shall be low and be suitable as approved by the agronomic soil analysis recommendations based upon site soil Ece levels.

15.4 Majority of material shall be screened to ½" minus with not more than 5% larger material. Water shall be added to maintain suitable moisture and dust control.

15.5 Soil conditioners shall be EPA class 'A' co-compost or compost with SAR less than 3.0 and CN ratio of 15 to 25:1 passing through ½" mesh screen as approved by the District's representative prior to delivery of material.

15.6 Bio-waste or sludge products shall not be accepted unless specifically approved by the agronomic soil testing agency and the District.

15.7 Boron content of the saturated extract shall be less than 1.0 parts per million.

15.8 Acceptable types of compost are manures, mushroom composts, peat moss low in heavy metals and salts and free from weed seeds and free from pathogens.

15.9 All soil conditioner material shall be approved prior to ordering.

16.0 Concrete Mow Curb

Refer to *Section 24.0 Construction Specifications*

17.0 PVC Fencing

Refer to *Section 24.0 Construction Specifications*

18.0 Decomposed Granite

Refer to *Section 24.0 Construction Specifications.*

PLANTING SPECIFICATIONS (EXECUTION)

19.0 Installation

19.1 Contractor shall verify and be familiar with all existing and proposed utilities and appurtenances to confirm that installation of landscape per plan shall not conflict.

19.2 Prior to breaking ground the contractor shall locate all cables, conduits, gas lines, water lines, sewer lines or other utilities to assure worker safety. Contractor shall be responsible for all damages.

19.3 Contractor shall clean, remove and legally dispose of all weeds, grasses including roots and construction debris under this section.

19.4 Contractor shall be responsible for the protection and storage of all material for the project.

19.5 All grades shall be as indicated on the drawings and must be +-.10 of a foot prior to planting.

19.6 Prior to planting, project must comply with section 1.0 general requirements.

19.7 Contractor shall not prune plant material unless requested by the District.

19.8 Contractor shall protect all plant material from damage due to sun, frost and wind exposure prior to planting.

19.9 Contractor shall not handle plant material by their branches, leaves or trunks.

20.0 Landscape Grading

20.1 The contractor shall complete grading and filling as needed or remove additional dirt, rock and debris over 3/4 inch in diameter within the top 3 inches in all turf and planter areas less than 3:1.

20.2 Contractor shall bring all landscaped areas to finish grade.

20.3 Flow lines shall be established to existing curbs, sidewalks catch basins or other drainage appurtenance as specified on the drawings or as directed by the District.

20.4 All landscape areas shall be sloped to provide positive drainage. No ponding shall be acceptable.

21.0 Soil Preparation

21.1 Contractor shall cross rip all areas 9 inches deep prior to applying any soil amendments.

21.2 Contractor shall rotor-till amendments into all turf, hydro-seed and groundcover areas 3:1 or less throughout the first 6 inches.

21.3 All clods, rocks or other objectable material shall be removed from the project.

21.4 Contractor shall rake soil conditioner lightly into all 2:1 slopes areas.

21.5 The following application rate is for bidding purposes only and is per 1000 square feet of planting area.

a. 4 cubic yards of organic soil conditioner

b. 30 lbs. of commercial fertilizer approved by the District's representative

c. 100 lbs. of agriculture grade gypsum

d. 25 lbs. soil sulfur

21.6 Actual soil preparation shall be based on the soil report.

21.7 At the request of the District the contractor shall be responsible for additional soil testing to confirm that soil preparation procedures have been completed thoroughly. Report shall be provided by original soil testing agency and shall indicate compliance within 8% of recommendation otherwise the required additional amending shall be performed at no additional cost to the District.

21.8 Contractor shall be responsible for site leaching as required by the soil report recommendations at no additional cost to the District. Leaching shall also be performed to insure no settlement occurs after planting operations.

22.0 Weed-abatement

22.1 Weed-abatement shall not commence until complete irrigation system is under complete automatic irrigation and has been approved by the District.

22.2 Upon completion of soil preparation the contractor shall complete the following:

a. Irrigate all areas to be planted, sodded or seeded for a period of seven days to germinate all weed seeds.

b. Cut watering and apply approved weed killer per manufacturer's recommendations and allow adequate time to complete kill. Refer to herbicide section 11.0 for additional application requirements.

c. Repeat step one and two.

d. Obtain approval of completed weed-abatement prior to any planting. Trees may be planted prior to weed-abatement process after mainline is complete with the approval of the District in writing.

23.0 Layout

23.1 Contractor shall layout all trees and shrubs for approval from District prior to excavation of any planting pits.

23.2 Contractor shall not willfully layout any plant material where known obstructions exist. In the event that layout per plan conflicts with present or future known utilities, the contractor shall notify District to obtain direction.

23.3 Contractor shall adjust tree locations around all street lights and overhead utility lines as directed by the District.

23.4 Contractor shall mark-out all utilities within 6 feet of any tree or shrub. Failure to delineate any utility shall result in relocation as directed by the District at the cost of the contractor.

23.5 Approval of layout by the District does not constitute liability of any damages related to the excavation or placement of the material.

23.6 Contractor shall be solely responsible for obtaining all excavation permits and dig alert notifications in compliance with local and state requirements in addition to personal site observation including all necessary pot holing to confirm that no conflicts exist.

23.7 No planting shall occur within center of flow lines.

24.0 Percolation Test

24.1 Contractor shall flood excavated planting pits with water to test water penetration through the soil at locations approved by the District.

24.2 Contractor shall monitor and record incremental counts of water percolation and provide written and photographic results to the District. If water levels do not reside more than 12 inches in 24 hours, contractor must notify the District.

24.3 If percolation test is less than 12 inches within a 24 hour period the contractor shall auger a 6 inch diameter by 36 inches long hole and backfill with pea gravel and repeat water test. If water still does not penetrate the contractor shall notify the District for direction. In the event that gravel sumps are required contractor shall submit an itemized additional cost breakdown for District and/or Developer approval. Cost of additional gravel sumps shall be paid by the current property developer or owner.

24.4 Percolation tests shall be performed in all planted areas to confirm adequate drainage.

25.0 Planting

25.1 Planting shall be performed per District details and this section.

25.2 Excavate all planting pits to a diameter twice the size of container to be planted and 1-1/2 times the depth of container to be planted.

25.3 Contractor shall scarify the side of planting pits if an auger is used with shovel or digging bar.

25.4 Plant material shall be placed in planting pit in a manner as not to disrupt the root ball and the crown shall be set 1” above final finish grade.

25.5 Provide 21 gram fertilizer tablets per agronomic fertility recommendations and per District detail.

25.6 Backfill all plant material with approved backfill mix per agronomic fertility recommendations. Compact backfill material in 6 inch lifts tamping evenly to eliminate all air pockets and voids.

25.7 Contractor shall provide 5 gram fertilizer tablets to all rooted cuttings per District detail and per agronomic fertility recommendations.

25.8 All plants must be plumb with backfill mix around top of rootball.

25.9 Do not place any material on top of rootball.

25.10 Install plant watering basins per District details and water as needed to promote vigorous growth.

25.11 All trees from 5 gallon to 36” box size shall be installed with one (1) 3” diameter perforated PVC pipe breather tube. All trees larger than 36” box size shall have two (2) 3” diameter perforated PVC pipe breather tubes. Breather tubes shall be equal length to the depth of the rootball.

26.0 Sodded Turf

26.1 All sodded areas shall be per the approved planting plan unless otherwise approved by the District.

26.2 Contractor shall prepare all areas indicated within the soil preparation section 20.0 prior to placement of any sod.

26.3 Contractor shall evenly rake all sodded areas to level and remove all rocks 3/4 inch in diameter and larger.

26.4 Contractor shall spread 16-20-20 commercial fertilizer to all sodded areas.

26.5 Contractor shall lay sod immediately upon arrival.

25.6 Sod must be laid along a straight line staggering each row like laying bricks and must be butted tightly together preventing any air pockets. No overlapping edges shall be permitted.

26.7 Sod shall be cut with a sharp knife and never pulled apart.

26.8 Sod shall be rolled immediately after sod is installed.

26.9 Sod must be watered thoroughly as required to achieve root establishment and growth and an overall green appearance**.**

26.10 Contractor shall monitor watering to prevent browning and fungus.

26.11 Contractor shall take every measure possible to protect sod by providing temporary fencing if necessary at no additional cost to the District.

26.12 Contractor shall be responsible for all pedestrian, bicycle or vehicle traffic damage.

26.13 Contractor shall replace all damaged sod as directed by the District.

26.14 Contractor shall take every measure possible to protect seed by providing temporary fencing if necessary at no additional cost.

27.0 Hydro-seeding

27.1 Turf hydro-seed mix shall be “Team Crest” available from Creative Hydroseed (951) 461-9745 unless otherwise specified or approved.

27.2 Contractor shall prepare all areas indicated within the soil preparation section 20.0 prior to placement of any sod.

27.3 Contractor shall evenly rake all areas to receive turf to proper level and remove all rocks 3/4 inch in diameter and larger.

27.4 Contractor shall monitor watering to prevent browning and fungus.

27.5 Contractor shall be responsible for all pedestrian, bicycle or vehicle traffic damage.

27.6 Contractor shall take every measure possible to protect seed by providing temporary fencing if necessary at no additional cost.

27.7 Hydro-mulch slurry shall be applied under high pressure evenly and provide a uniform coat an all areas specified.

27.8 Over spray shall be removed immediately from sidewalks, walls, valve boxes or any other structure.

27.9 Contractor shall provide 98 percent germination to all hydro-seeded areas prior to turn over.

27.10 Hydro-seeding can not commence until all irrigation, soil preparation and final finish grade has been accepted.

28.0 Jute Netting

28.1 Jute netting shall be brown in color, uniform plain weave mesh. Geo-jute or approved equal.

28.2 Jute shall be 48 inches wide with a weight of 1.2 pounds per linear yard.

28.3 All slopes adjacent sidewalks with potential erosion problems are subject to jute netting as directed by the District's representative. No slopes over 2:1 shall be allowed, however, when tree and shrub planting pits and basins are installed on a 2:1 slope, a greater slope will be created that may require jute netting when slope is directly adjacent to a sidewalk.

28.4 Jute netting shall be unrolled and placed up and down the slope and shall overlap 6 inches. All edges and overlaps shall be secured with jute staples at 3 foot intervals.

28.5 Jute netting along top of slope shall be buried 8 inches deep.

28.6 When ends overlap going down slope the material shall overlap 3 feet.

28.7 Jute staples shall be 10 gauge, U shaped galvanized steel 6 inches long. Longer staples shall be required for sandy soils.

29.0 Guarantee

29.1 Contractor shall guarantee entire project against workmanship defects resulting in damage or death to any landscape excluding defects resulting from lack of maintenance, neglect or abuse by Owner.

29.2 All trees and shrubs shall be guaranteed for a period of one year.

29.3 All plant material that is dead, dying, or does not show evidence of growth as directed by the District within the guarantee period shall be replaced at the cost of the contractor within 7 days of written notice.

29.4 All replacement plant material shall be exact as specified in species and size.

29.5 No substitutions shall be allowed unless written approval is obtained.

29.6 Guarantee period shall start on the date of the project letter of acceptance.

29.7 Guarantee shall be provided on Contractor's letter head and shall include contractor's license number, contact number and place of business.

29.8 Guarantee shall be notarized and contain the following information on the following sheet:

Guarantee for Landscape Plant Material

All trees shall be guaranteed for one year and shall remain in a live, healthy condition for said time following the date of completion indicated below. Within this period,

_____"agrees to replace all dead or unhealthy trees within 15 days after
(CONTRACTOR'S NAME)
written notification by the District's representative, at no cost to the owner or District. Replacement trees shall meet the same as the original trees. Replacement trees shall be guaranteed for one year after their review by the District's representative. All shrubs and groundcover shall be guaranteed to live in a healthy condition for ninety days following the date of completion indicated below. Within this period, "CONTRACTOR'S NAME" agrees to replace all dead or unhealthy shrubs or groundcover within 15 days after written notification by the District's representative, at no cost to the owner or District. Replacement shrubs and groundcover shall meet the same as the original shrubs and groundcover. Replacement shrubs and groundcover shall be guaranteed for ninety days after their review by the District's representative. If the contractor fails to complete the required plant replacements within 15 days of written notice, the contractor hereby authorizes the District to complete the replacements and agrees to pay all costs including material, labor and equipment including a 10% administrative fee.

Project Name: _____

Owner: _____

Landscape Architect: _____

Project Location: _____

Signed By: _____

Title: _____

Address: _____

Telephone: _____

Date of Signature: _____

Lic. No: _____

Notary:

30.0 Clean Up

30.1 Contractor shall keep project clean at all times to insure a safe and orderly work place.

30.2 All containers, pallets or other delivery material shall be removed from the site once material has been installed.

30.3 All sidewalks, gravel, decomposed granite, concrete or asphalt surfaces shall be broom clean at the end of each day.

30.4 All trash, debris or extra materials shall be removed and legally disposed of from the project site prior to the completion of the project.

31.0 Establishment Period

Refer to *Section 27.0 Maintenance Specifications*.

32.0 Planting As-builts

32.1 All trees and shrubs shall be identified on the planting as-builts including all field changes made to the varieties, quantities and locations.

32.2 All tree locations shall be measured with two points of reference and indicated with dimensions on the planting as-builts.

32.3 All planting as-builts shall be transferred in AutoCAD .dwg and Adobe Acrobat .pdf file formats and submitted to the District for review and approval prior to final acceptance.

32.4 Refer to Section 16.0 for additional AutoCAD requirements.

- END OF SECTION -

27.0 Maintenance Specifications

MAINTENANCE

MAINTENANCE SPECIFICATIONS

1.0 General

1.1 The section includes all materials, tools, equipment labor and transportation to complete the establishment period.

1.2 Establishment period shall not commence until all punch list items have been completed unless indicated in writing that items can be completed within the first 30 calendar days as determined by the District. Failure to complete items within the first 30 calendar days may result in extended maintenance at the cost of the contractor.

1.3 Contractor shall provide an experienced landscape maintenance foreman or supervisor to monitor the project continuously throughout the maintenance period.

1.4 Contractor shall visit the site as needed but not less than once per week to perform maintenance operations and monitor watering schedules.

1.5 Contractor shall provide all controller charts, record drawings, turn over items etc. prior to the commencement of maintenance.

1.6 Contractor shall provide the District with written time sheets listing each site visit during the maintenance period indicating services performed. Failure to report work may result in extended maintenance to confirm work performed.

1.7 Labor Code Sections 1720 et seq. and 1770 et seq., as well as California Code of Regulations, Title 8, Section 16000 et seq. ("Prevailing Wage Laws"), require the payment of prevailing wage rates and the performance of other requirements on certain "public works" and "maintenance" projects. If this Project involves an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Developer agrees to fully comply with such Prevailing Wage Laws. The Developer shall defend, indemnify and hold the District, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

2.0 Maintenance Establishment Duration

2.1 Contractor shall maintain the entire project without any additional compensation until approval to enter into the maintenance period has been obtained in writing by the District. The purpose of the maintenance period is to allow the plant material to become established. The District reserves the right to extend the maintenance period (at the contractors expense) if the plant material has not become established due to any circumstance. The contractor shall repair any damage to irrigation and replace any dead plant material throughout the maintenance period. before the District will accept the landscaping. After approval, the contractor shall enter into the 90 calendar day maintenance period and shall schedule the following inspections:

a. 30 Day Maintenance Walk

b. 60 Day Maintenance Walk

c. 80 Day Pre-Final Walk (to verify final punch list is complete)

d. 90 Day Maintenance Walk/Final Inspection

2.2 90 days is the anticipated duration provided that all punch list items have been completed. Contractor shall continuously maintain the entire project until all correction items have been completed and approved in writing regardless of the time required to complete. Final landscape walk shall not be scheduled until all turnover items have been submitted to the District.

3.0 Turf Maintenance

3.1 Contractor shall mow weekly or as needed, all turf areas to a height of 2 inches unless Bermuda or a mixture of Bermuda is used. Bermuda or a mixture of Bermuda grass shall be maintained at a height of 1-1/2 inches as directed by the District.

3.2 Contractor shall edge all turf areas adjacent to sidewalks, walls, or other applicable structures and trees bi-weekly or as needed.

3.3 All clippings must be removed from sidewalks and adjacent areas.

3.4 Contractor shall remove all excess clipping from turf areas. No mulching shall be allowed during the maintenance establishment period. First and second mowing operations shall be performed with 21" walk behind mowers.

3.5 Contractor shall monitor watering to all turf areas and provide sufficient moisture levels as required to achieve a lush appearance.

3.6 Contractor shall re-seed or re-sod all bare areas as required to achieve 95% coverage prior to project turnover. Seed or sod variety must be verified by the District prior to placement.

4.0 Tree and Shrub Maintenance

4.1 Contractor shall remove any dead growth on all trees and shrubs as needed.

4.2 Lower branches of all trees under twelve feet shall be pruned using best horticultural practices and as directed by the District's representative.

4.3 No topping of any tree is allowed unless directed by the District's representative.

4.4 Pruning of trees above twelve feet will be considered additional work and must be approved by the District in writing.

5.0 Groundcover

5.1 Contractor shall edge all groundcover areas as required to maintain a neat lush thriving appearance and shall edge as needed and no less than once per month.

5.2 Contractor shall edge groundcover around shrub and tree basins as required.

5.3 Contractor shall trim all groundcover over 24" in height.

6.0 Weed Control

6.1 Contractor shall eradicate all weeds from all turf, planter and slope areas by means of manual or chemical abatement. Chemical abatement must be approved by the District in writing prior to application.

6.2 Contractor must have or contract a company with a valid pest control license.

6.3 Contractor shall apply pre-emergent herbicide where possible to prevent weed growth as directed by a licensed pest control consultant.

6.4 Any undesirable plants not indicated on the planting plans shall be considered a weed as shall be removed from site as directed by the District.

6.5 Contractor shall maintain all sidewalks, trails and parking lots to be clean and weed free.

7.0 Rodent Control and Pests

7.1 Contractor shall be responsible for maintaining a rodent and pest free project.

7.2 All measures to eradicate rodents and pests must be completed as directed by a licensed pest control consultant.

7.3 Contractor shall repair/replace all damage caused by rodents or pests at no additional cost to the District.

8.0 Fertilization

8.1 Contractor shall fertilize turf, slope and planter areas every 30 calendar days with approved fertilizer at the manufacturer's recommended application rate.

8.2 Approved fertilizers are 15-15-15, 16-6-8 and 21-7-14. Additional fertilizers can be used as approved by the District.

9.0 Irrigation

9.1 Contractor shall be responsible for complete irrigation adjustments to achieve proper moisture levels throughout all projects for all seasons as required to promote healthy, thriving plant material, ground cover and turf while taking every possible measure to conserve water.

9.2 Contractor shall be responsible for repairing or replacing all nozzles, sprinkler heads, lateral lines, mainlines, valves and/or other required assemblies throughout the project.

9.3 Contractor shall ensure that all irrigation heads are adjusted properly to alleviate over spray wherever possible.

9.4 Contractor shall test irrigation system a minimum of once per week or more as required to properly maintain optimum moisture levels to promote vigorous plant growth.

9.5 Provide current backflow certification prior to turn-over.

9.6 Repair and/or replace any damaged irrigation spray heads, rotors, drip assemblies, valves, backflow devices, water meters, electric pedestals irrigation controllers or other equipment. All replacements shall be new material and exact size and model number.

9.7 Contractor shall be responsible for all irrigation repairs and/or replacements throughout the duration of the maintenance period.

10.0 Clean-Up

10.1 Clean up shall take place on a daily basis, after each portion of work has been completed and as directed by the District's representative.

10.2 The contractor shall legally remove from site any green waste, trash or other debris.

10.3 Contractor shall keep clean all restrooms, trash receptacles and trash enclosures throughout the maintenance period.

11.0 Infield Mix and Decomposed Granite

11.1 Contractor shall weekly maintain all infield mix and decomposed granite areas by scarifying and raking all uneven areas to be level and consistent in grade per plans, details and specifications.

11.2 All infield areas must be watered as needed to avoid material transfer caused by wind.

11.3 All infield mix and decomposed granite areas shall be at the required level per plans, details and specifications at time of turnover. Any additional material required to replenish material levels per District requirements shall be at the cost of the contractor.

11.4 All infield mix and decomposed granite areas shall be cleaned weekly to be free of weeds, trash, green waster or any other objectable debris as determined by the District.

12.0 Parking Lots and Concrete Areas

12.1 All parking lots and concrete areas shall be cleaned weekly to be free of weeds, trash, green waste or any other objectable debris as determined by the District.

13.0 Graffiti

13.1 Removal of any and all graffiti shall be completed within 48 hours of notification.

13.2 Contractor shall be responsible for all graffiti removal until project has been completed and accepted in writing by the District.

14.0 Theft / Vandalism

14.1 Contractor shall be responsible for all theft / vandalism on the project until project has been completed, and accepted in writing by the District.

14.2 Contractor shall be responsible for site security until project has been completed and accepted in writing by the District.

15.0 Maintenance and Warrantee Bond

15.1 The District reserves the right to require a maintenance bond prior to final acceptance of project by the District against all defects in workmanship and materials that may become apparent during a period of one year. Contractor shall be responsible for the cost of the bond.

16.0 Final Approval

16.1 All landscaped areas shall be inspected in it's entirety by the District's representative upon the completion of the maintenance period.

16.2 The contractor shall be responsible for the entire project at no additional cost to the District until final acceptance has been provided in writing by the District.

16.3 Final acceptance for all projects to be turned over for District maintenance shall be the first of each calendar month. Failure to receive approval for all open punch list items prior to the end of the month shall result in additional maintenance performed by the contractor until the end of the following month at no additional cost to the District.

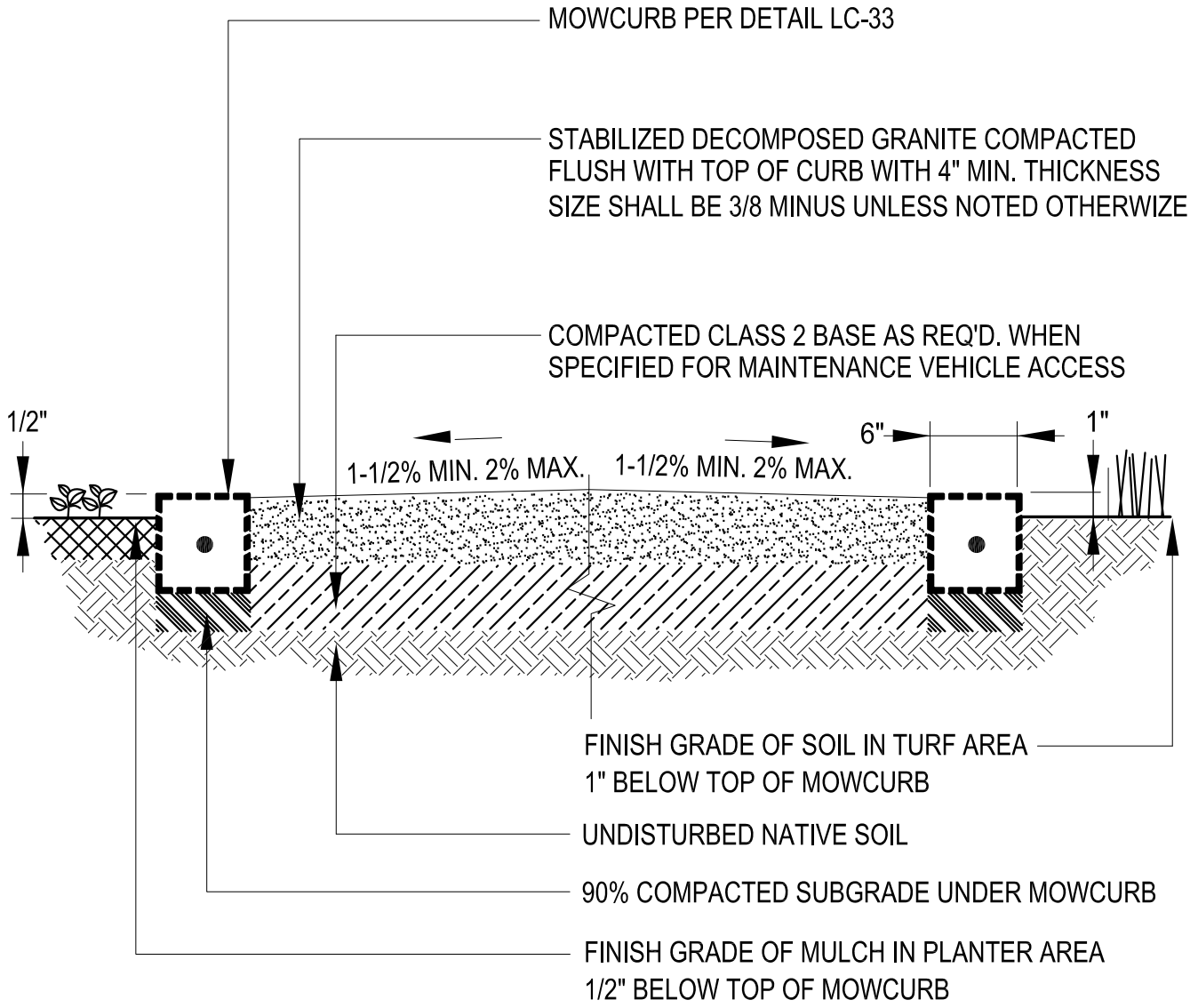
16.4 Financial payment or reimbursement may be required to be paid to the District in order to enter continued maintenance in the event that the appropriate funding has not been levied into District.

- END OF SECTION -

HESPERIA Recreation & Park District

Standard Landscape Construction Details

Detail No.	Detail Description	Drawing Name
LC-01	Decomposed Granite Path	LC-001-2014.dwg
LC-02	Concrete Flatwork	LC-002-2014.dwg
LC-03	Concrete Rebar and Joints	LC-003-2014.dwg
LC-04	Infield Mix	LC-004-2014.dwg
LC-05	Play Area Curb	LC-005-2014.dwg
LC-06	Chain Link Post in Mowcurb	LC-006-2014.dwg
LC-07	PVC Fence, Footing & Mowcurb	LC-007-2014.dwg
LC-08	Three Rail PVC Fencing	LC-008-2014.dwg
LC-09	Two Rail PVC Fencing	LC-009-2014.dwg
LC-10	Chain Link Fencing	LC-010-2014.dwg
LC-11	Chain Link Gate	LC-011-2014.dwg
LC-12	Tubular Steel Fencing	LC-012-2014.dwg
LC-13	Tubular Steel Gate	LC-013-2014.dwg
LC-14A	Trash Enclosure Footing Layout	LC-014A-2014.dwg
LC-14B	Trash Enclosure Plan View	LC-014B-2014.dwg
LC-14C	Trash Enclosure Elevation View	LC-014C-2014.dwg
LC-14D	Trash Enclosure Gate	LC-014D-2014.dwg
LC-15A	Drinking Fountain	LC-015A-2014.dwg
LC-15B	Drinking Fountain Drain	LC-014B-2014.dwg
LC-16	Play Area Drainage (Typical)	LC-016-2014.dwg
LC-17	Play Area Sump Drain Layout	LC-017-2014.dwg
LC-18	Play Area Sump Drain Section	LC-018-2014.dwg
LC-19	Typical Horseshoe Pit	LC-019-2014.dwg
LC-20	Basketball Half Court	LC-020-2014.dwg
LC-21	Basketball Goal	LC-021-2014.dwg
LC-22	Typical Dugout Layout	LC-022-2014.dwg
LC-23	Chain Link Backstop	LC-023-2014.dwg
LC-24	Chain Link Backstop Connections	LC-024-2014.dwg
LC-25	Ball Field Layout	LC-025-2014.dwg
LC-26	Aluminum Bleacher	LC-026-2014.dwg
LC-27	Trash Receptacle	LC-027-2014.dwg
LC-28	Park Bench and Table	LC-028-2014.dwg
LC-29	Electrical Pull Box	LC-029-2014.dwg
LC-30	Rubber Surfacing	LC-030-2014.dwg
LC-31	Monument Sign	LC-031-2014.dwg
LC-32	Play Area Ramp	LC-032-2014.dwg
LC-33	Concrete Mowcurb	LC-033-2014.dwg
LC-34	Park BBQ	LC-034-2014.dwg



NOTES:

D.G. SAMPLE MUST BE SUBMITTED FOR APPROVAL TO DISTRICT'S REPRESENTATIVE PRIOR TO DELIVERY OF MATERIAL

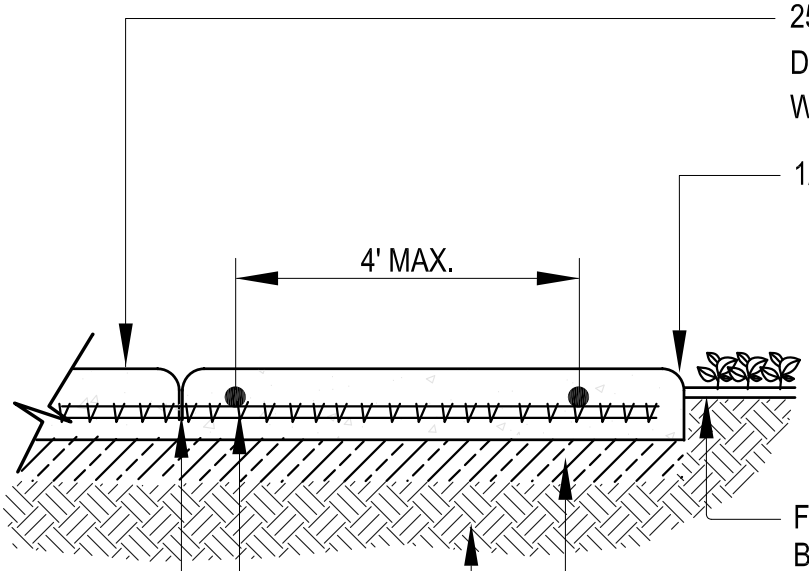
COLOR SHALL BE "GOLD" UNLESS OTHERWISE NOTED ON PLAN

HESPERIA
Recreation & Park District

DECOMPOSED GRANITE PATH

LC-01

2014



2500 MIN. PSI GRAY CONCRETE
DEPTH PER PLAN (4" MIN.)
W/ MEDIUM BROOM FINISH

1/2" MIN. RADIUS AT ALL EDGES

FINISH GRADE (TOP OF MULCH) 1/2" BELOW CONCRETE FOR PLANTER AND 1" BELOW FOR TURF

3" THICK MIN. COMPACTED WASHED SAND

90% COMPACTED SUBGRADE

#4 REBAR TYP.

CONTROL JOINT PER DETAIL LC-03

NOTES:

CONCRETE CROSS SLOPE SHALL NOT BE GREATER THAN 2%

CONCRETE LONGITUDINAL SLOPE SHALL NOT BE GREATER THAN 5% WITHOUT HANDRAILS

CONCRETE SHALL NOT BE FLATTER THAN 0.5% TO AVOID PONDING

PROVIDE 3/8" FELT EXPANSION JOINTS WHEN CONCRETE JOINS WITH A BLOCK WALL OR OTHER STRUCTURE

ALL CONCRETE MUST COMPLY WITH ADA REGULATIONS

PROVIDE #4 REBAR AT 4' SQUARE SPACING (2 CONTINUOUS ALONG SIDEWALKS)

ALL CONCRETE FORMS MUST BE INSPECTED PRIOR TO POURING

ALL CONCRETE AND SUBGRADES SHALL COMPLY WITH SOILS REPORT

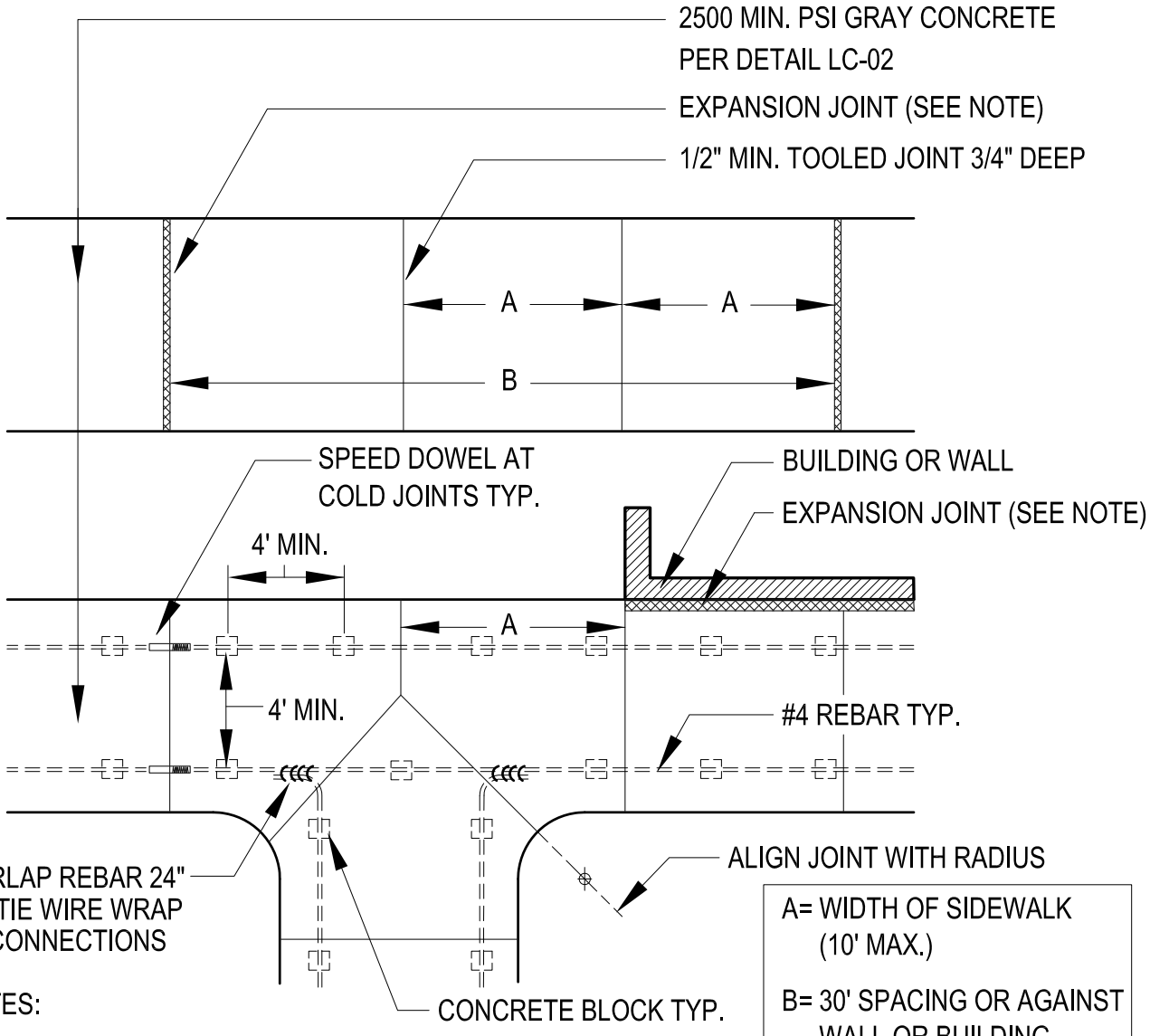
REFER TO ADDITIONAL REQUIREMENTS ON DETAIL LC-03

HESPERIA
Recreation & Park District

CONCRETE FLATWORK

LC-02

2014



A= WIDTH OF SIDEWALK (10' MAX.)

B= 30' SPACING OR AGAINST WALL OR BUILDING

NOTES:

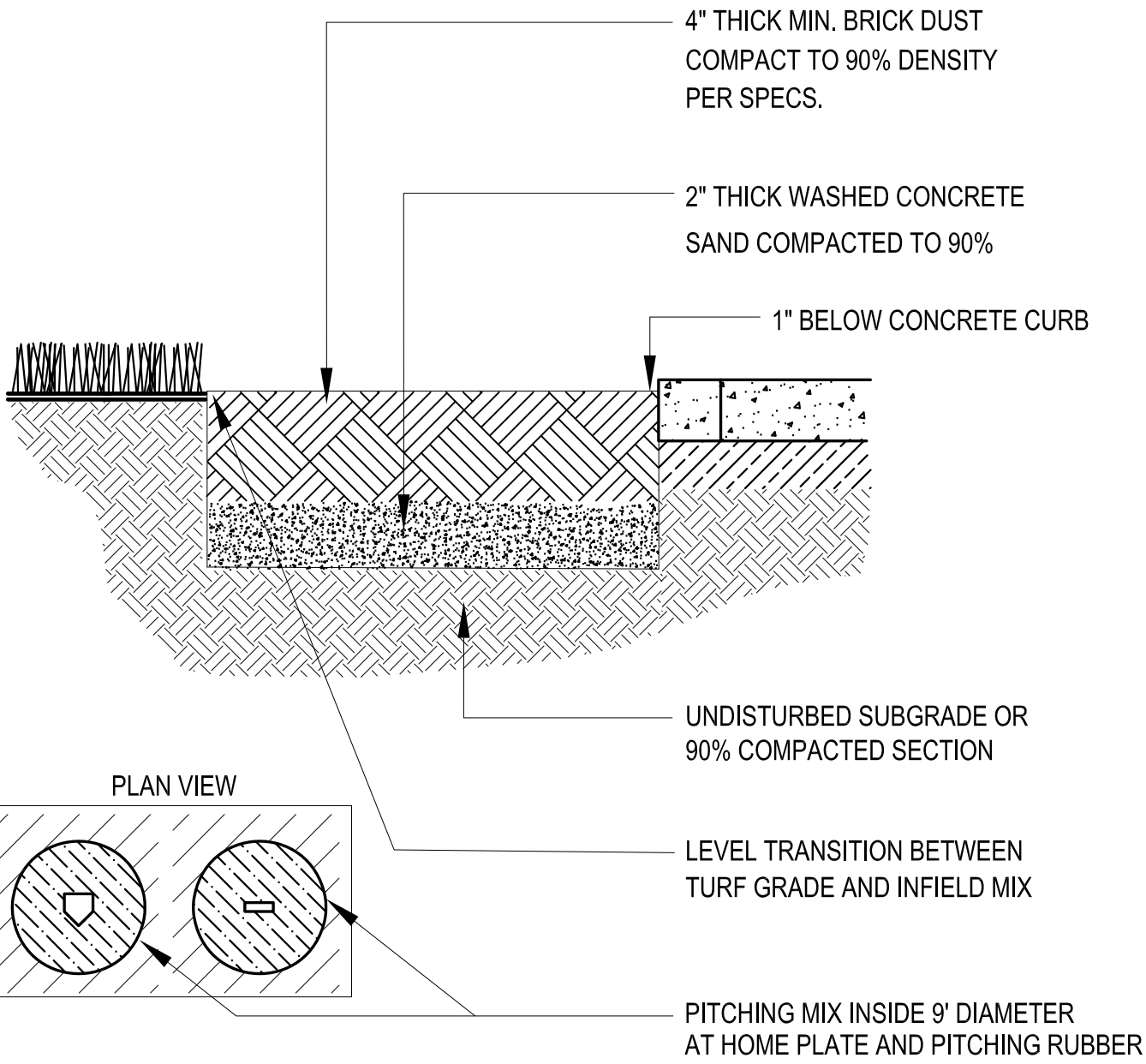
ALL JOINTS SHALL BE PERPENDICULAR TO CONCRETE EDGE
ALL JOINTS SHALL BE HAND TOOLED AND SAWCUT TO A DEPTH OF 1-1/2"
SAW CUTTING IN LIEU OF TOOLED JOINT MUST BE APPROVED IN WRITING BY THE DISTRICT
PROVIDE 3/8" FELT EXPANSION JOINTS WHEN CONCRETE JOINS WITH WALL OR BUILDING
PROVIDE 3/8" FELT EXPANSION JOINTS AT 30 FOOT SPACING TYP.
PROVIDE ALL RAMP JOINT TOOLING PER ADA STANDARDS
SPEED DOWELS SHALL BE USED BETWEEN EACH COLD JOINT POURS
ALL REBAR MUST BE 2" FROM ANY EDGE OF CONCRETE AND BE SECURED TO A 2"X2" MINIMUM CONCRETE BLOCK AT 4' O.C. MINIMUM SPACING PER SPECS.
DRILL AND SECURE REBAR WITH EPOXY AGAINST ALL EXISTING COLD JOINTS WITH SPEED DOWELS

HESPERIA
Recreation & Park District

CONCRETE REBAR AND JOINTS

LC-03

2014



NOTES:

INFIELD MIX SHALL BE A SMOOTH CONSISTENT HARD SURFACE AND SHALL SLOPE PER PLAN

WATER THOROUGHLY AND COMPACT WITH ROLLER PER SPECIFIED DENSITY

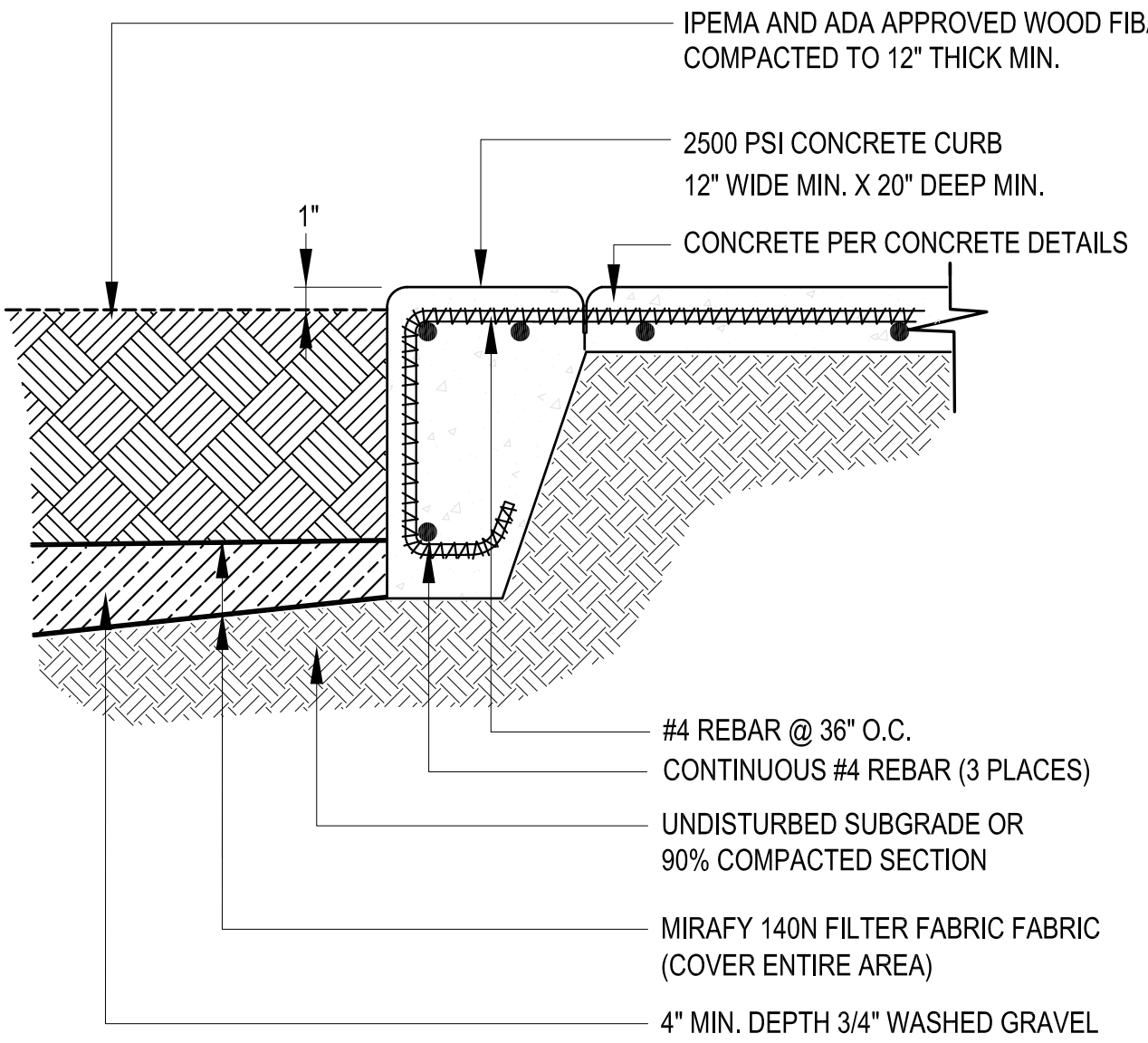
PROVIDE 9' DIAMETER PITCHING MIX 4" DEEP AROUND HOME PLATE AND PITCHING RUBBER

HESPERIA
Recreation & Park District

INFIELD MIX

LC-04

2014



NOTES:

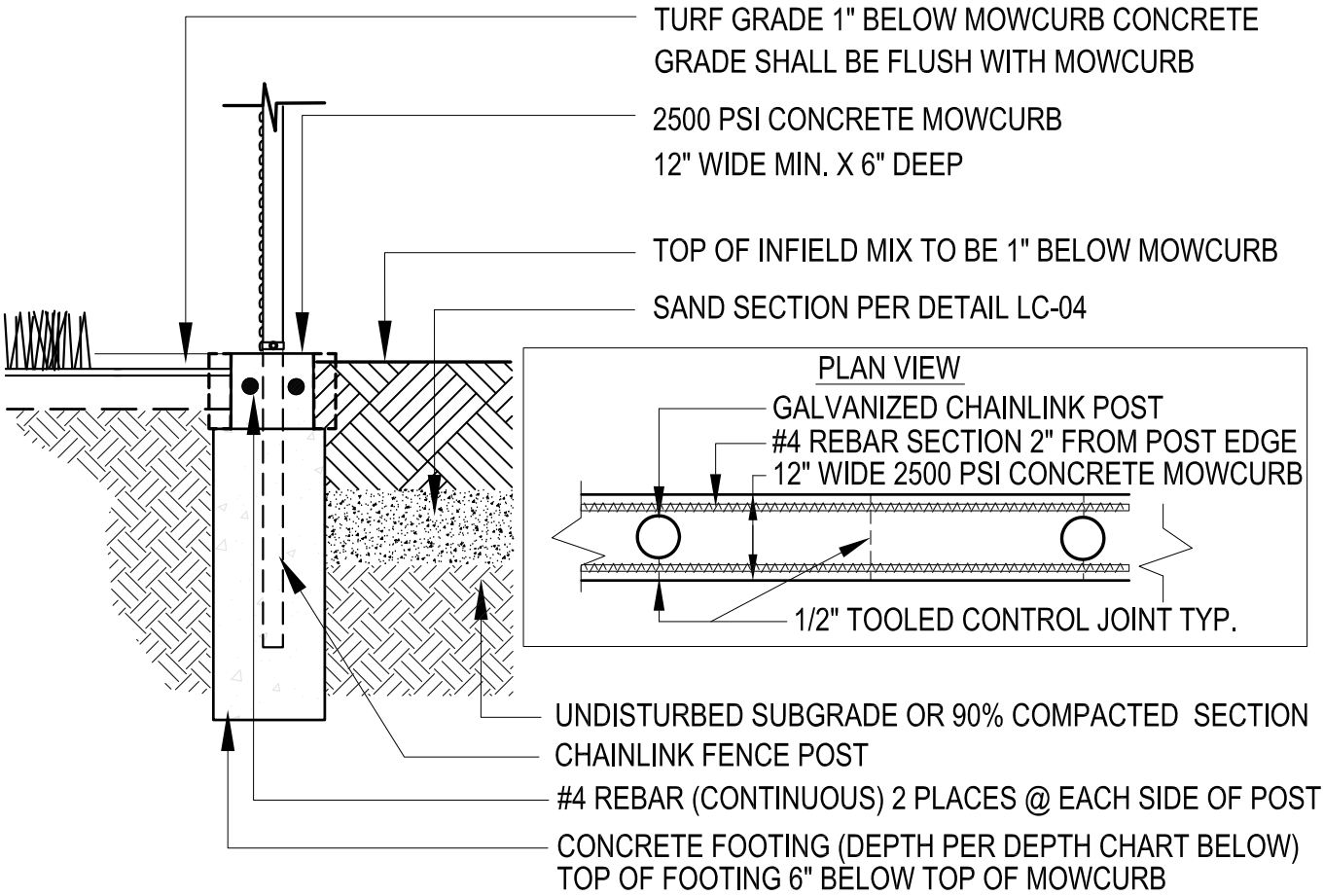
SUBGRADE FOR WOOD FIBAR SHALL SLOPE TO SUMP DRAINS PER PLAN FOR WATER RUNOFF
PROVIDE 3/4" MIN. RADIUS AT CONCRETE EDGE
WOOD FIBAR SAMPLE MUST BE SUBMITTED FOR APPROVAL FROM DISTRICT
PROVIDE A 16:1 (6.25) CONCRETE ADA ACCESS RAMP PER ADA REGULATIONS AND DETAIL LC-32
PROVIDE SPEED DOWELS AND EXPANSION JOINT WITH CAULKING BETWEEN CURB AND SIDEWALK
UNLESS CURB AND ADJACENT CONCRETE ARE POURED AT SAME TIME
WOOD FIBAR MUST BE WATERED, COMPACTED AND REPLENISHED TO BE 1" BELOW TOP OF CURB

HESPERIA
Recreation & Park District

PLAY AREA CURB

LC-05

2014



FOOTING SIZE FOR CHAINLINK FENCE HEIGHTS

FENCE HEIGHT	FOOTING DEPTH	FOOTING DIAMETER	POST DIAMETER
6'0"-8'0"	18"-24"	8"	2-3/8"
10'0"-12'0"	36"	12"	3-5/8"
16'0"-18'0"	60"	18"	6"

NOTES:

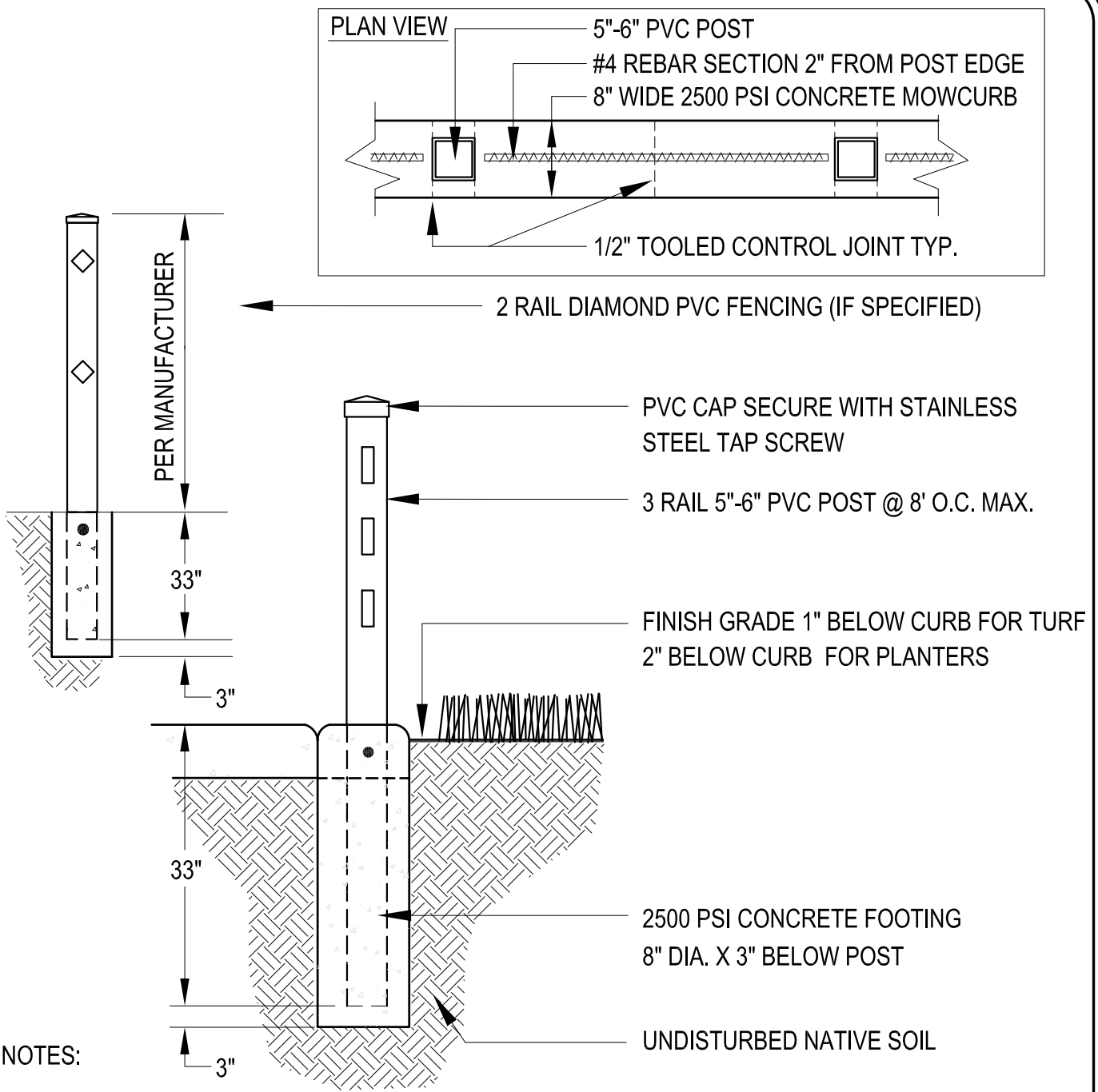
1. TOP OF FOOTING MUST BE AT ELEVATION TO ACCOMMODATE 6" DEEP FORM BOARDS AND CONCRETE MOWCURB TO BE POURED AFTER FOOTING AND POST INSTALLATION
   EXTEND FENCE POST FOOTING 4" ABOVE FINISH GRADE WHEN MOWCURB IS NOT USED AND CHAMFER EDGES 3" AT 45 DEGREE ANGLE FOR DRAINAGE
2. CONTRACTOR SHALL BE RESPONSIBLE FOR BUILDING PERMIT PRIOR TO CONSTRUCTION
3. FOOTINGS MUST BE INSPECTED BY THE DISTRICT PRIOR TO POURING
4. ALL FOOTINGS ARE SUBJECT TO LOCAL CITY AND/OR COUNTY PERMITS AND INSPECTIONS IN ADDITION TO INSPECTION BY THE DISTRICT PER THE DISTRICT'S MINIMUM REQUIREMENTS

HESPERIA Recreation & Park District

CHAIN LINK POST IN MOWCURB

LC-06

2014



NOTES:

WHERE PVC FENCING IS ADJACENT CONCRETE, TURF OR PROJECT BOUNDARY, PROVIDE A CONCRETE MOWCURB ALONG FENCE LINE

TOP OF FOOTING MUST BE AT ELEVATION TO ACCOMMODATE 6" DEEP FORM BOARDS AND CONCRETE MOWCURB TO BE POURED AFTER FOOTING AND POST INSTALLATION

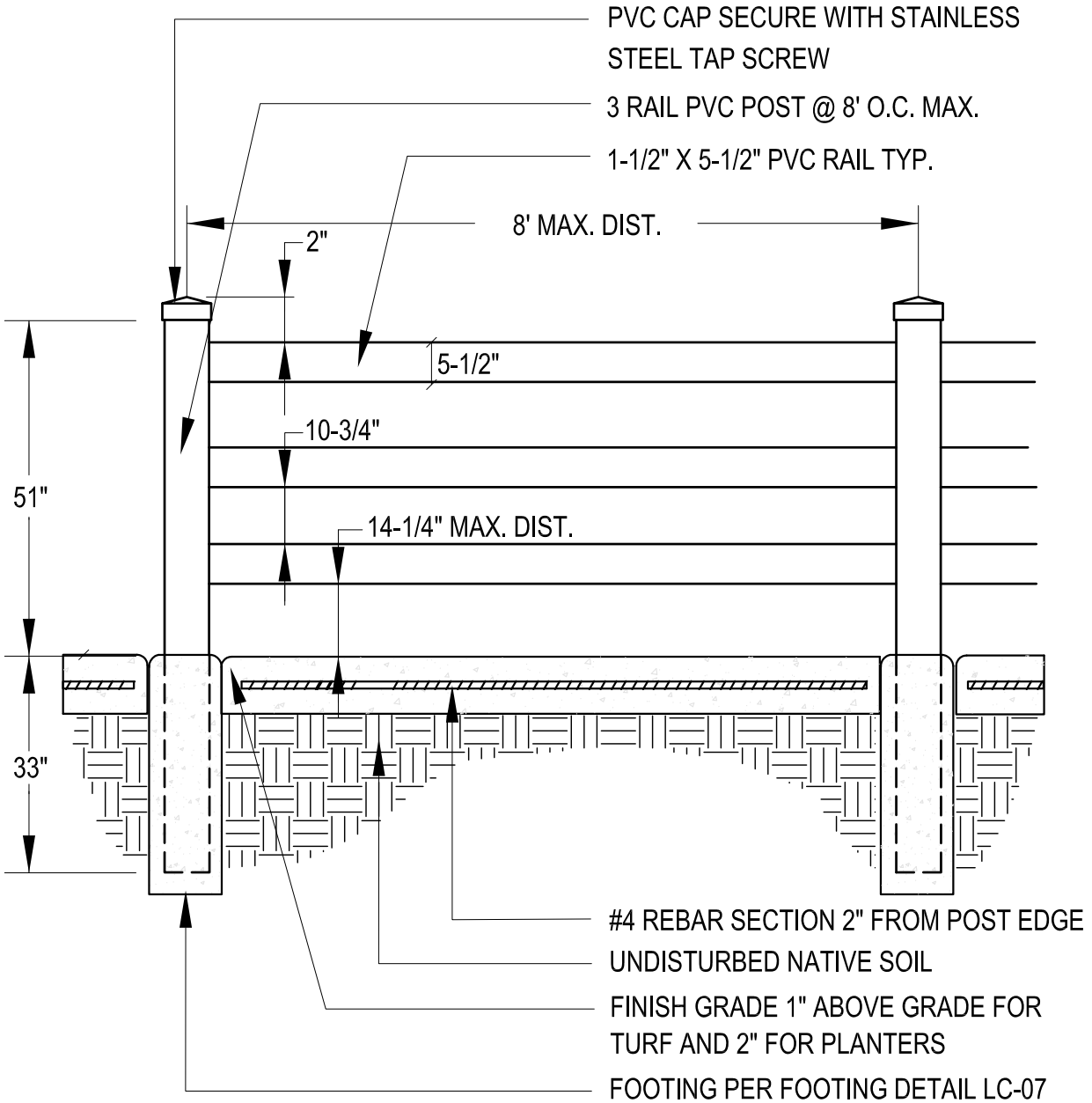
ALL FOOTINGS ARE SUBJECT TO SAME REQUIREMENTS INDICATED ON NOTE 4 OF DETAIL LC-06

HESPERIA
Recreation & Park District

PVC FENCE, FOOTING AND MOWCURB

LC-07

2014



NOTES:

WHERE PVC FENCING IS ADJACENT CONCRETE, TURF OR PROJECT BOUNDARY, PROVIDE A CONCRETE MOWCURB ALONG FENCE LINE. REFER TO DETAIL LC-06 & 07 FOR FOOTING ELEVATION

TOP OF FOOTING MUST BE AT ELEVATION TO ACCOMMODATE 6" DEEP FORM BOARDS AND CONCRETE MOWCURB TO BE POURED AFTER FOOTING AND POST INSTALLATION

REFER TO DETAIL LC-09 FOR 2 RAIL DIAMOND STYLE PVC FENCING

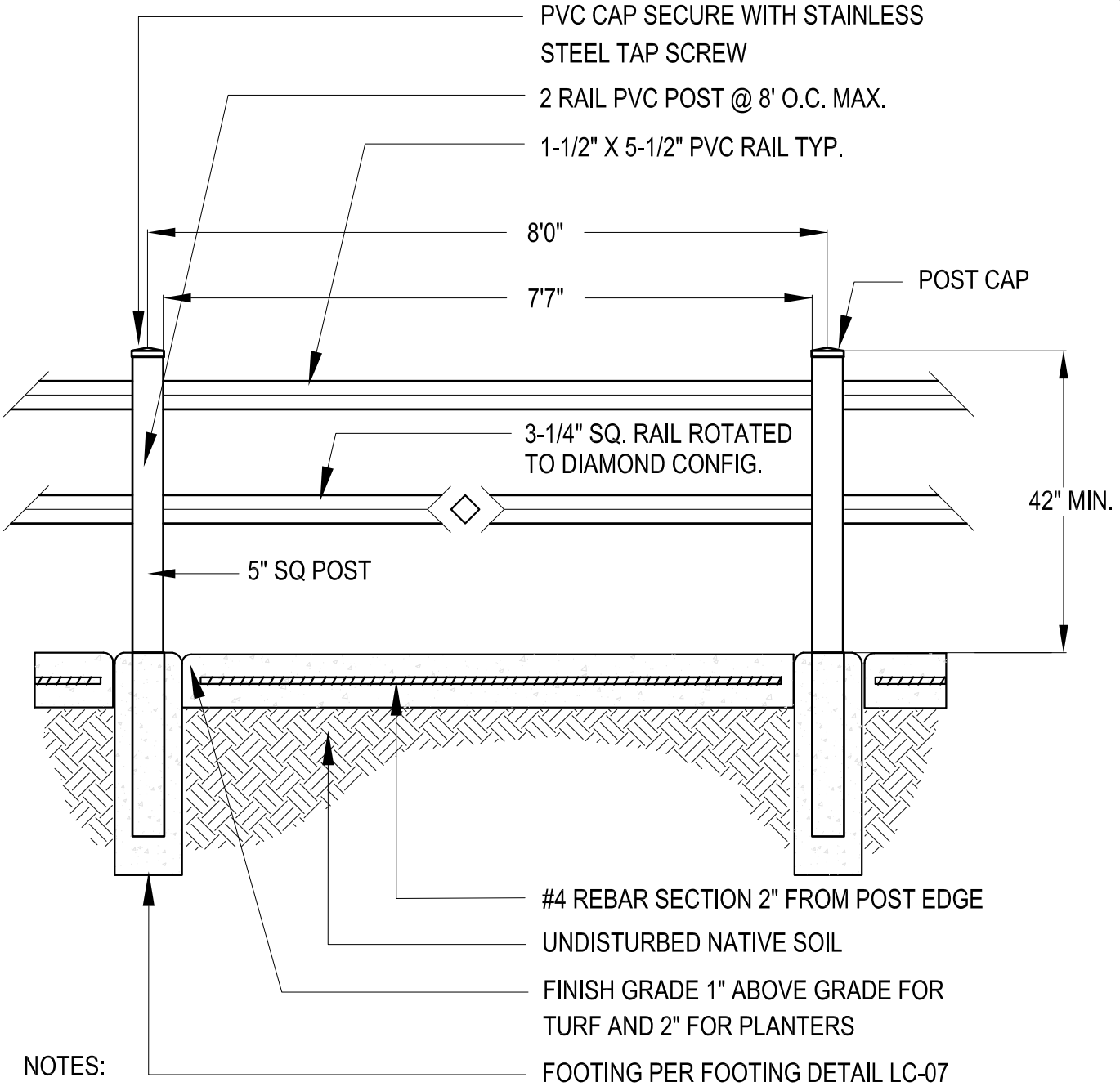
ALL FOOTINGS ARE SUBJECT TO SAME REQUIREMENTS INDICATED ON NOTE 4 OF DETAIL LC-06

HESPERIA
Recreation & Park District

THREE RAIL PVC FENCING

LC-08

2014



NOTES:

WHERE PVC FENCING IS ADJACENT CONCRETE, TURF OR PROJECT BOUNDARY, PROVIDE A CONCRETE MOWCURB ALONG FENCE LINE REFER TO DETAIL LC-06 & 07 FOR FOOTING ELEVATION

TOP OF FOOTING MUST BE AT ELEVATION TO ACCOMMODATE 6" DEEP FORM BOARDS AND CONCRETE MOWCURB TO BE POURED AFTER FOOTING AND POST INSTALLATION

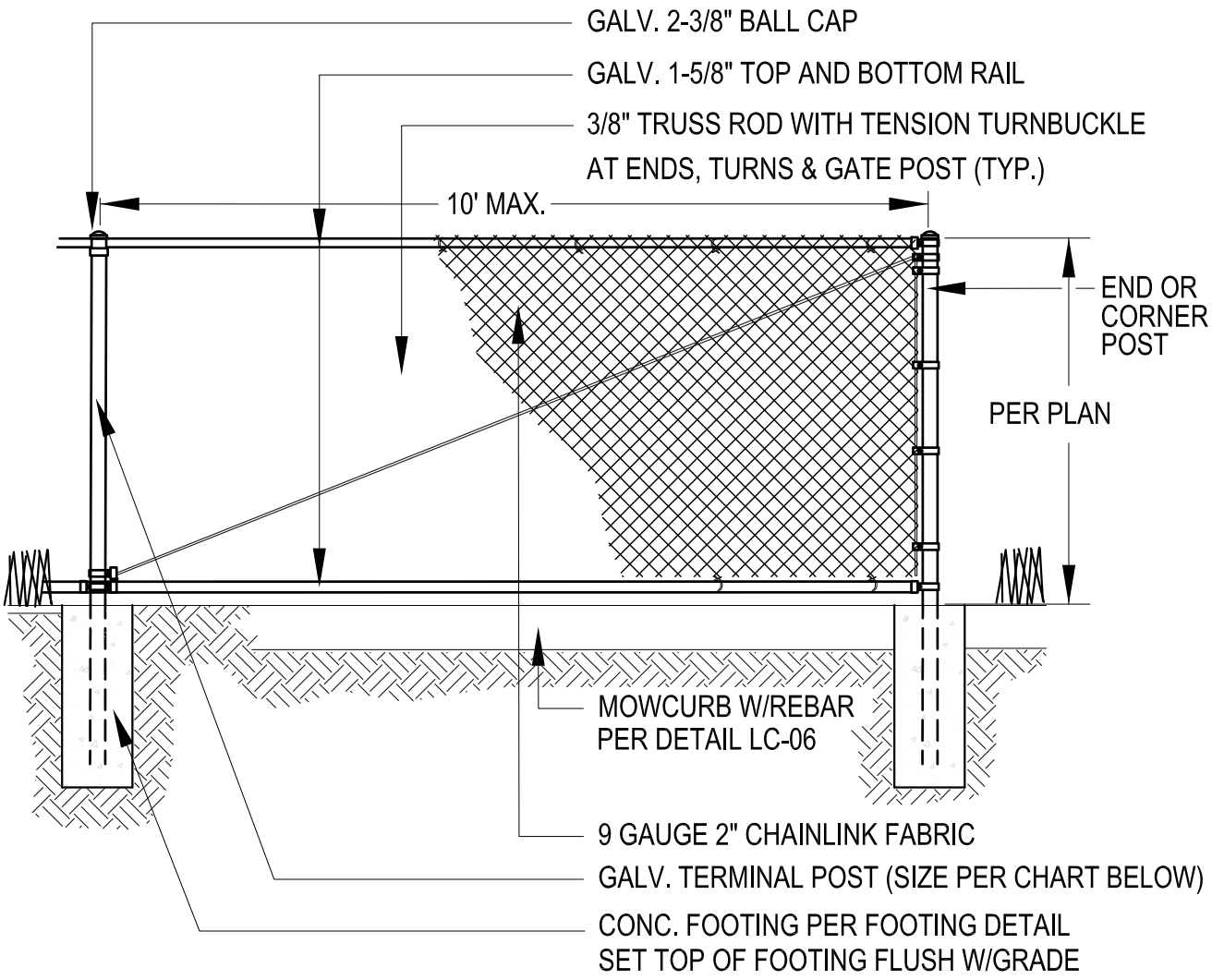
ALL FOOTINGS ARE SUBJECT TO SAME REQUIREMENTS INDICATED ON NOTE 4 OF DETAIL LC-06

HESPERIA
Recreation & Park District

TWO RAIL PVC FENCING

LC-09

2014



MIN. FOOTING SIZE FOR CHAINLINK FENCE HEIGHTS-FINAL DESIGN PER CITY REQUIREMENTS.

FENCE HEIGHT	FOOTING DEPTH	FOOTING DIAMETER	POST DIAMETER
6'0"-8'0"	36"	12"	2-3/8" ***
10'0"-12'0"	36"	12"	3-1/2" ***
16'0"-18'0"	48"	16"	6" ***

NOTES:

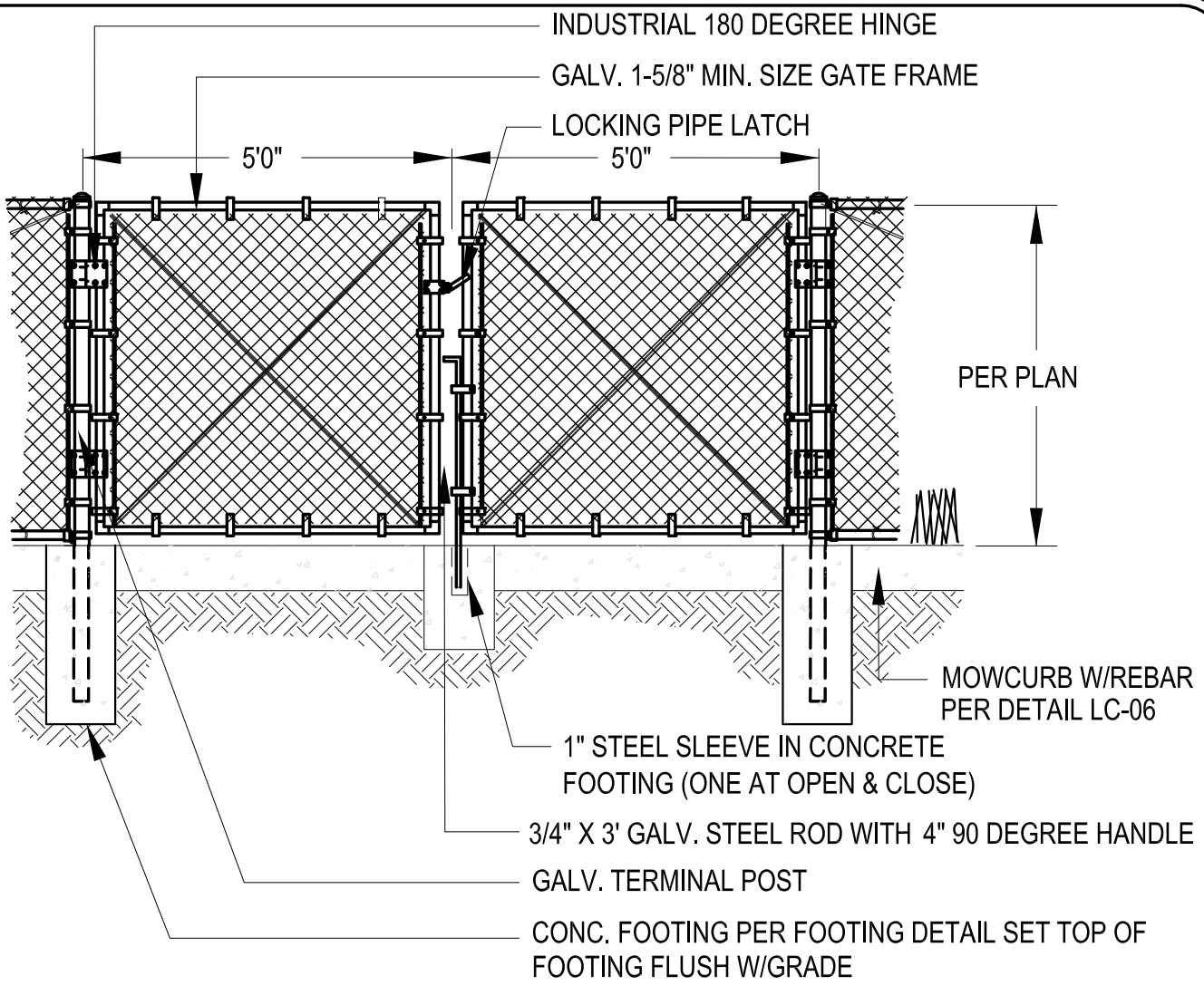
ALL RAILS & POSTS SHALL BE SCH 40 AND ALL MATERIAL SHALL BE HOT DIPPED GALVANIZED
CROWN TOP OF FOOTING WHEN NO MOWCURB IS REQUIRED IF APPROVED BY DISTRICT IN WRITING
CENTER RAILS REQUIRED FOR FENCING WITH 8' VERTICAL DISTANCE BETWEEN TOP AND BOTTOM RAIL
TOP OF FOOTING MUST BE AT ELEVATION TO ACCOMMODATE 6" DEEP FORM BOARDS AND
CONCRETE MOWCURB TO BE POURED AFTER FOOTING AND POST INSTALLATION ALONG ALL FENCING
***UPSIZE CHAINLINK POST ONE SIZE FOR ALL ENDS AND CORNERS
ALL FOOTINGS ARE SUBJECT TO SAME REQUIREMENTS INDICATED ON NOTE 4 OF DETAIL LC-06

HESPERIA
Recreation & Park District

CHAIN LINK FENCING

LC-10

2014



MIN. FOOTING SIZE FOR CHAINLINK FENCE HEIGHTS-FINAL DESIGN PER CITY REQUIREMENTS.

FENCE HEIGHT	FOOTING DEPTH	FOOTING DIAMETER	POST DIAMETER
6'0"-8'0"	36"	12"	3-1/2"
10'0"-12'0"	36"	12"	3-1/2"
16'0"-18'0"	48"	16"	6"

NOTES:

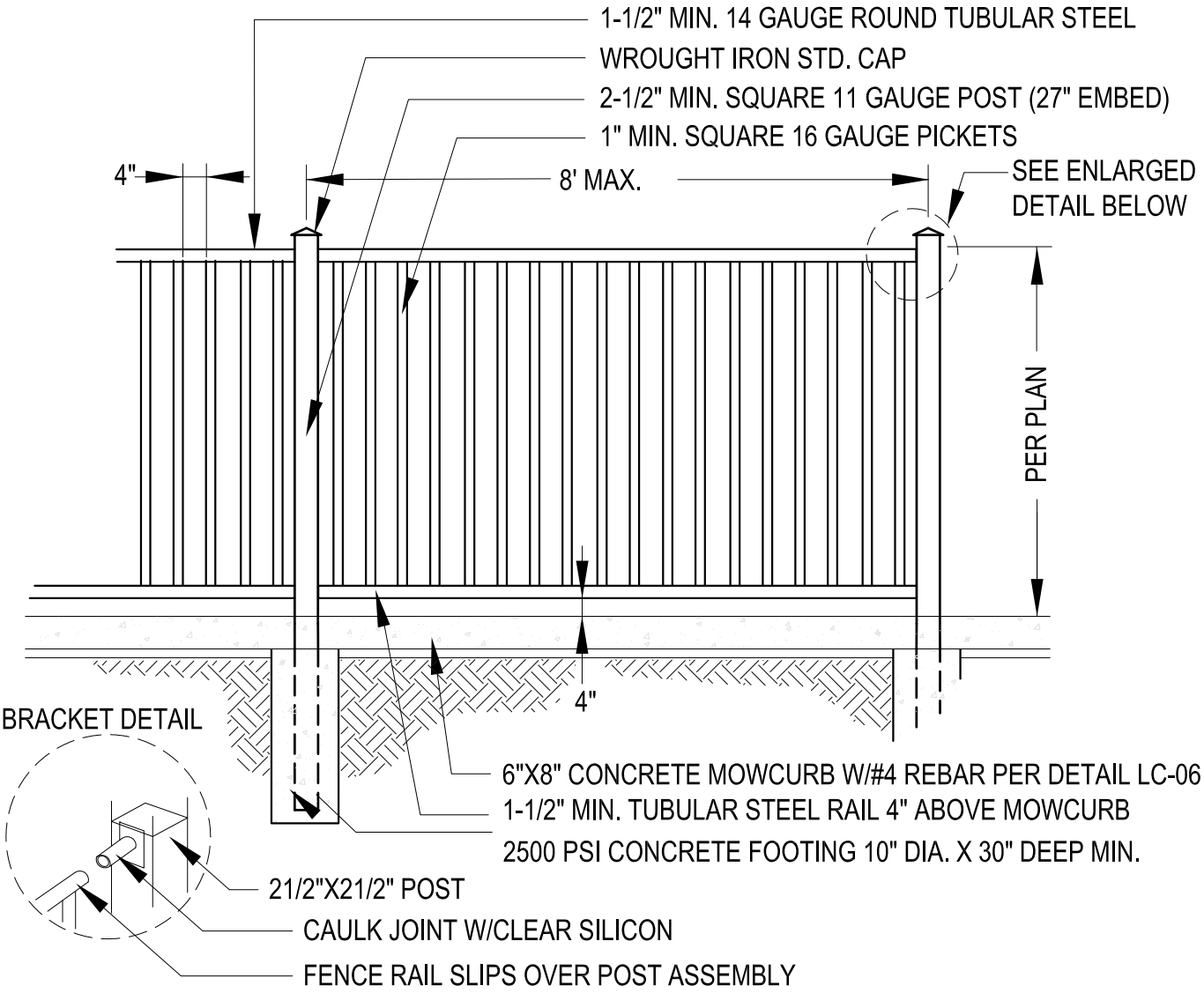
ALL RAILS & POSTS SHALL BE SCH 40 AND ALL MATERIAL SHALL BE HOT DIPPED GALVANIZED
TENSION ROD SHALL BE ATTACHED TO FABRIC @ 16" O.C. W/HOG RINGS
TOP OF FOOTING MUST BE AT ELEVATION TO ACCOMMODATE 6" DEEP FORM BOARDS AND
CONCRETE MOWCURB TO BE POURED AFTER FOOTING AND POST INSTALLATION ALONG ALL FENCING
ALL FOOTINGS ARE SUBJECT TO SAME REQUIREMENTS INDICATED ON NOTE 4 OF DETAIL LC-06
GATE LEAFS LARGER THAN 6' WIDE SHALL BE 4" DIAMETER

HESPERIA
Recreation & Park District

CHAIN LINK GATE

LC-11

2014



NOTES:

ALL PANELS AND POST MUST BE BLACK POWDER COATED.

CONCRETE MOWCURB MUST BE CONTINUOUS BELOW ALL TUBULAR STEEL FENCING TYP.

CONTRACTOR MUST CONFIRM RAIL PANELS FIT PROPERLY PRIOR TO FOOTING INSTALLATION

TOP OF FOOTING MUST BE AT ELEVATION TO ACCOMMODATE 6" DEEP FORM BOARDS AND

CONCRETE MOWCURB TO BE POURED AFTER FOOTING AND POST INSTALLATION ALONG ALL FENCING

VERTICAL PICKETS SHALL HAVE 4-1/2" OPENING MAX. 2" MAX. OPENING WHEN USED AT DOG PARKS

BOTTOM RAIL TO BE 4" FROM TOP OF MOWCURB. BOTTOM RAIL TO BE 2" FROM TOP FOR DOG PARKS

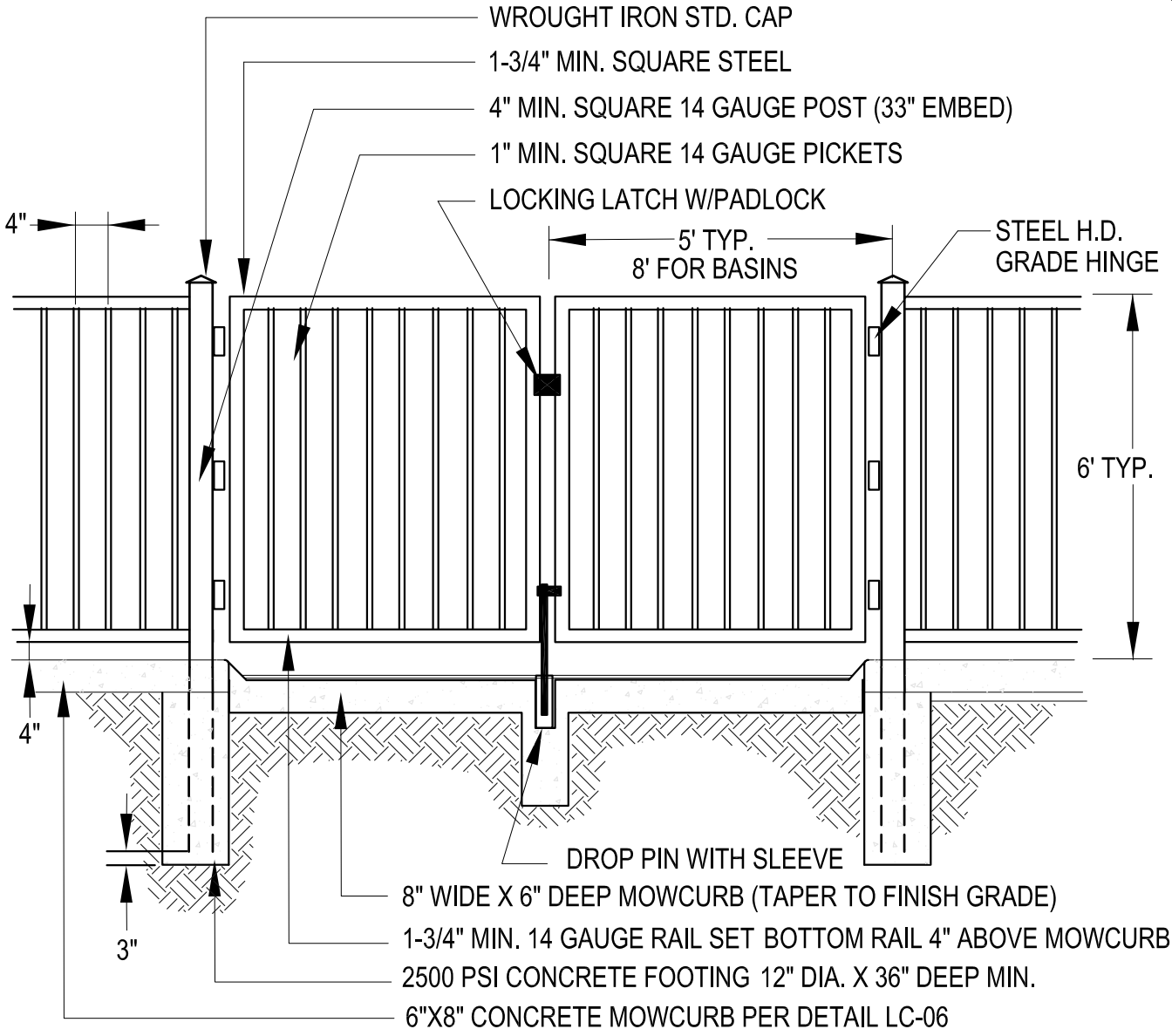
ALL FOOTINGS ARE SUBJECT TO SAME REQUIREMENTS INDICATED ON NOTE 4 OF DETAIL LC-06

HESPERIA
Recreation & Park District

TUBULAR STEEL FENCING

LC-12

2014



NOTES:

ALL PANELS AND POST MUST BE BLACK POWDER COATED. WHEN NEEDED, ALL WELDS FOR GATE HINGES MUST HAVE ONE COAT EPOXY PRIMER & TWO COATS OF EXTERIOR ENAMEL

TOP OF FOOTING MUST BE AT ELEVATION TO ACCOMMODATE 6" DEEP FORM BOARDS AND CONCRETE MOWCURB TO BE POURED AFTER FOOTING AND POST INSTALLATION ALONG ALL FENCING

VERTICAL PICKETS SHALL HAVE BE AT 4" O.C. 2" MAX. OPENING WHEN USED AT DOG PARKS

BOTTOM RAIL TO BE 4" FROM TOP OF MOWCURB. BOTTOM RAIL TO BE 2" FOR DOG PARKS

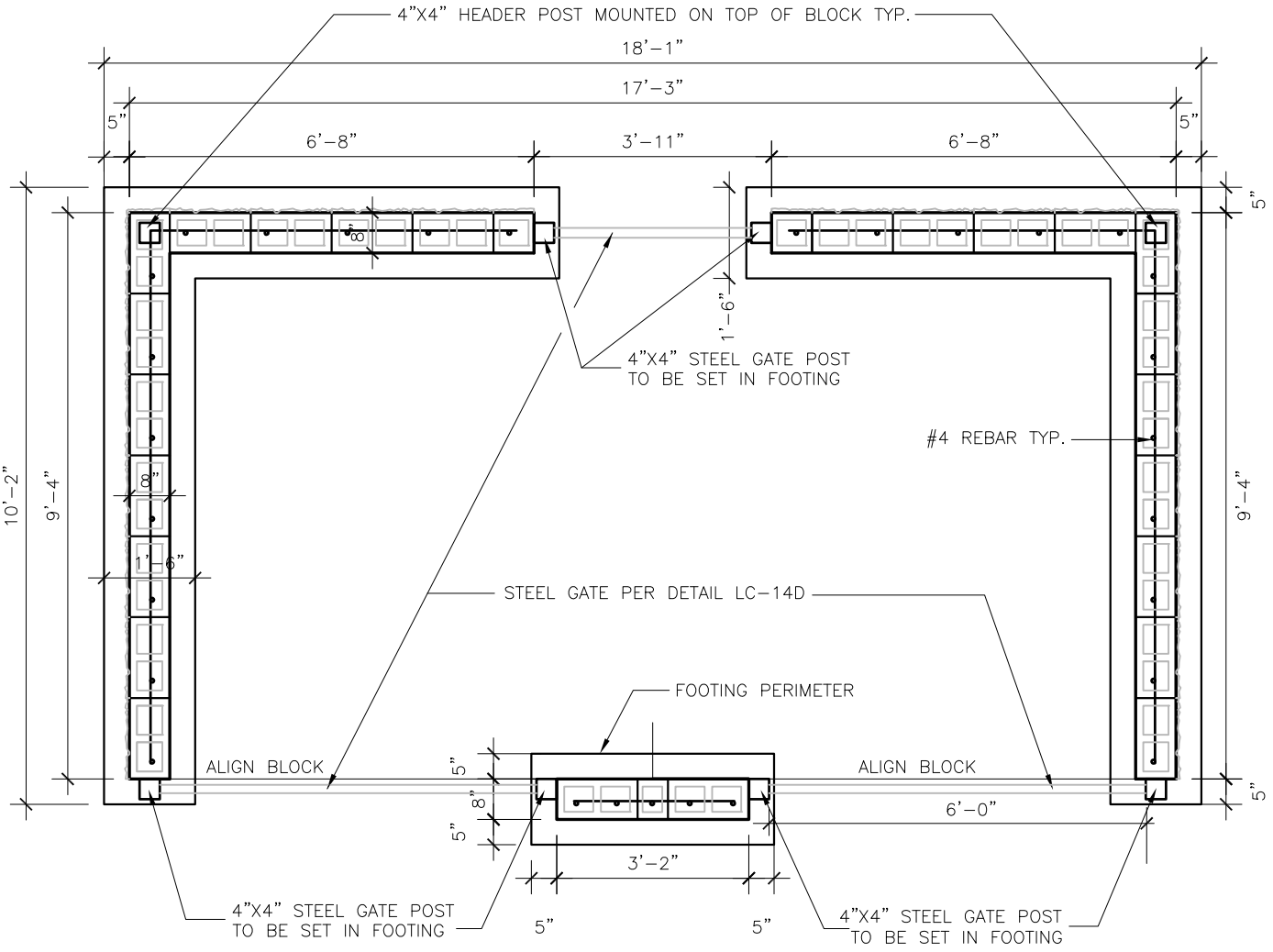
ALL FOOTINGS ARE SUBJECT TO SAME REQUIREMENTS INDICATED ON NOTE 4 OF DETAIL LC-06

HESPERIA
Recreation & Park District

TUBULAR STEEL GATE

LC-13

2014



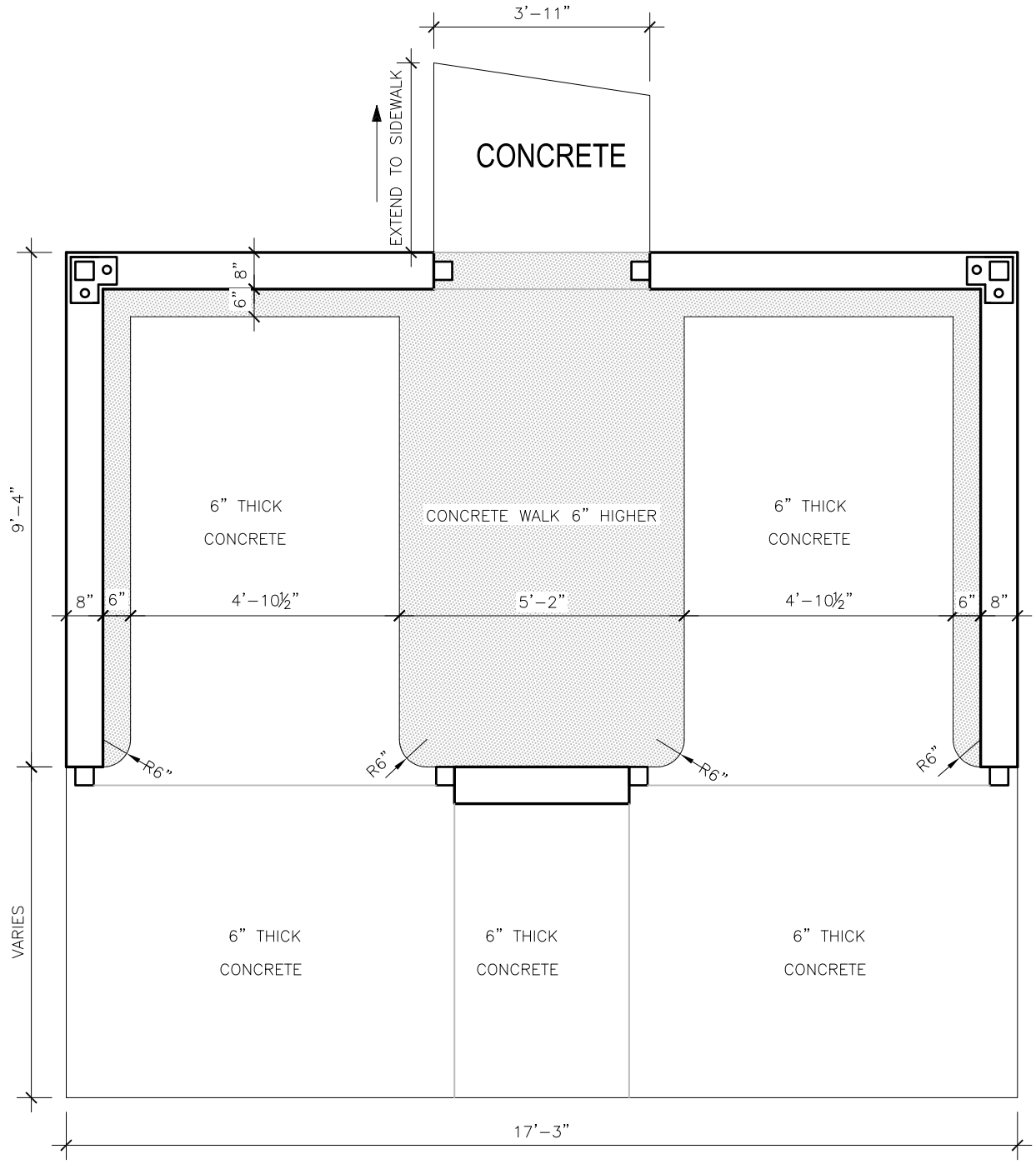
TRASH ENCLOSURE FOOTING LAYOUT

HESPERIA
Recreation & Park District

TRASH ENCLOSURE FOOTING LAYOUT

LC-14A

2014



NOTE:
FOR SMALL COMMUNITY PARKS A SINGLE DUMPSTER OPENING MAY BE APPROVED. SHOP DRAWINGS MUST BE SUBMITTED FOR APPROVAL

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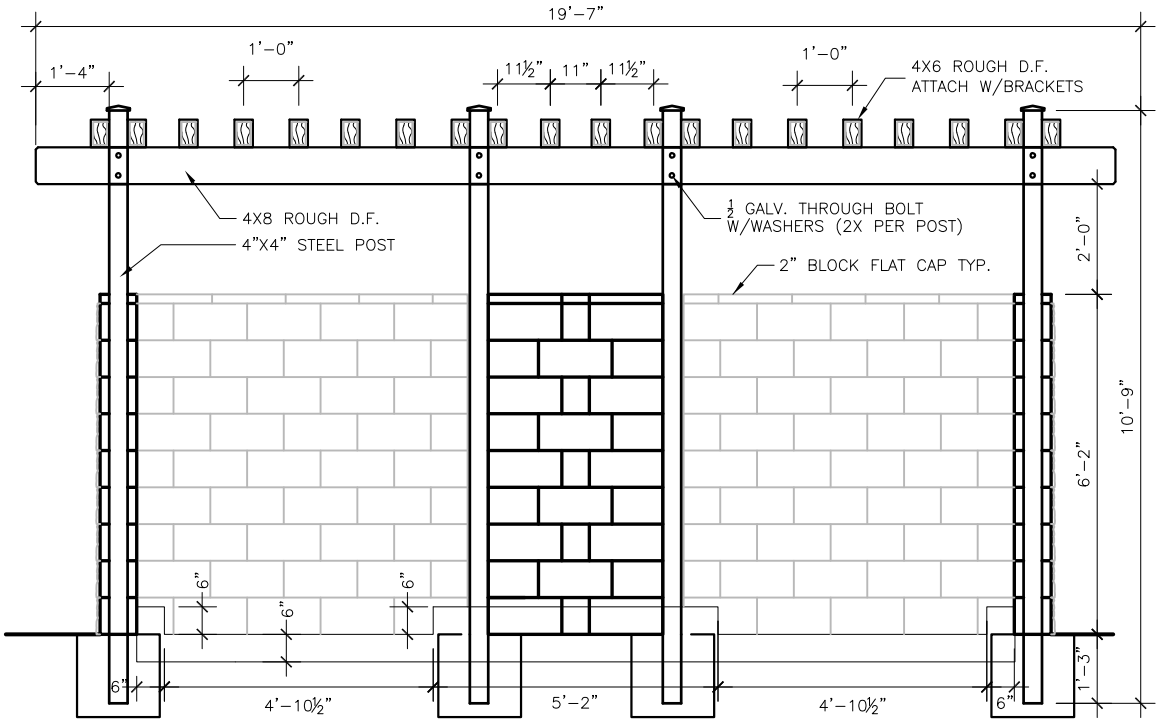
Recreation & Park District

TRASH ENCLOSURE PLAN VIEW

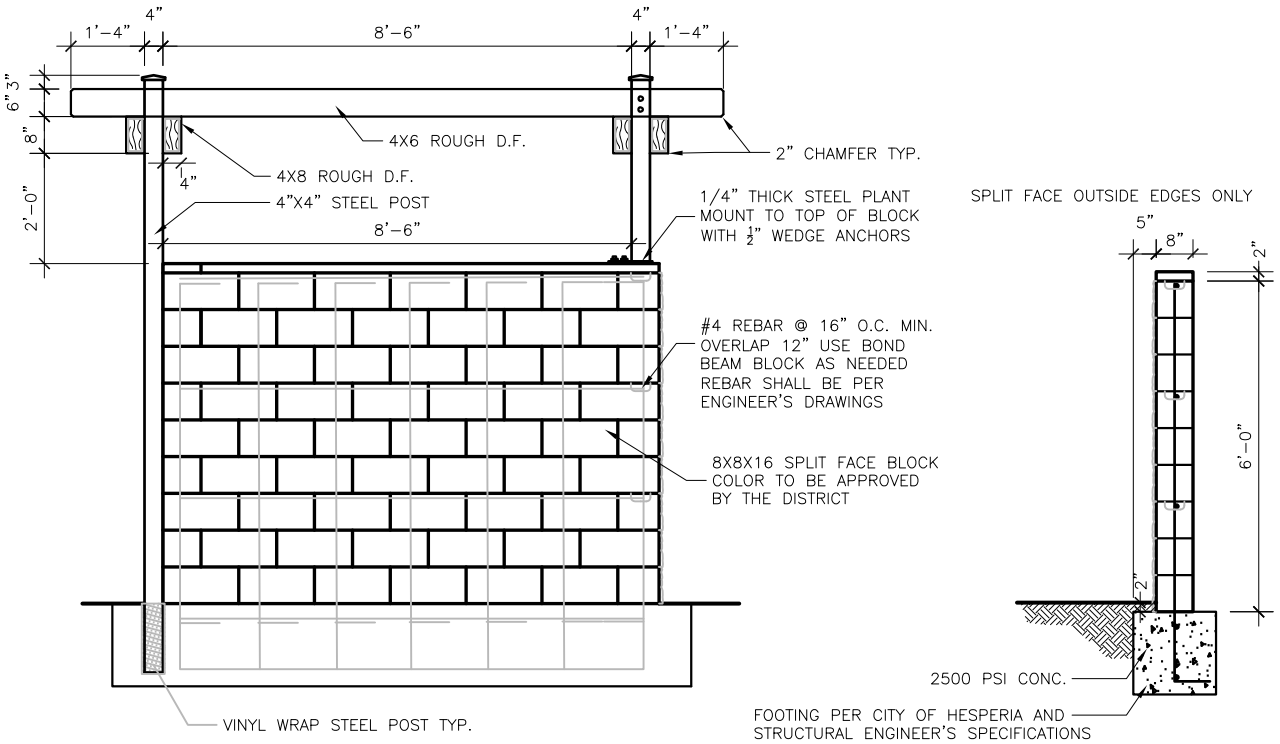
LC-14B

2014

FRONT VIEW



RIGHT/LEFT VIEW

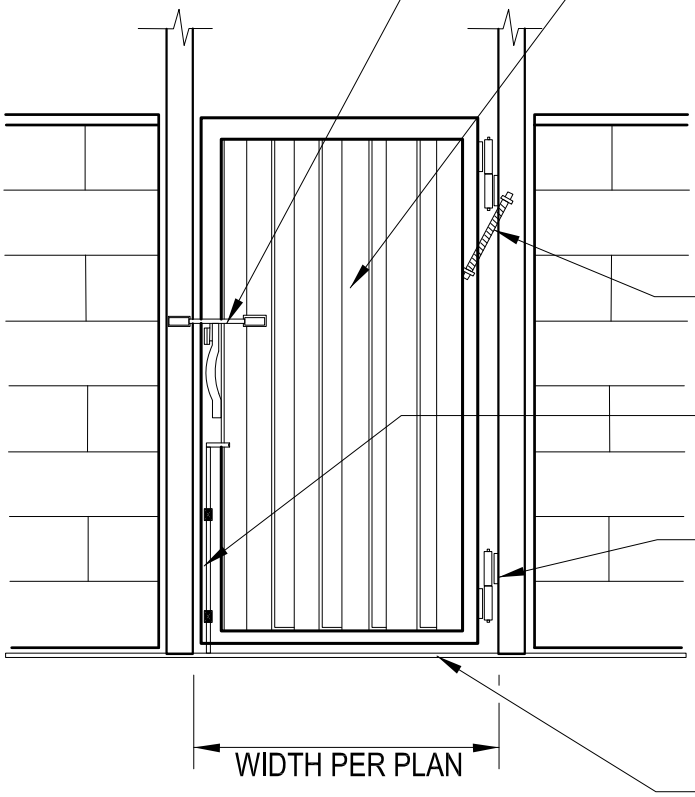


HESPERIA
Recreation & Park District

TRASH ENCLOSURE ELEVATION VIEW

LC-14C

2014



HD STEEL LOCKABLE SLIDING HASP

22 GAUGE STEEL ENCLOSURE GATE
GRIND ALL WELDS SMOOTH
GATE SHALL BE POWDER COATED
COLOR MUST BE APPROVED BY THE
DISTRICT'S REPRESENTATIVE

SPRING ASSIST FOR AUTOSHUT

STEEL DROP HINGE FOR SECURING GATE
IN OPEN POSITION ONLY

HD STEEL HINGE PLATE CONNECTED
TO STEEL VERTICAL POST HINGES SHALL
HAVE GREASABLE ZERK FITTINGS

PROVIDE 2" MIN. CLEARANCE FROM CONC.
3" MAX. OPENING

NOTES:

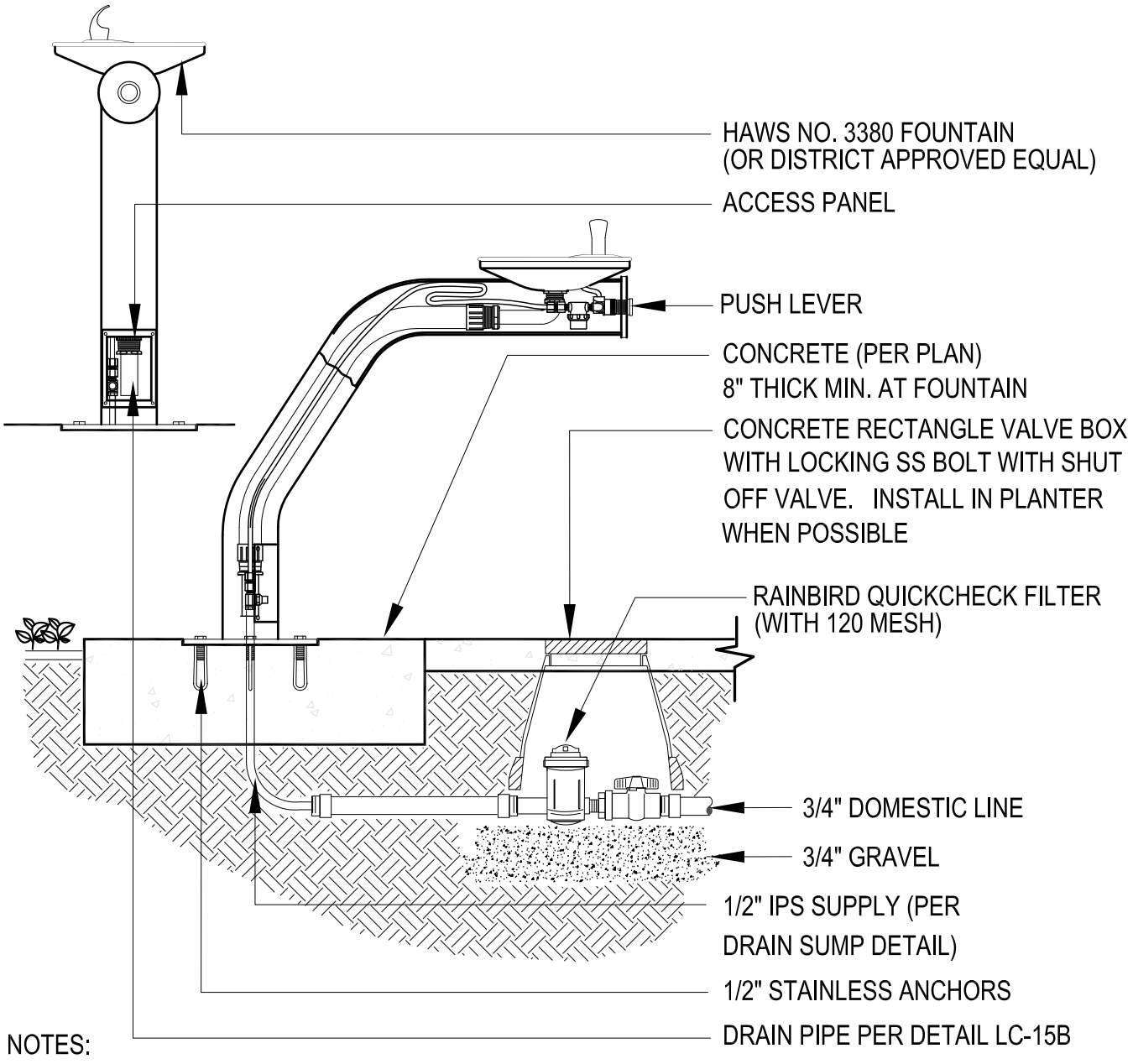
ALL STEEL FABRICATION SHALL RECEIVE 1 COAT EPOXY PRIMER AND 2 COATS OF EXTERIOR ENAMEL
CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND COLOR SAMPLES FOR APPROVAL PRIOR TO CONSTRUCTION

HESPERIA
Recreation & Park District

TRASH ENCLOSURE GATE

LC-14D

2014



NOTES:

1. INSTALL DOMESTIC WATER SUPPLY PER PLAN, LOCAL CODES AND MANUFACTURER'S RECOMMENDATIONS
2. INSTALL DRAIN SUMP AND WASTE SUPPLY PER DETAIL LC-15B AND MANUFACTURER'S RECOMMENDATIONS
3. DRFINKING FOUNTAINS SHALL BE FREEZE PROTECTED

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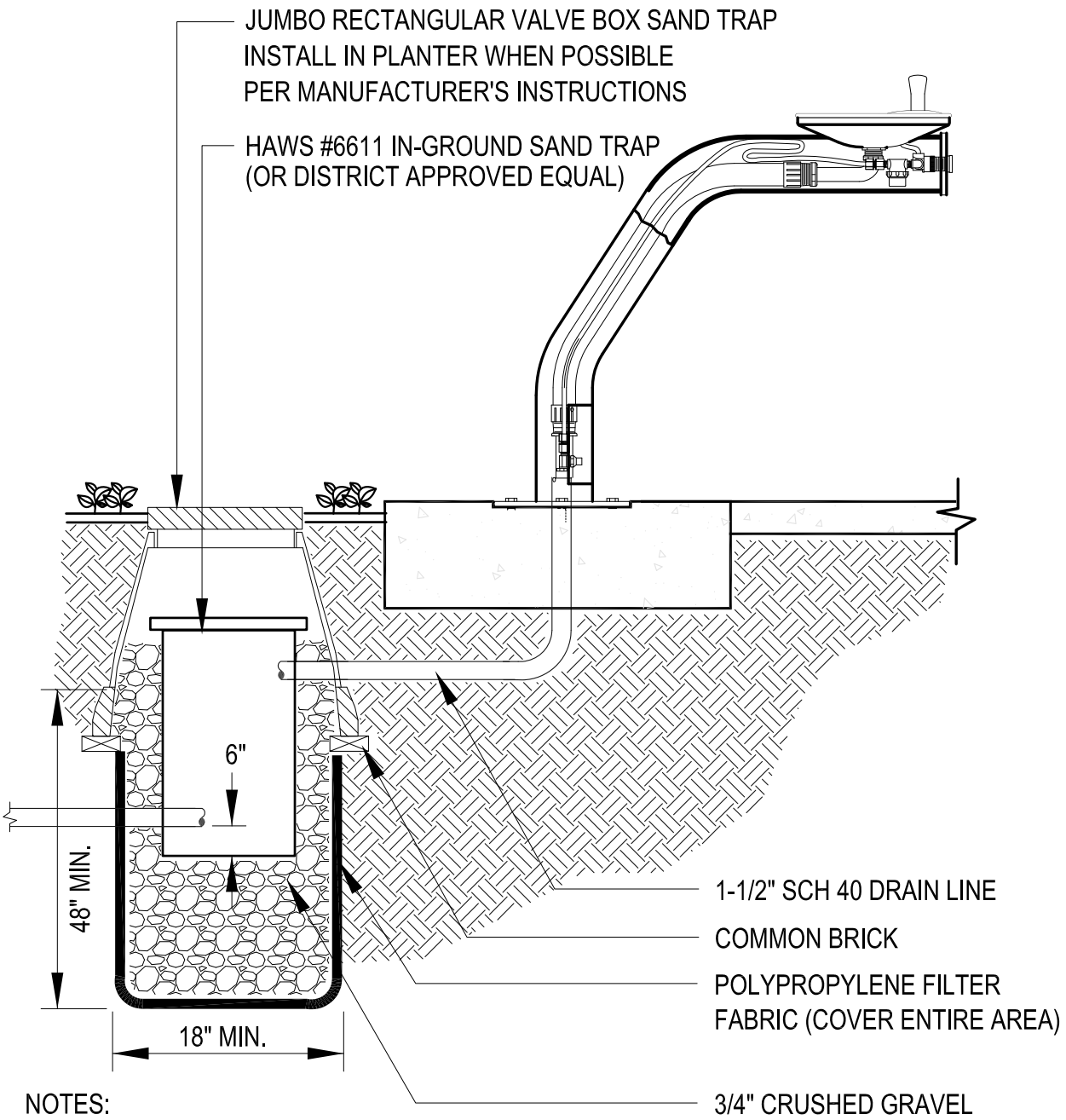
Recreation & Park District

DRINKING FOUNTAIN

LC-15A

2014



NOTES:

INSTALL DRAIN LINE PER PLAN, LOCAL CODES AND MANUFACTURER'S RECOMMENDATIONS
DRAINLINE TO BE CONNECTED TO RESTROOM DRAIN OR OTHER BUILDING DRAIN WHEN POSSIBLE
WHEN BUILDING DRAIN IS NOT AVAILABLE INSTALL DRAIN LINE IN 6'X6'X6' GRAVEL SUMP
GRAVEL SUMP SHALL HAVE 3/4" GRAVEL WRAPPED WITH 140N MIRAFY FILTER FABRIC AND HAVE
2 EA. 4" DIA. VERTICAL PERFORATED DRAIN PIPES FOR WATER LEVEL VIEWING AND PUMPING

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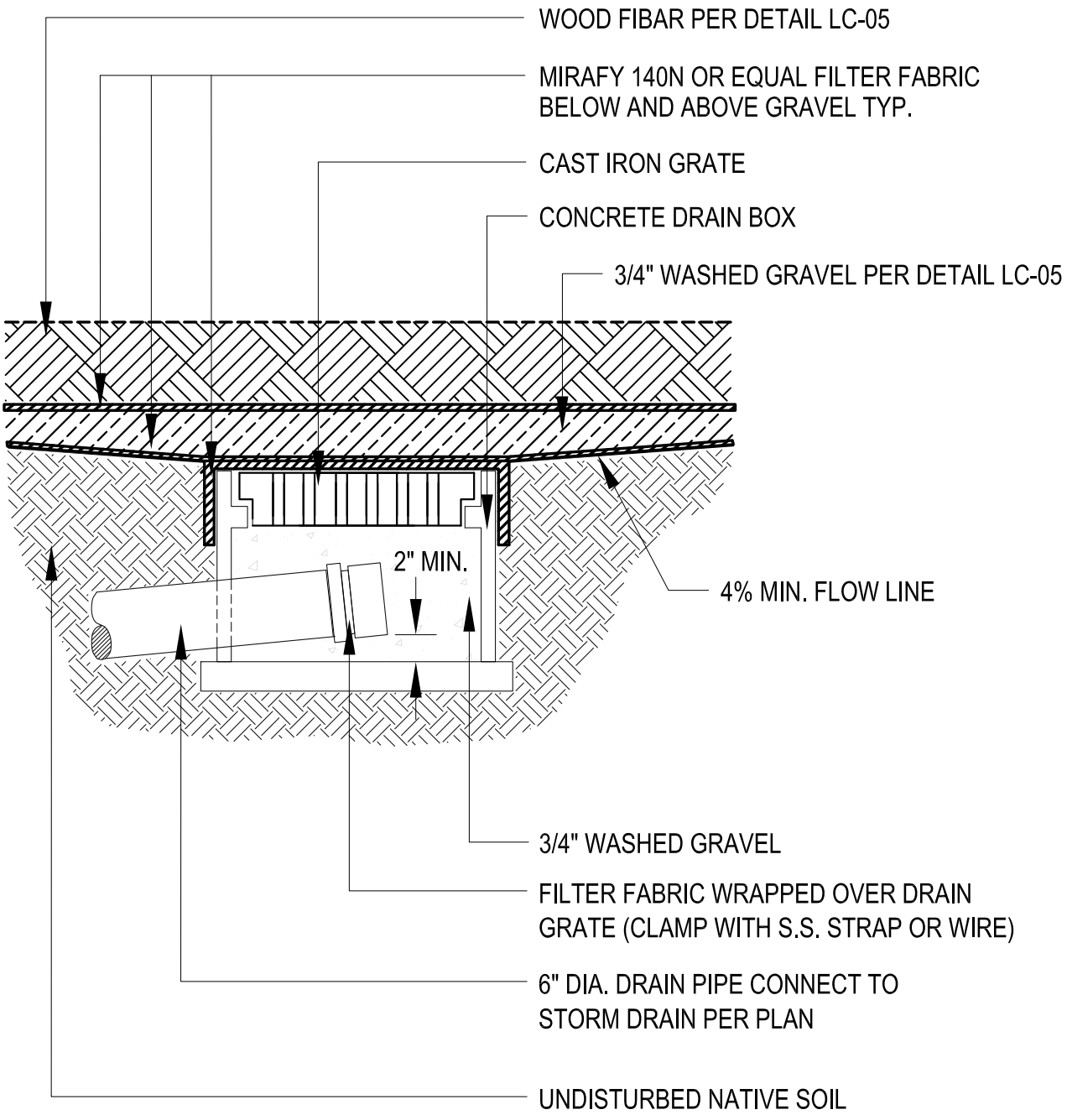
Recreation & Park District

DRINKING FOUNTAIN DRAIN

LC-15B

2014



NOTE:

PROVIDE 1 DRAIN FOR EVERY 400 SQ.FT.

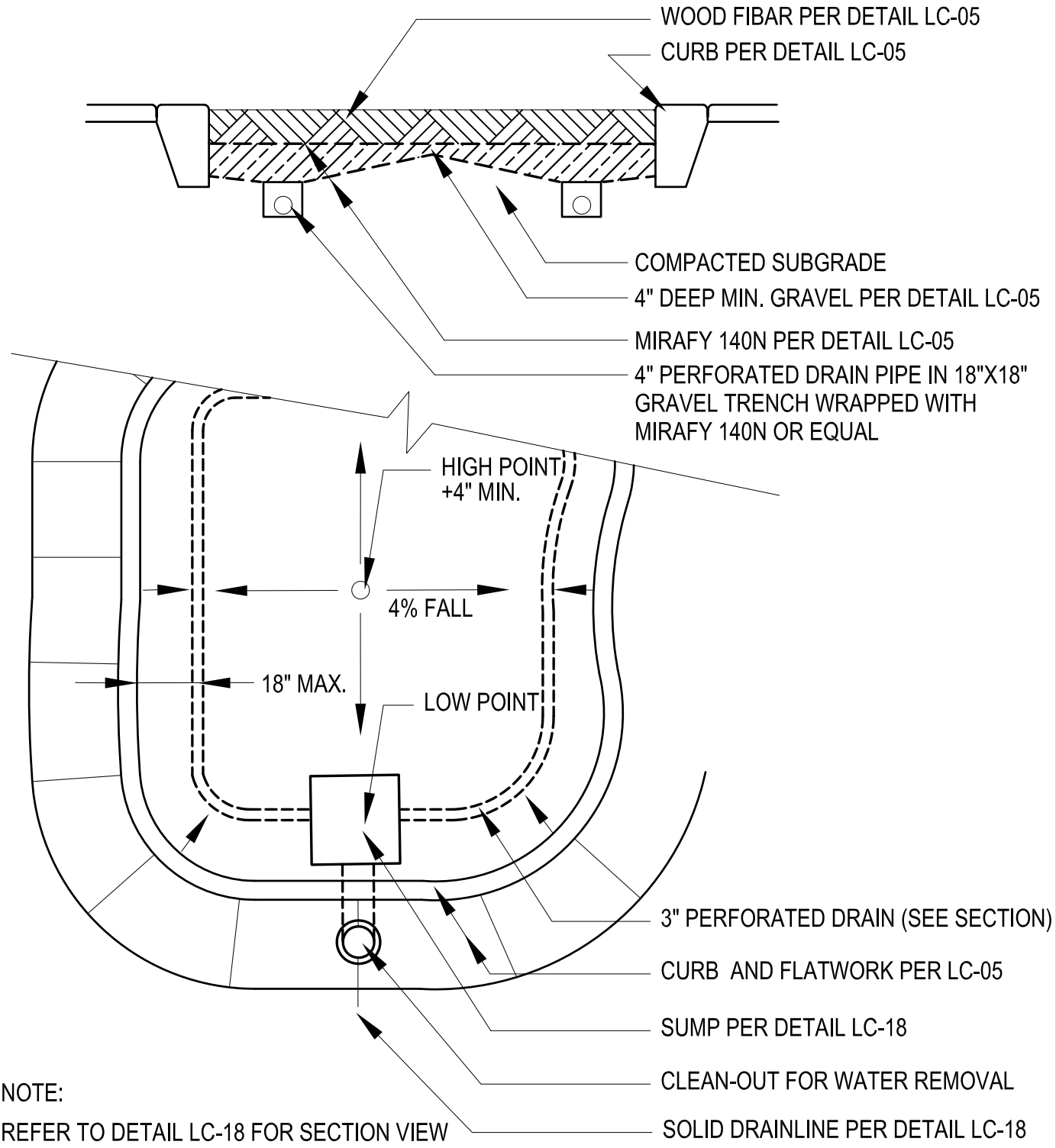
HESPERIA
Recreation & Park District

PLAY AREA DRAINAGE (TYPICAL)

LC-16

2014

FOR USE ONLY WHEN NO STORM DRAINS ARE USED



NOTE:

REFER TO DETAIL LC-18 FOR SECTION VIEW

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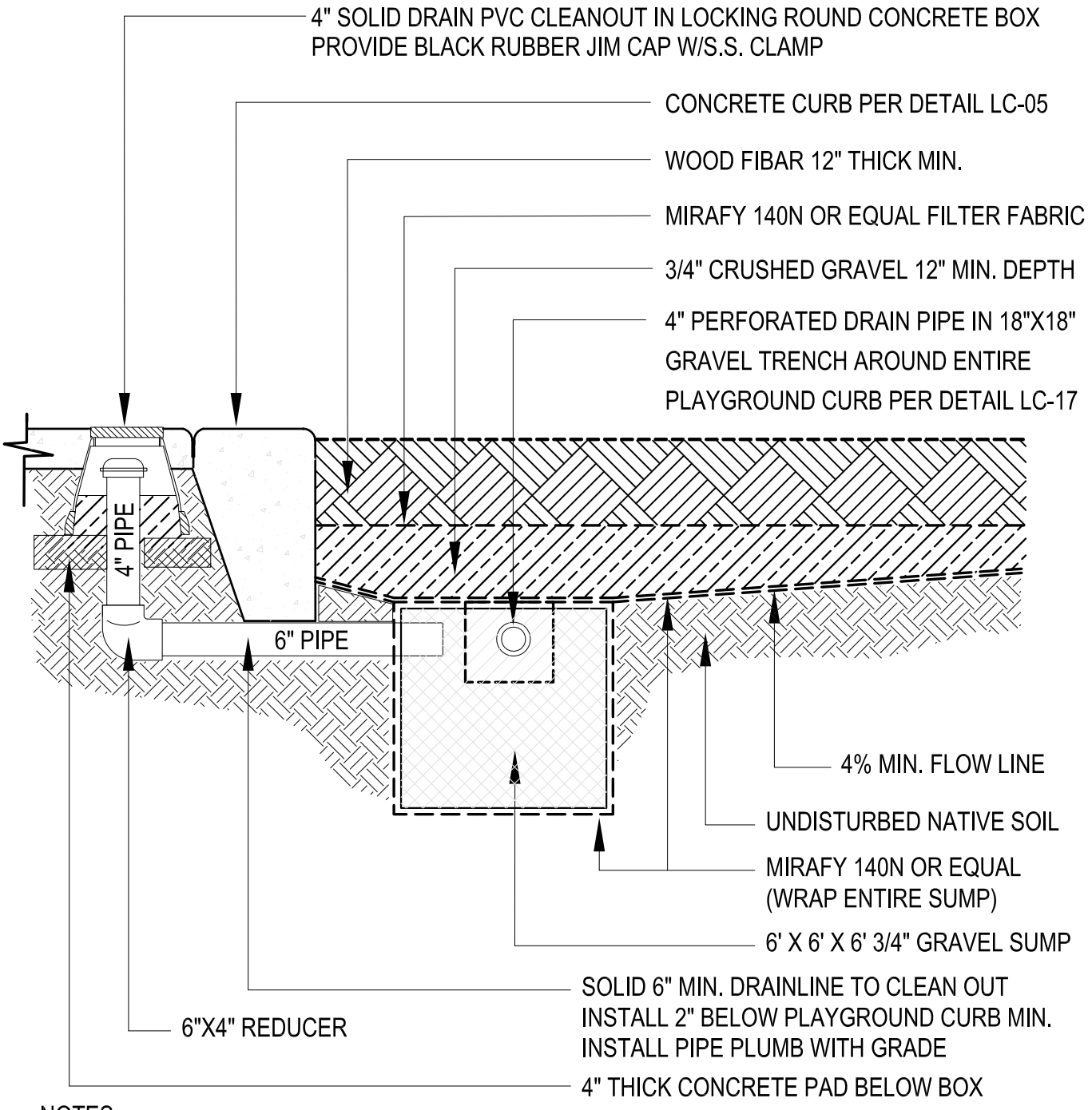
Recreation & Park District

PLAY AREA SUMP DRAIN LAYOUT

LC-17

2014

FOR USE ONLY WHEN NO STORM DRAINS ARE USED



NOTES:

SUBGRADE MUST HAVE 4% MIN. SLOPE TOWARDS SUMP

REFER TO DETAIL LC-17 FOR PLAN VIEW

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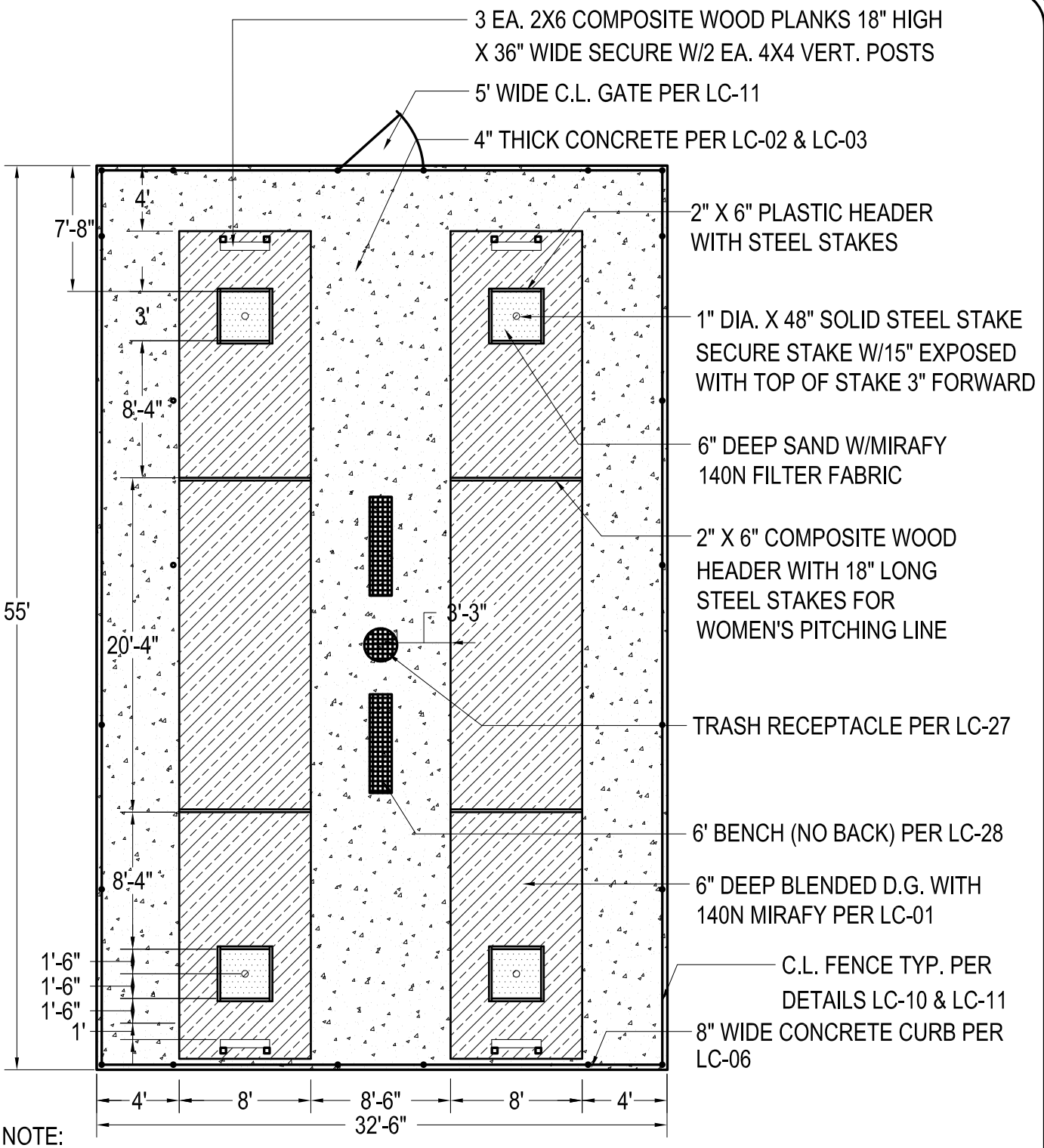
Recreation & Park District

PLAY AREA SUMP DRAIN SECTION

LC-18

2014



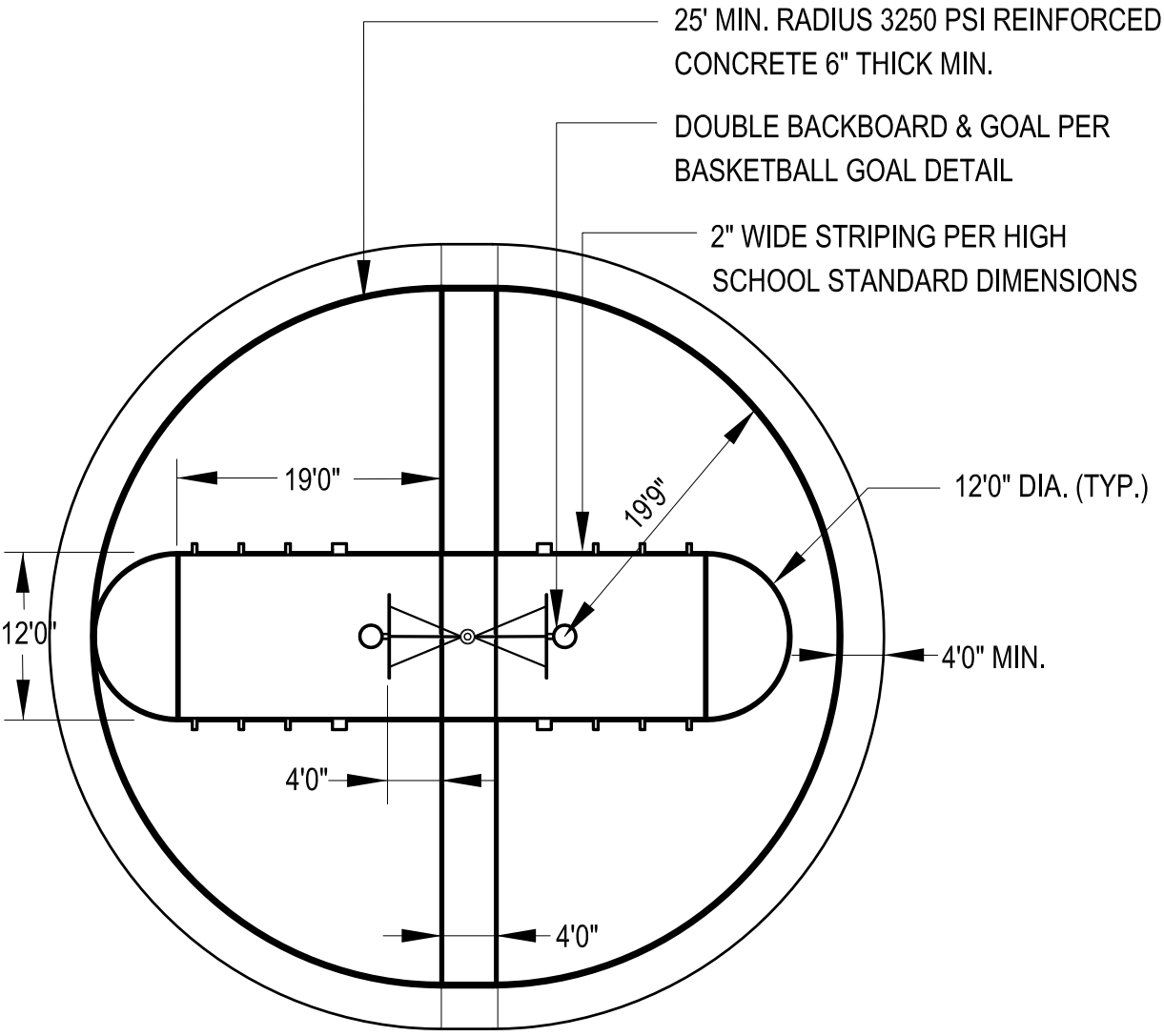
NOTE:
WROUGHT IRON FENCING MAY BE REQUIRED IN LIEU OF CHAIN LINK AS DIRECTED BY THE DISTRICT

HESPERIA
Recreation & Park District

TYPICAL HORSESHOE PIT

LC-19

2014



NOTES:

CONCRETE SHALL HAVE A HIGH POINT AT GOAL POST AND SLOPE TO PERIMETERS PER PLAN TO PROVIDE PROPER DRAINAGE (1% - 1.5% SLOPE REQUIRED)
ENTIRE PLAYING AREA SHALL HAVE AN APPROVED COLORED SPORTS SURFACE
COLORS AND LAYOUT MUST BE APPROVED PRIOR TO CONSTRUCTION
CONCRETE SUBGRADE SHALL HAVE 8" DEEP CLASS 2 BASE COMPACTED TO 90%
CONCRETE SHALL HAVE #4 REBAR AT 36" O.C. WITH SUPPORT BLOCKS AT 4' MIN. SPACING
CONCRETE SHALL COMPLY WITH SOILS ENGINEERING RECOMMENDATIONS WHEN ADDITIONAL MATERIALS OR DEPTHS ARE INDICATED THAT ARE GREATER THAN DISTRICT DETAIL
PROVIDE 1-1/2" DEEP CONCRETE SAW CUTS AT 10' SPACING

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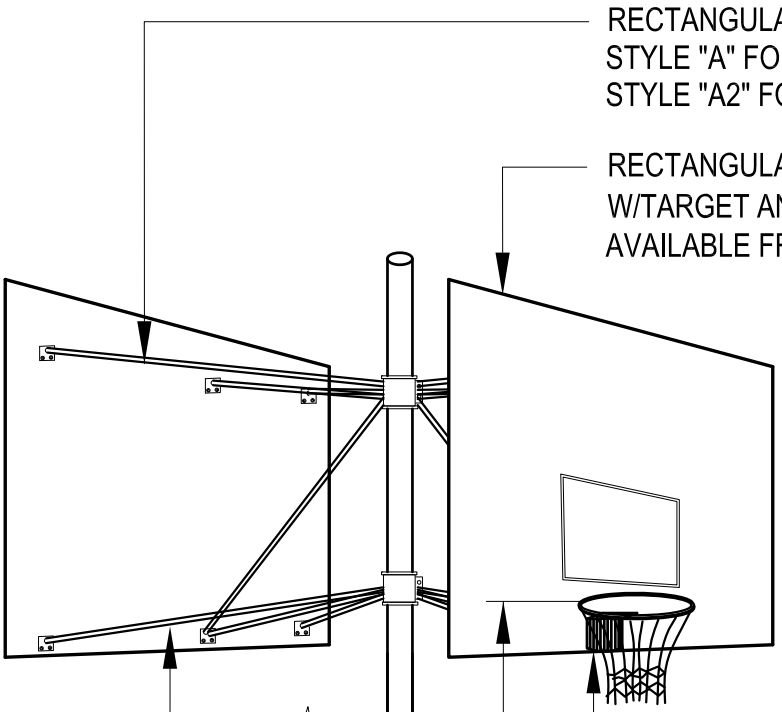
Recreation & Park District

BASKETBALL HALF COURT

LC-20

2014



NOTES:

FOOTING MUST BE INSPECTED BY THE DISTRICT AND LOCAL CITY (IF APPLICABLE) PRIOR TO POURING

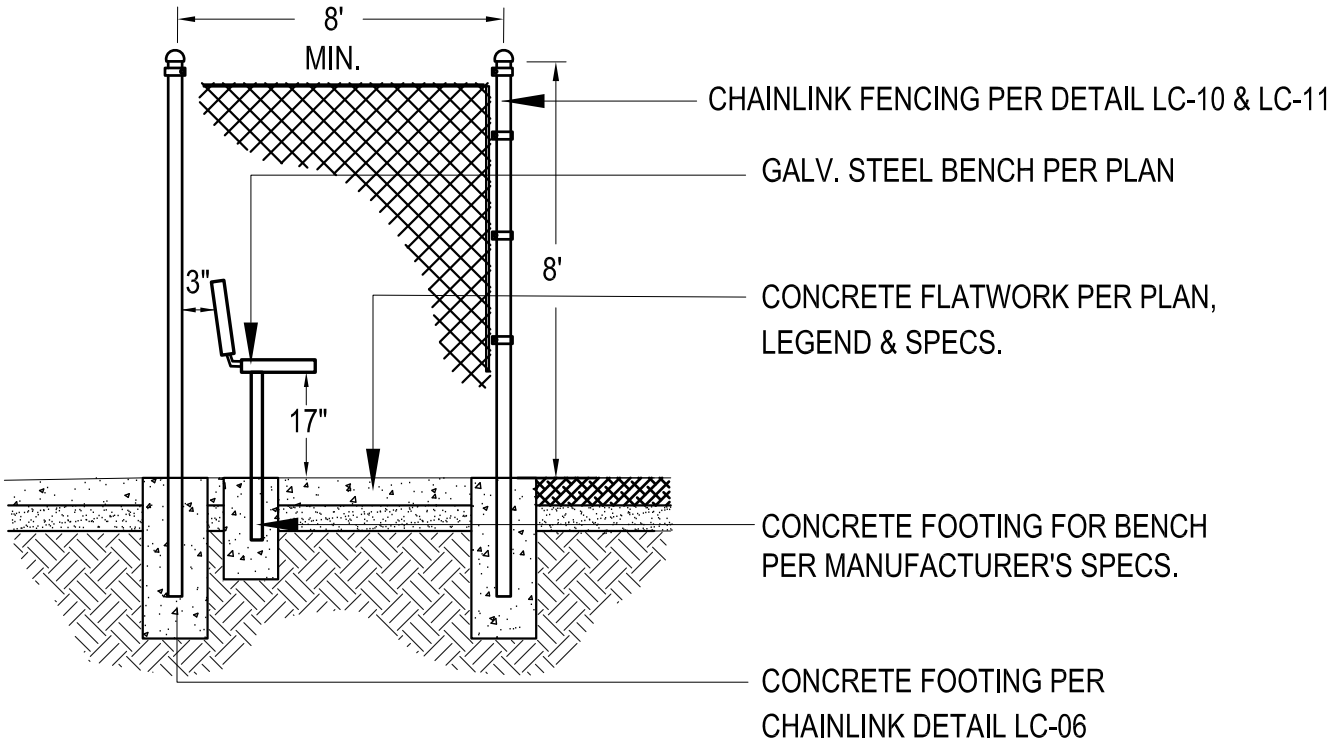
CONFIRM MODEL NUMBERS WITH TOMARK REP. BASED UPON FIELD LAYOUT PRIOR TO ORDERING

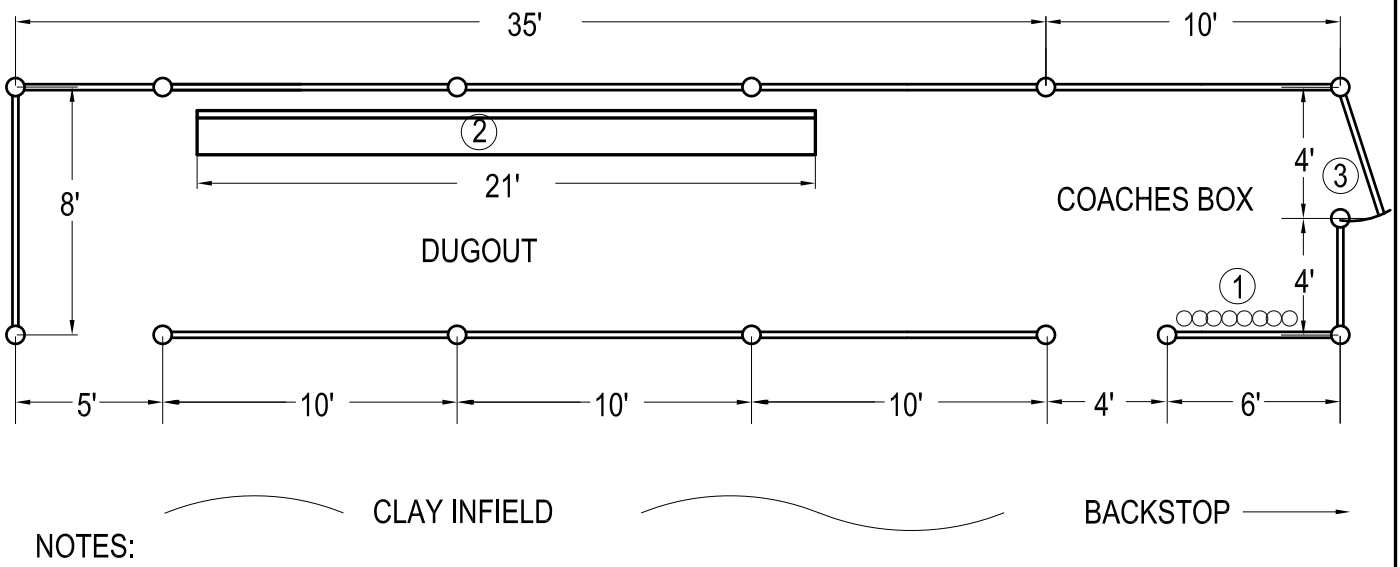
HESPERIA
Recreation & Park District

BASKETBALL GOAL

LC-21

2014





NOTES:

① IN-GROUND GALV. STEEL BAT RACK TOMARK SPORTS #TB-K30026

② IN-GROUND 21' GALV. STEEL PLAYER'S BENCH TOMARK SPORTS #K10697

③ 4' WIDE CHAINLINK GATE WITH SPRING LOADED HINGES FOR AUTO CLOSING & LOCKABLE LATCH

HESPERIA
Recreation & Park District

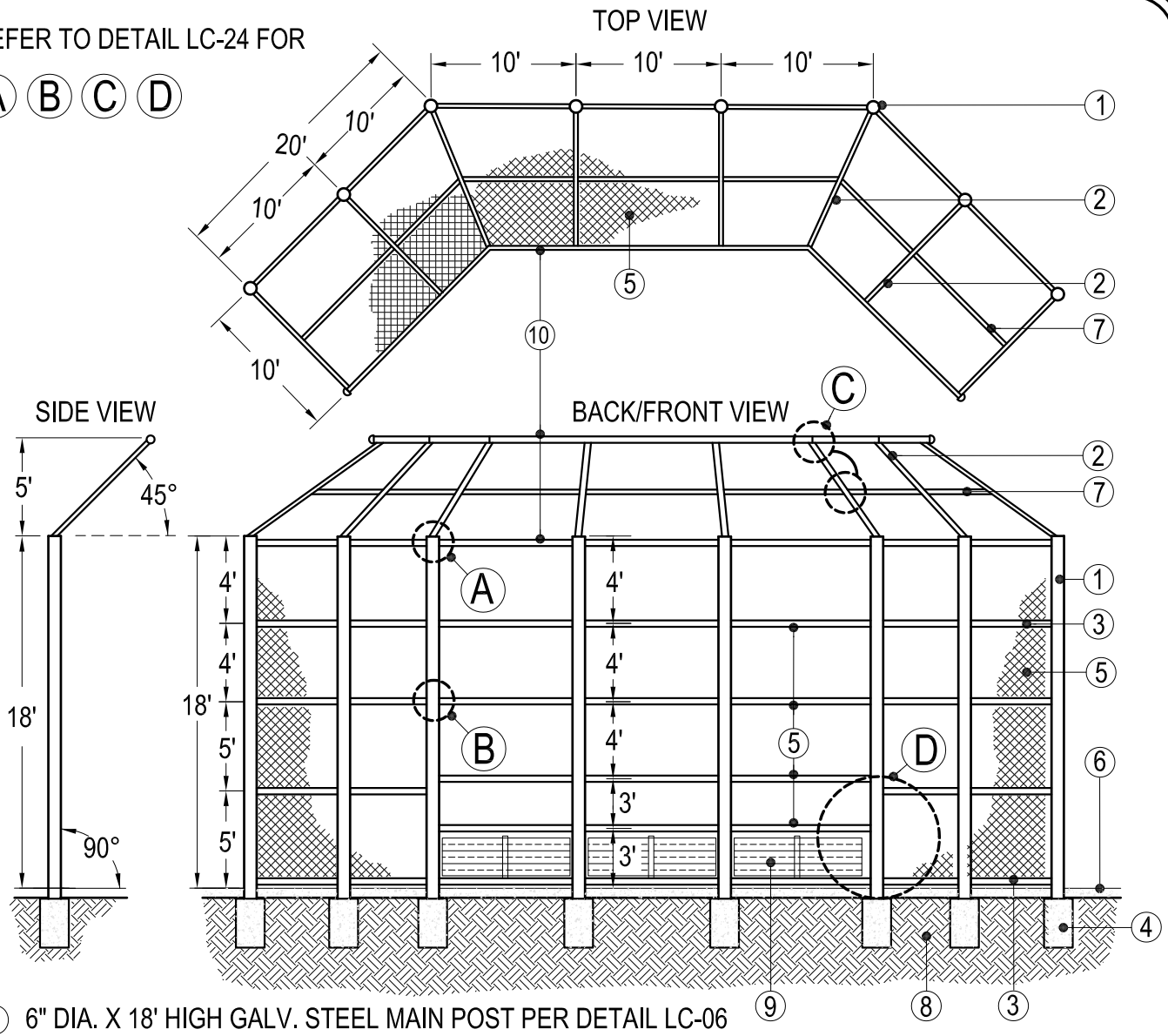
TYPICAL DUGOUT LAYOUT

LC-22

2014

REFER TO DETAIL LC-24 FOR

Ⓐ Ⓑ Ⓒ Ⓓ



① 6" DIA. X 18' HIGH GALV. STEEL MAIN POST PER DETAIL LC-06
② 3-1/2" DIA. GALV. STEEL POST @ 45° FOR OVERHANG (SECURE TO VERT. POST PER DETAIL LC-24)
③ 2-3/8" DIA. GALV. STEEL HORZ. RAIL (SECURE TO VERT. POST PER LC-24)
④ 18" DIA. X 60" DEEP CONC. MIN. SIZE FOOTING PER LC-06 & PROJECT STRUCTURAL CALCULATIONS
⑤ 9 GAUGE CHAINLINK MESH (2" MIN.)
⑥ 12" WIDE CONCRETE CURB PER DETAIL LC-06
⑦ 2-3/8" X 10' HIGH HORZ. OVER HANG (SUPPORT PER DETAIL LC-24)
⑧ UNDISTURBED SUBGRADE
⑨ RECYCLED PLASTIC 2" X 6" BUMPER BOARDS 3' TALL (SECURE PER DETAIL LC-24)
⑩ 3-1/2" DIA GALV. STEEL HORZ. END RAIL (SECURE TO 45° POST PER DETAIL LC-24)

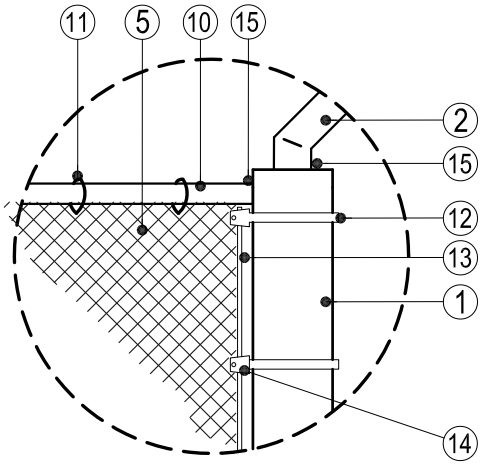
REFER TO DETAIL LC-24 FOR LEGEND CONTINUATION

HESPERIA
Recreation & Park District

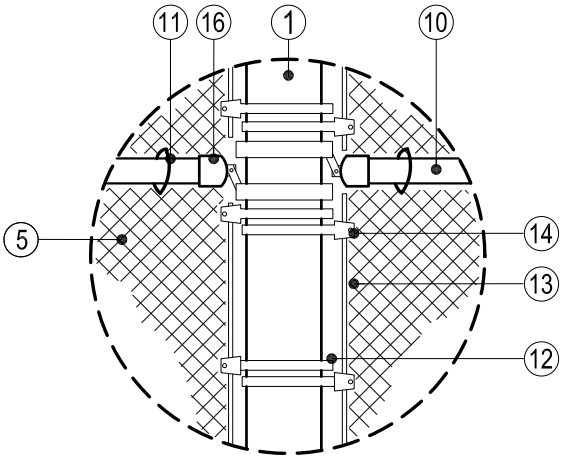
CHAIN LINK BACKSTOP

LC-23

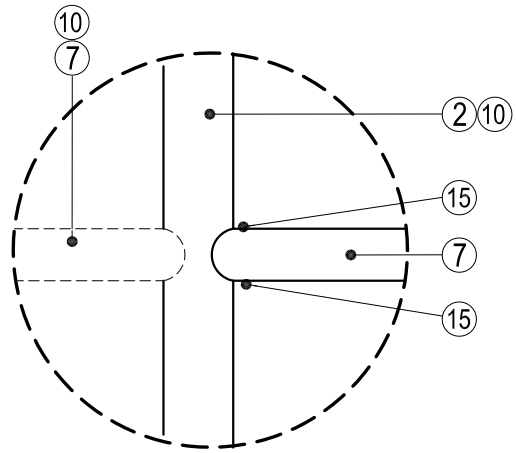
2014



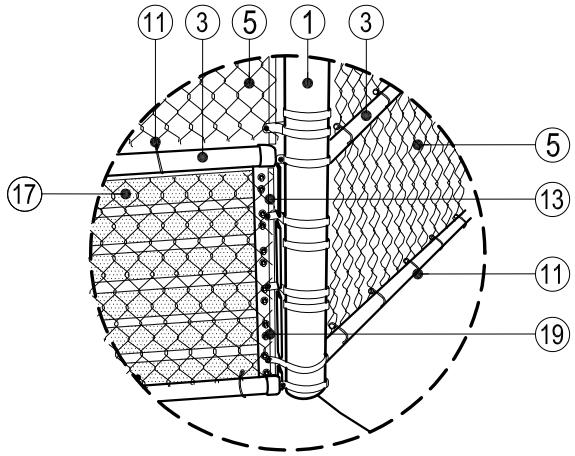
SEE Ⓐ DETAIL LC-23



SEE Ⓑ DETAIL LC-23



SEE Ⓒ DETAIL LC-23



SEE Ⓓ DETAIL LC-23

REFER TO DETAIL LC-23 FOR 1 -10 NOTES

⑪ 9 GA. GALV. HOG RING @ 24" SPACING

⑫ 6-5/8" GALV. TENSION BAR

⑬ 3/4" GALV. TENSION BAR

⑭ GALV. NUT & BOLT TO SECURE RING

⑮ WELD GALV. METAL POST/PLATES TOGETHER AND APPLY COLD GALV. PAINT

⑯ GALV. RAIL/POST END CAP

⑰ 2"X6" COMPOSITE WOOD (6X HIGH) PROVIDE 1" GAP BETWEEN EACH BOARD PROVIDE 2" X 1/4" THICK GALV. VERT. FLAT BAR TO CONNECT/SUPPORT BOARDS IN CENTER TO PREVENT SAG

⑱ 3"X36"X5' GALV. ANGLE WELDED TO 6" POST TO SECURE BUMPER BOARDS

⑲ 1/2" GAL. BOLT WASHER & NUT TO SECURE BOARD TO GALV. ANGLE (TWO PER CONNECTION)

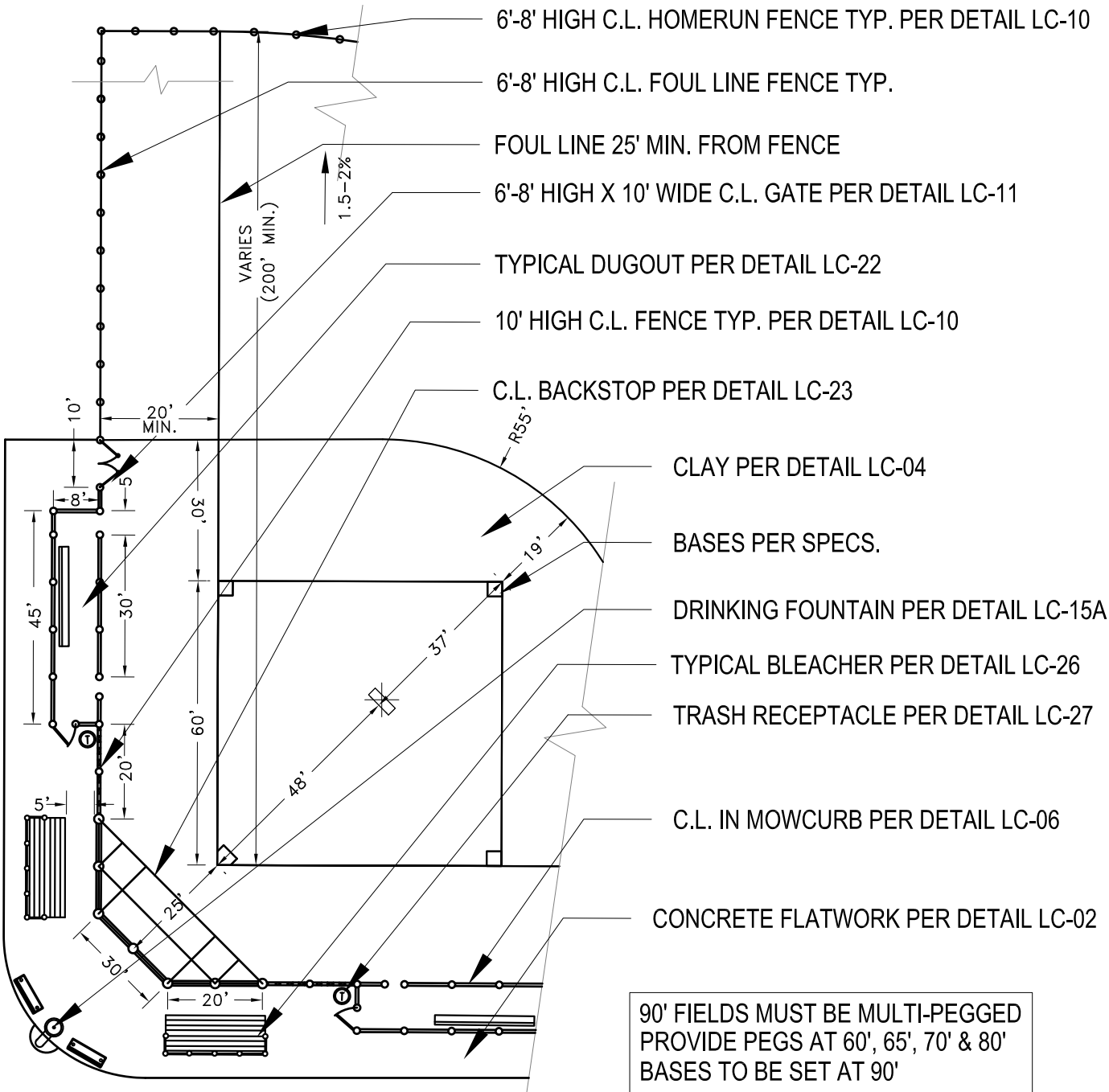
NOTE: ALL JOINTS SHALL BE WELDED ON SITE AND PRIMED WITH COLD GALV. PAINT

HESPERIA
Recreation & Park District

CHAIN LINK BACKSTOP CONNECTIONS

LC-24

2014



NOTES:

DIMENSIONS ARE TYPICAL REFER TO PLAN FOR ACTUAL DIMENSIONS

CHAINLINK FENCING BETWEEN BACKSTOP AND COACHES BOX AT DUGOUT SHALL BE 10' HIGH

HESPERIA
Recreation & Park District

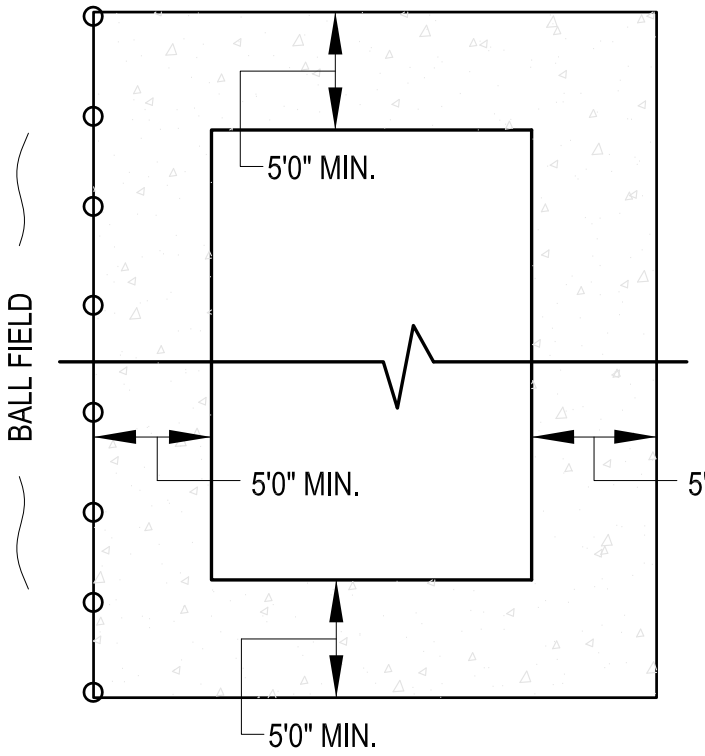
BALL FIELD LAYOUT

LC-25

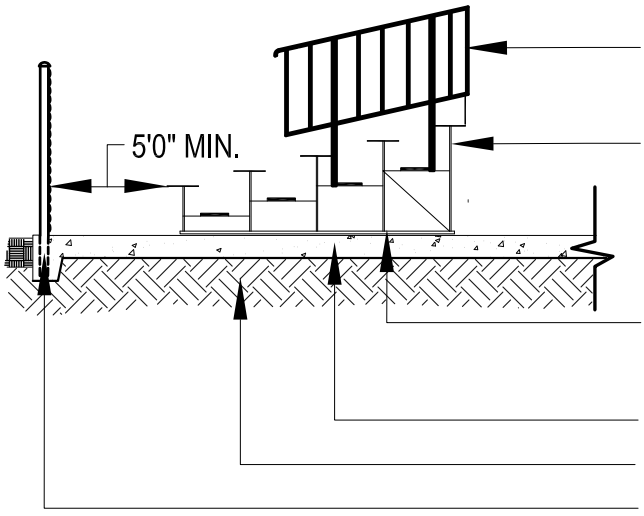
2014

ALUMINUM BLEACHER

MODEL #TM-K13722 (OR APPROVED EQUAL)



PLAN VIEW



ALUMINUM PICKET RAILING

ALUMINUM BLEACHERS

ANCHOR BOLT BLEACHERS PER MANUFACTURER'S SPECIFICATIONS

CONCRETE PER DETAIL LC-02 & LC-03

COMPACTED SUBGRADE

BALL FIELD CHAINLINK FENCING

NOTES:

SECURE ALL PLASTIC END CAPS WITH RIVETS

CONTACT TOMARK SPORTS @ (800) 959-1844

HESPERIA Recreation & Park District

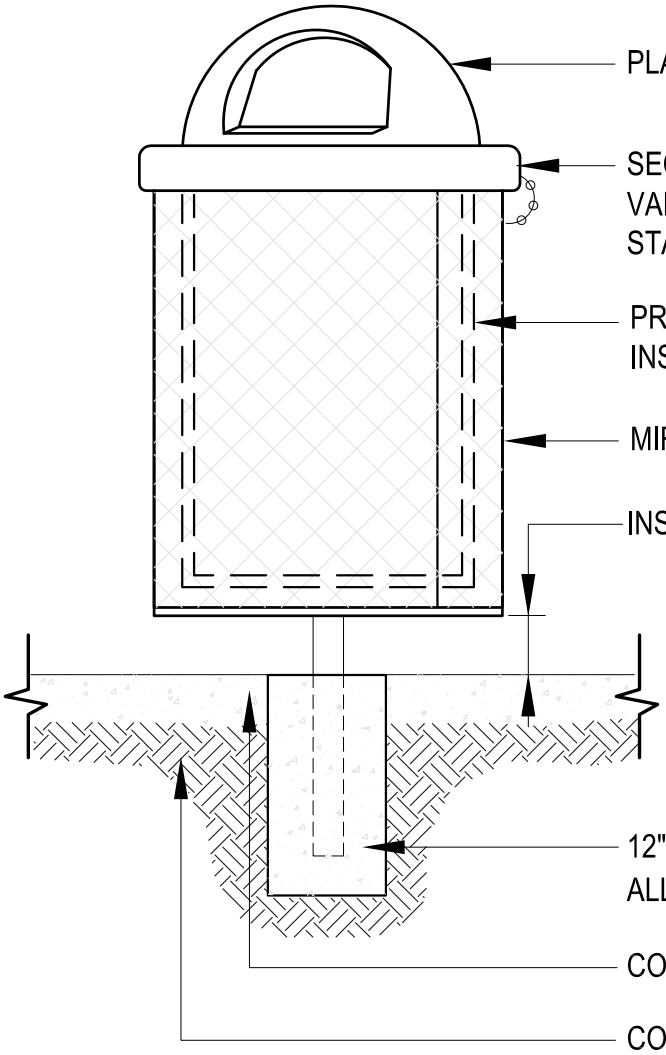
ALUMINUM BLEACHER

LC-26

2014

MIRA-THERM RECEPTACLE

MODEL #1129 (OR APPROVED EQUAL)



NOTES:

CONTACT MIRACLE RECREATION @ (800) 264-7225

ALL RECEPTACLES MUST HAVE A 4' X 4' MIN. CONCRETE PAD 4" THICK PER DETAIL LC-02

PROVIDE RECYCLE CONTAINER LID WHEN SPECIFIED

ALL TRASH RECEPTACLES SHALL BE FOOTING MOUNT

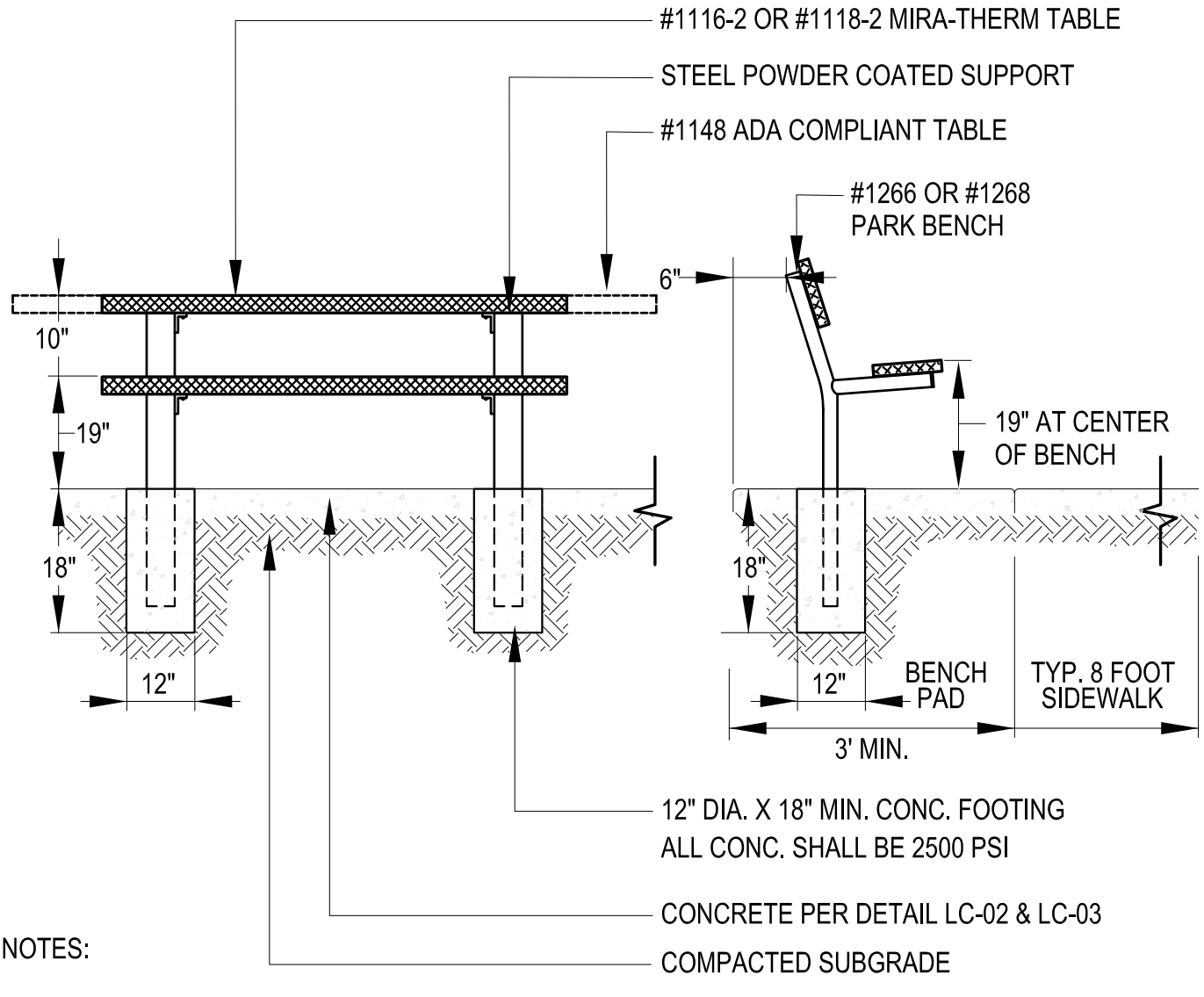
HESPERIA
Recreation & Park District

TRASH RECEPTACLE

LC-27

2014

MIRA-THERM BENCH/TABLE



NOTES:

CONTACT MIRACLE RECREATION @ (800) 264-7225

ALL TABLES AND BENCHES MUST HAVE A CONCRETE PAD 4" THICK PER CONCRETE DETAIL LC-02

ALL TABLES AND BENCHES SHALL BE FOOTING MOUNT

ALL BENCHES AND TABLES SHALL BE INSTALLED LEVEL AND PLUMB TO GRADE

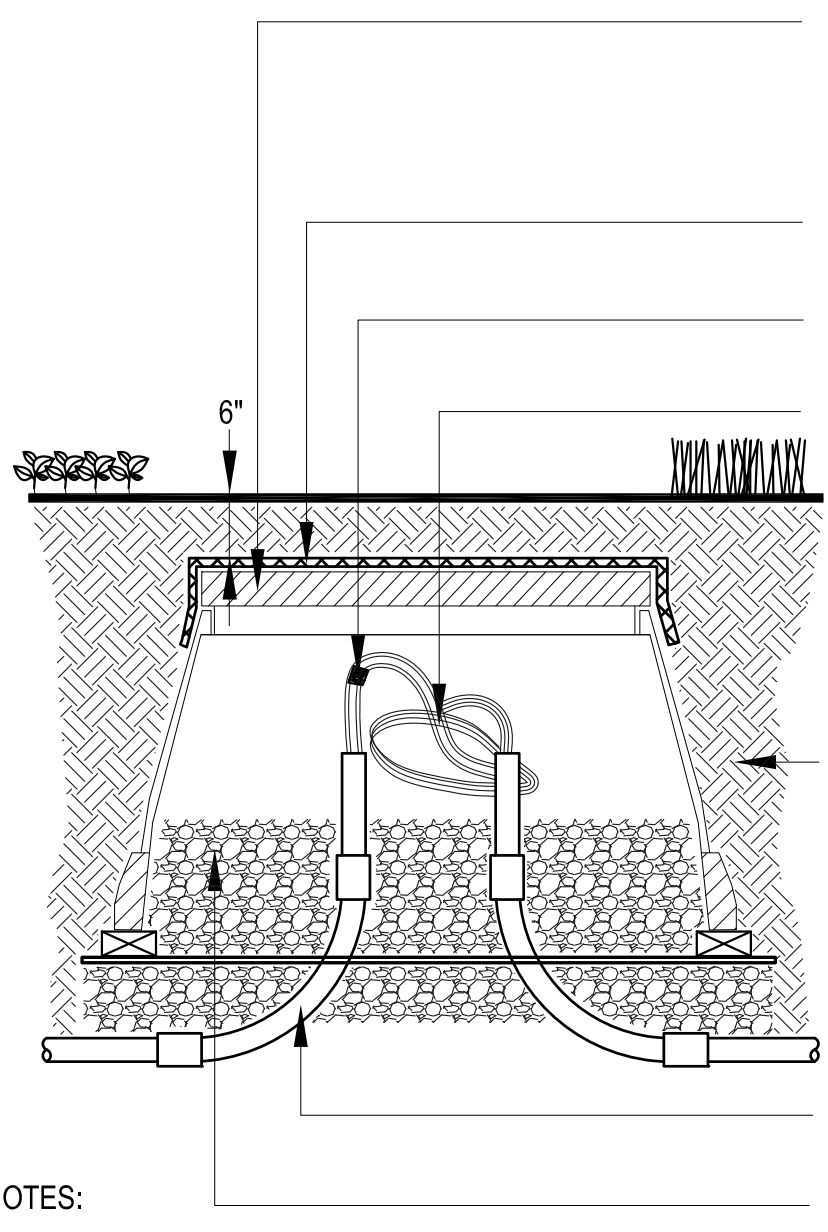
ALL TABLES SHALL HAVE A CONCRETE PAD WITH A MIN. OF 36" CLEAR PATH OF CONCRETE AROUND ALL SIDES

HESPERIA
Recreation & Park District

PARK BENCH AND TABLE

LC-28

2014



NOTES:

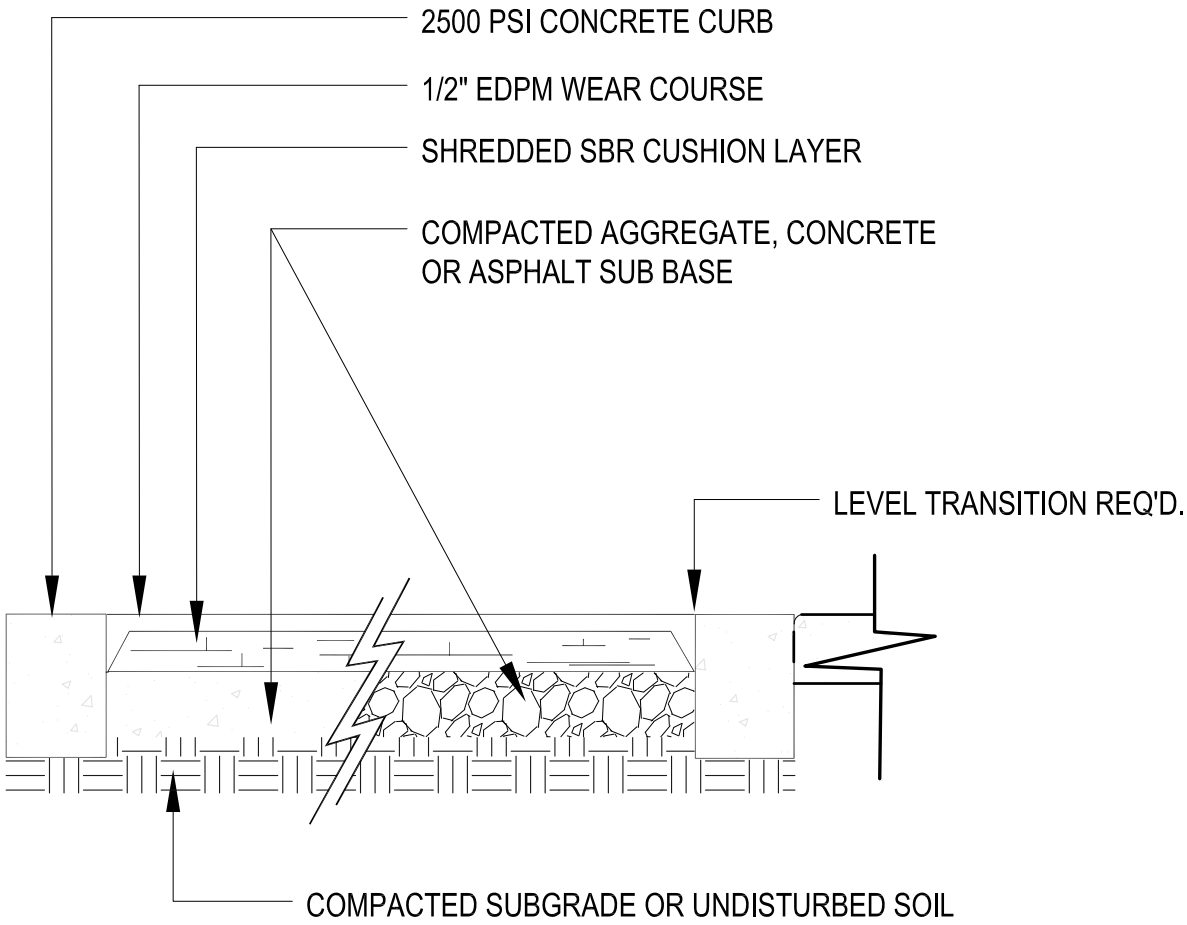
1. ALL WIRING MUST CONFORM TO LOCAL CODES AND SHALL BE 24" DEEP
2. PROVIDE 24" EXPANSION COILS AT EACH WIRE CONNECTION
3. PROVIDE 3" CLEARANCE BETWEEN WIRES & BOX
4. EPOXY ALL GAPS BETWEEN WIRE AND CONDUIT AT EXPOSED SWEEP ENDS
5. PROVIDE 4 EA. CONCRETE BRICKS UNDER VALVE BOX (TYP.)
6. ACCURATE AS-BUILTS WITH TWO REFERENCE POINTS SHALL BE APPROVED PRIOR TO BACKFILLING
7. CONTRACTOR SHALL COVER BOX AFTER WIRING IS APPROVED TO PREVENT WIRE THEFT
8. ALL CONDUITS SHALL HAVE METALLIC WARNING TAPE INSTALLED 6" ABOVE CONDUIT

HESPERIA
Recreation & Park District

ELECTRICAL PULL BOX

LC-29

2014



NOTE:

TOTAL THICKNESS OF TOT TURF SYSTEM IS BASED UPON MAXIMUM FALL HEIGHT OF PLAY EQUIPMENT

IF CONCRETE OR ASPHALT IS USED DRAINAGE MUST BE INCORPORATED

ALL RUBBER SURFACING COLORS AND LAYOUT MUST BE APPROVED BY THE DISTRICT PRIOR TO PLACEMENT

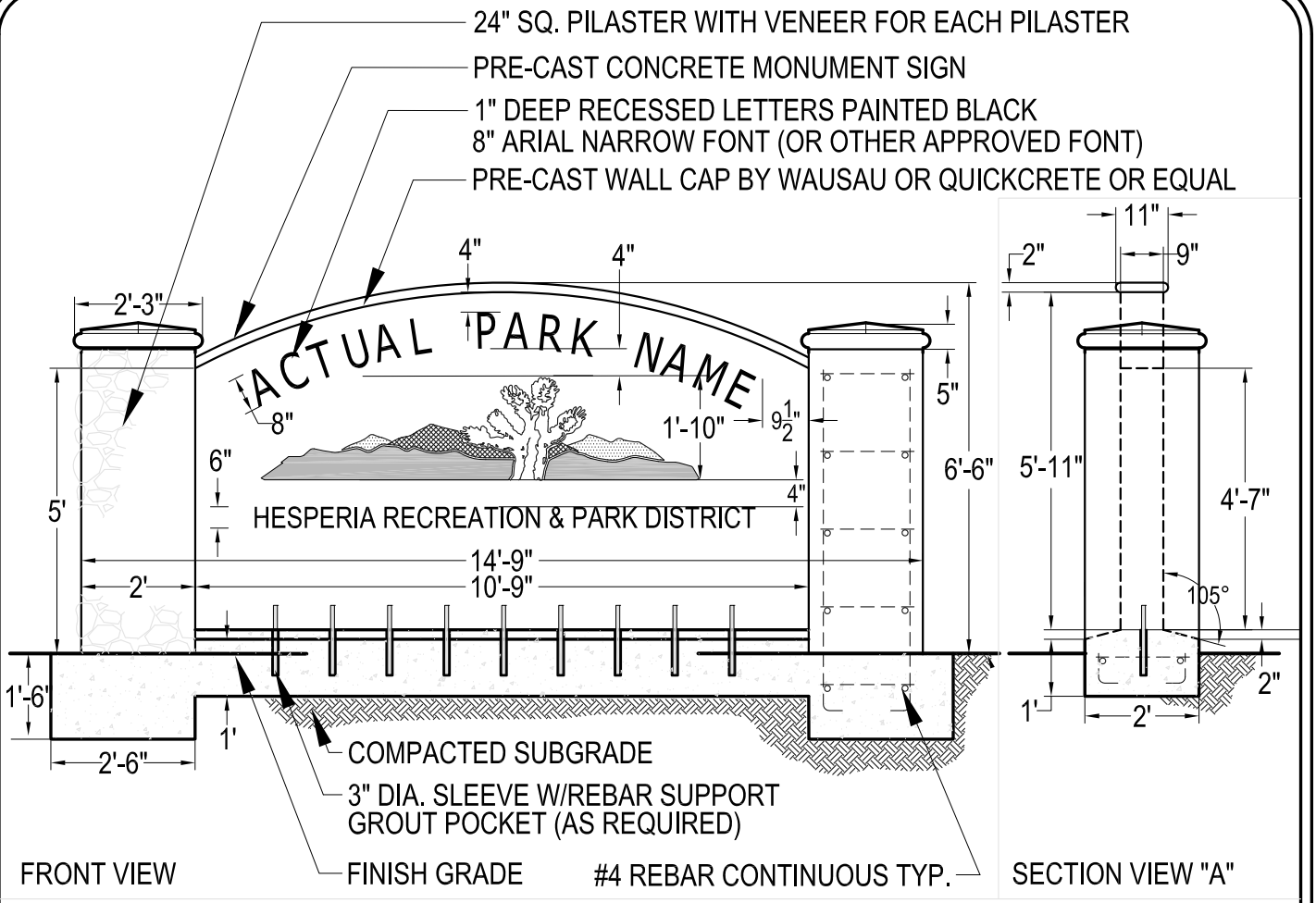
CONTRACTOR SHALL INSTALL RUBBER SURFACING PER MANUFACTURER'S SPECIFICATIONS

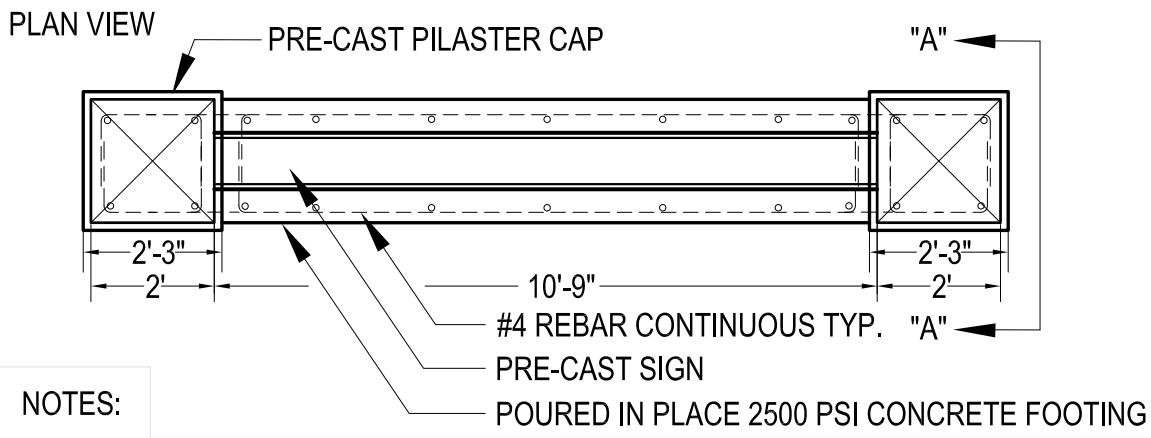
HESPERIA Recreation & Park District

RUBBER SURFACING

LC-30

2014





NOTES:

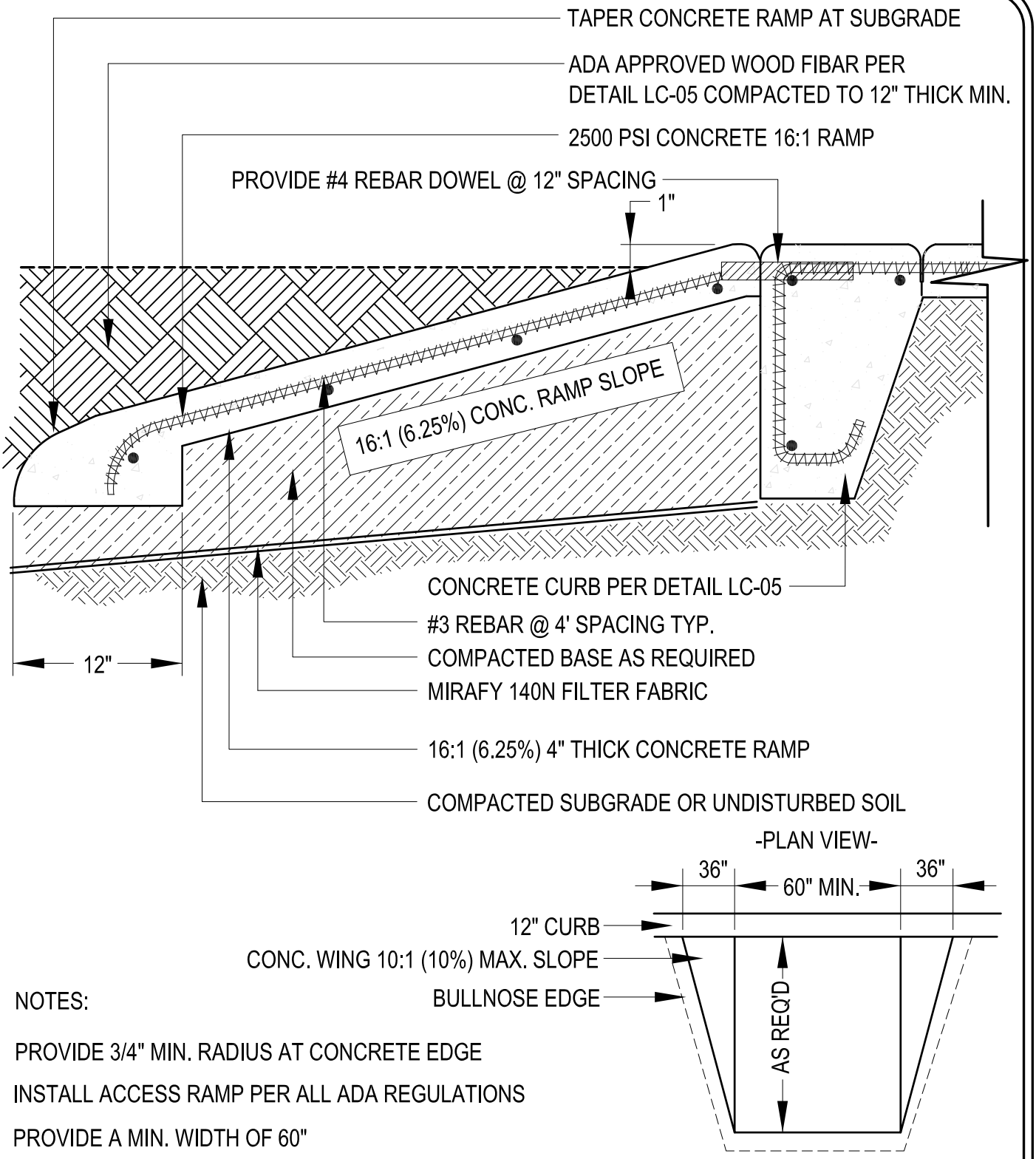
ACTUAL DIMENSIONS & NAME MUST BE DETERMINED PER PROJECT
CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL
CUSTOM FABRICATION AVAILABLE FROM: WAUSAU TILE, INC. OR QUICKCRETE PRODUCTS
PRE-CAST WALL AND PILASTER CAPS TO MATCH PRE-CAST SIGN

HESPERIA
Recreation & Park District

TYPICAL MONUMENT SIGN

LC-31

2014



NOTES:

PROVIDE 3/4" MIN. RADIUS AT CONCRETE EDGE

INSTALL ACCESS RAMP PER ALL ADA REGULATIONS

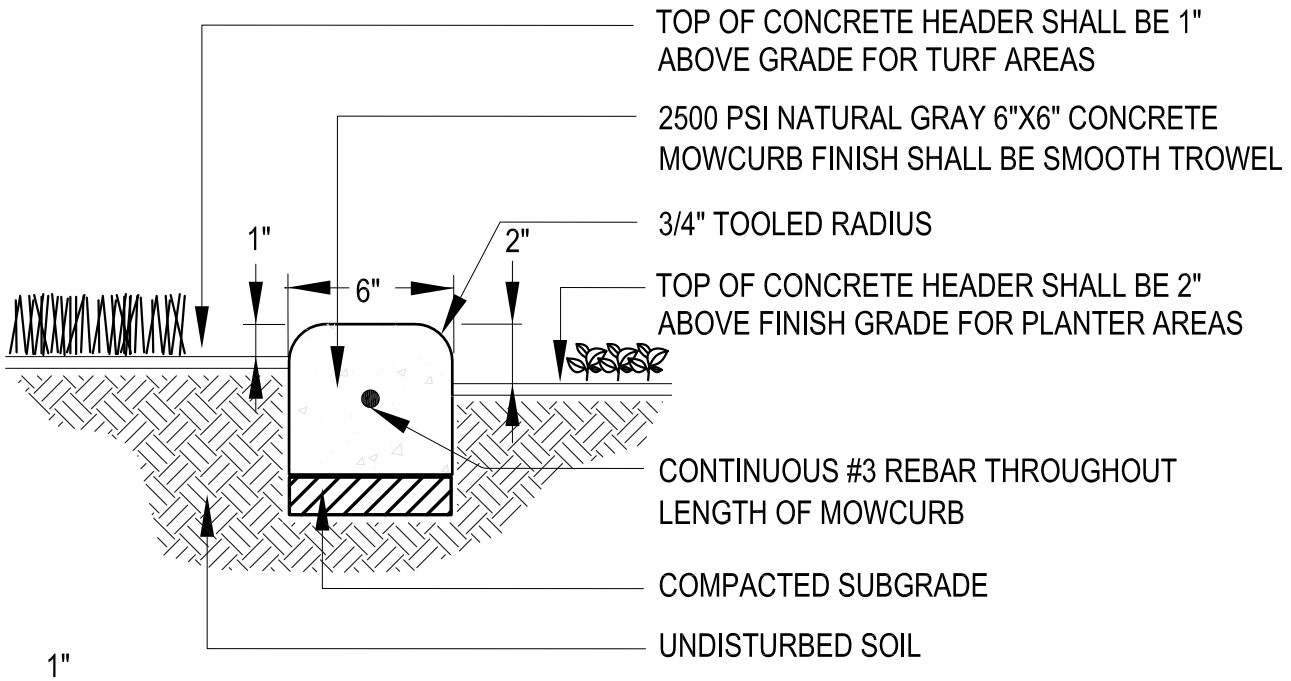
PROVIDE A MIN. WIDTH OF 60"

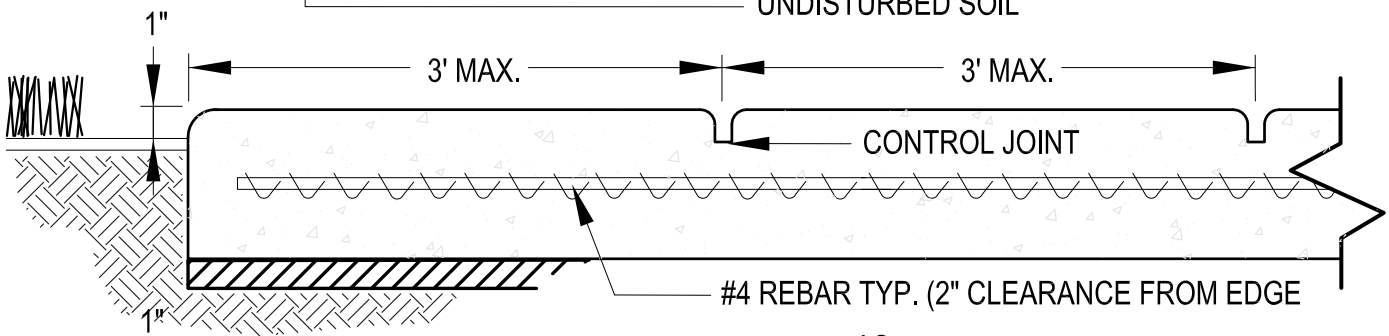
HESPERIA
Recreation & Park District

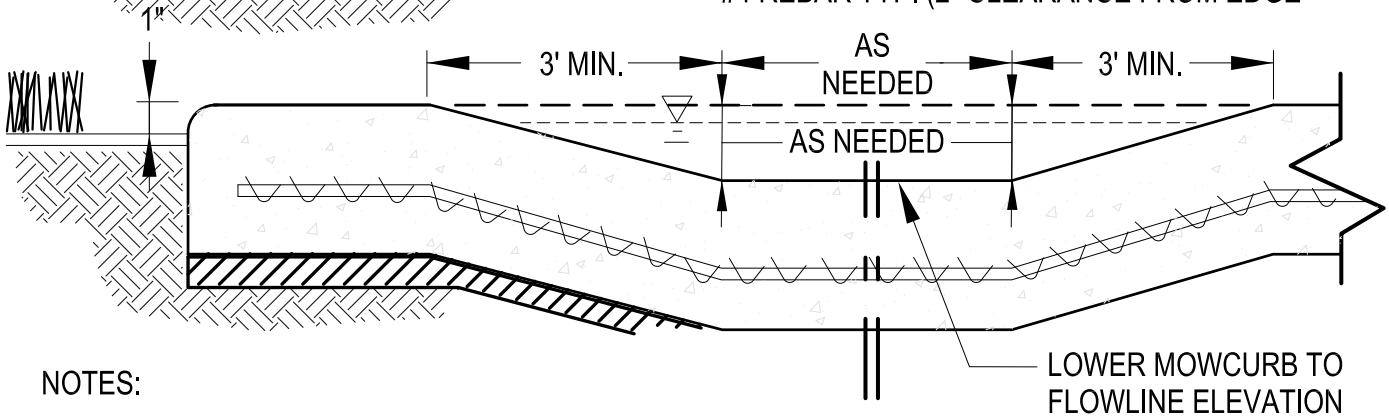
PLAY AREA RAMP

LC-32

2014







NOTES:

1. PROVIDE CONTROL JOINTS AT 3' MAX SPACING
2. ANY DAMAGED MOWCURB SHALL BE REPLACED NO PATCHES SHALL BE ALLOWED
3. TAPER MOWCURB AS DIRECTED WHEN FLOW LINES CROSS MOWCURB TYPICAL TAPER IS 6:1 OBTAIN APPROVAL FOR ELEVATION CHANGE OVER 6:1

HESPERIA Recreation & Park District

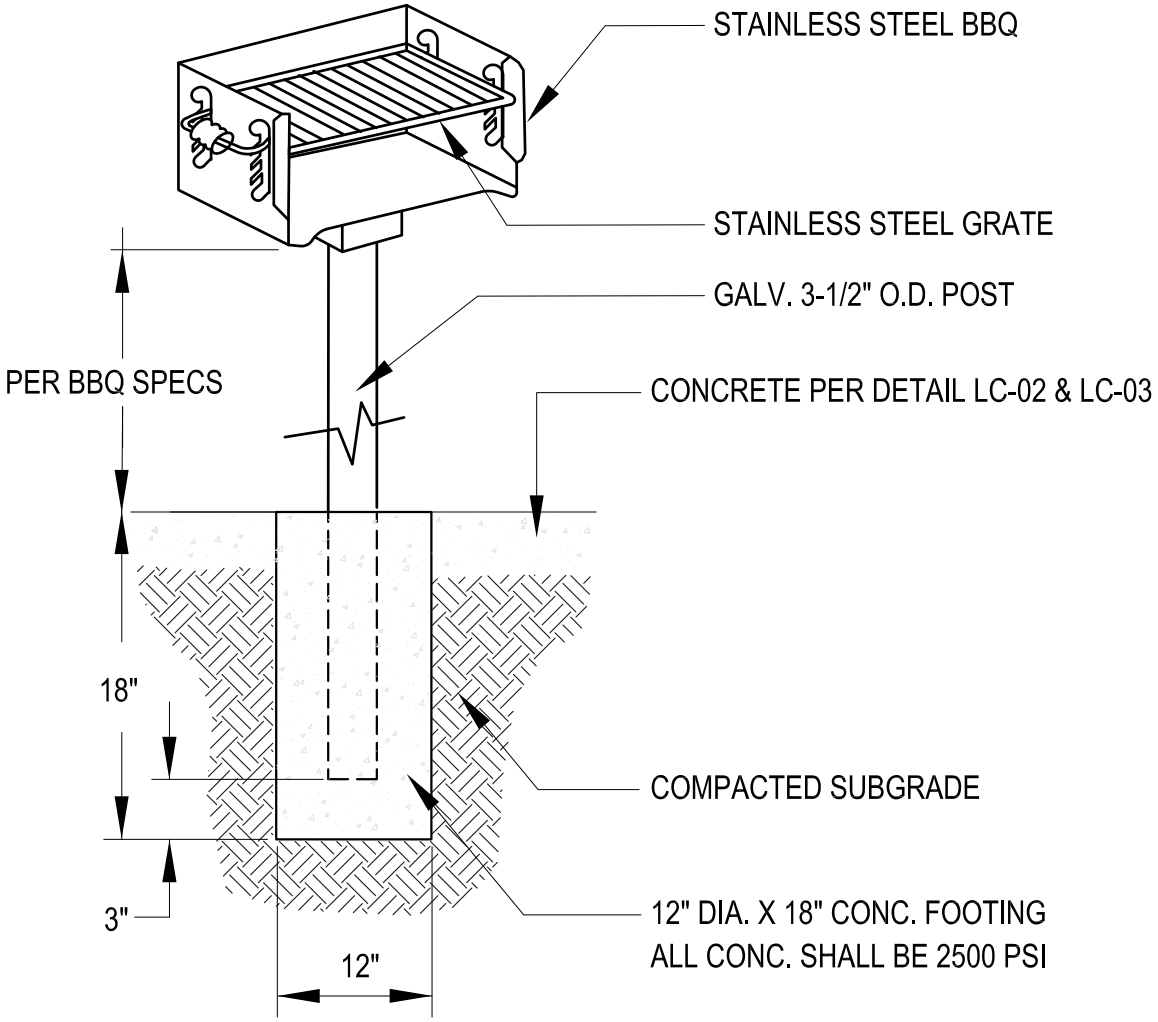
CONCRETE MOWCURB

LC-33

2014

PARK BBQ

MODEL #NSS20 B6S
MODEL #L-1500/S (GROUP)



NOTES:

CONTACT RJ THOMAS MFG. CO., INC. @ (800) 762-5002
BBQ MUST HAVE A 4'X4' CONCRETE PAD 4" THICK PER CONCRETE DETAIL LC-02
BBQ SHALL BE FOOTING MOUNT
BBQ SHALL BE INSTALLED LEVEL AND PLUMB TO GRADE

HESPERIA
Recreation & Park District

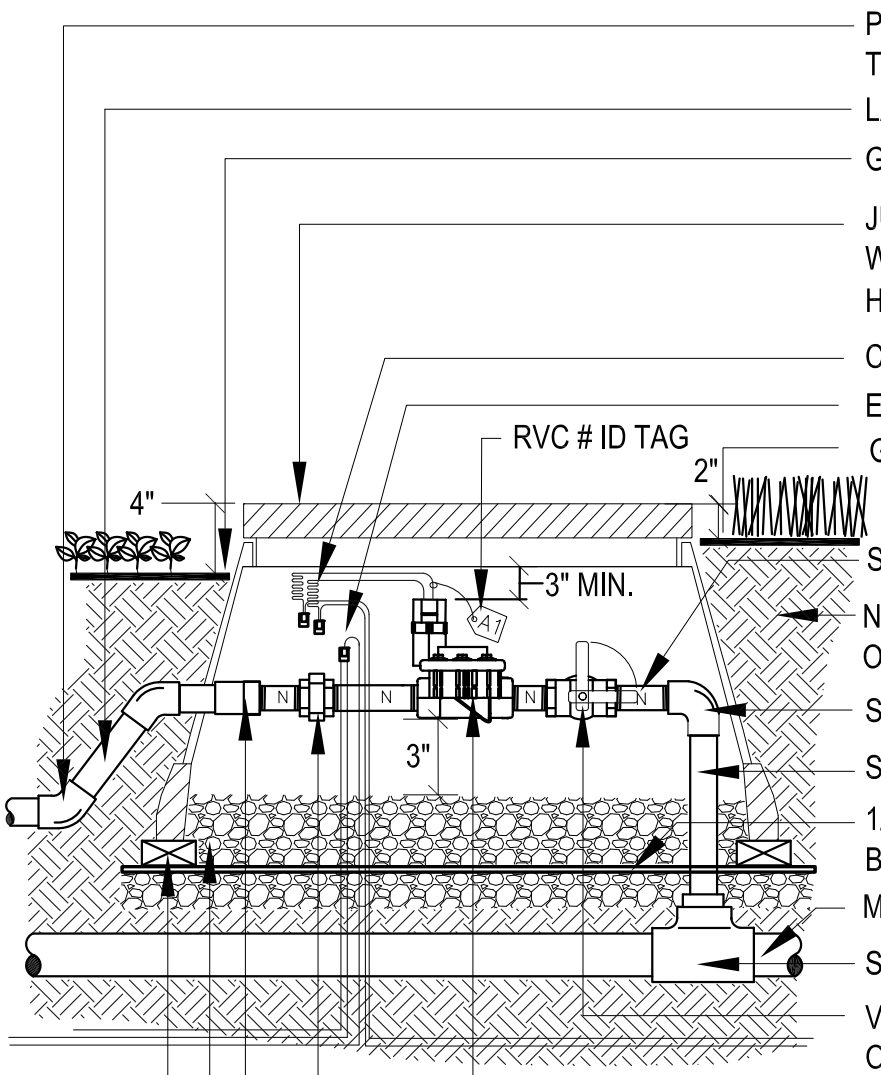
PARK BBQ

LC-34

2014

Standard Irrigation Details

Detail No.	Detail Description	Drawing Name
IR-01	Remote Control Valve	IR-001-2014.dwg
IR-02	Drip Remote Control Valve	IR-002-2014.dwg
IR-03	Quick Coupler Valve	IR-003-2014.dwg
IR-04	Brass Ball Valve 2” & Smaller	IR-004-2014.dwg
IR-05	Butterfly Valve 2-1/2” Through 3”	IR-005-2014.dwg
IR-06	Restrained Gate Valve 4” & Over	IR-006-2014.dwg
IR-07	Valve Manifold	IR-007-2014.dwg
IR-08	Valve Box Layout	IR-008-2014.dwg
IR-09	Water Meter 2” and Smaller	IR-009-2014.dwg
IR-10	Backflow Device 2” and Smaller	IR-010-2014.dwg
IR-11	Backflow Device 2-1/2” and Larger	IR-011-2014.dwg
IR-12a	Recycled Water Backflow/Filter	IR-012a-2014.dwg
IR-12b	Potable Water Backflow/Filter	IR-012b-2014.dwg
IR-12c	Auto Filter Without Fertigation	IR-012c-2014.dwg
IR-13	Auto Flush Valve at P.O.C.	IR-013-2014.dwg
IR-14	Booster Pump	IR-014-2014.dwg
IR-15	Master Valve	IR-015-2014.dwg
IR-16	Flow Meter	IR-016-2014.dwg
IR-17	EZ-Flow Fertigation System	IR-017-2014.dwg
IR-18	Bench Drain Crossing	IR-018-2014.dwg
IR-19	P.O.C. Layout Sequence	IR-019-2014.dwg
IR-20	Irrigation Pedestal Enclosure	IR-020-2014.dwg
IR-21	Irrigation Pedestal Controller	IR-021-2014.dwg
IR-22	Irrigation Indoor Controller	IR-022-2014.dwg
IR-23	Trenching and Sleeving	IR-023-2014.dwg
IR-24	Thrust Block 3” Main & Smaller	IR-024-2014.dwg
IR-25	Mainline Restraints 4” & Larger	IR-025-2014.dwg
IR-26	Typical Irrigation Mainline Street Crossing	IR-026-2014.dwg
IR-27	Pull Box	IR-027-2014.dwg
IR-28	Wire Connectors	IR-028-2014.dwg
IR-29	Recycled Water Sign	IR-029-2014.dwg
IR-30	Point to Point Lateral Layout	IR-030-2014.dwg
IR-31	Emitter Assembly Section View	IR-031-2014.dwg
IR-32	Shrub Emitter Assembly Layout	IR-032-2014.dwg
IR-33	Tree Emitter Assembly Layout	IR-033-2014.dwg
IR-34	Flush Valve Assembly	IR-034-2014.dwg
IR-35	Check Valve & Pressure Reg.	IR-035-2014.dwg
IR-36	Tree Root Watering System	IR-036-2014.dwg
IR-37	Shrub Spray on Grade	IR-037-2014.dwg
IR-38	Shrub Spray on Riser	IR-038-2014.dwg
IR-39	Pop-up Spray Head	IR-039-2014.dwg
IR-40	Shrub Rotor on Grade	IR-040-2014.dwg
IR-41	Pop-up Rotor Head	IR-041-2014.dwg
IR-42	Shrub Rotor on Riser	IR-042-2014.dwg



NOTES:

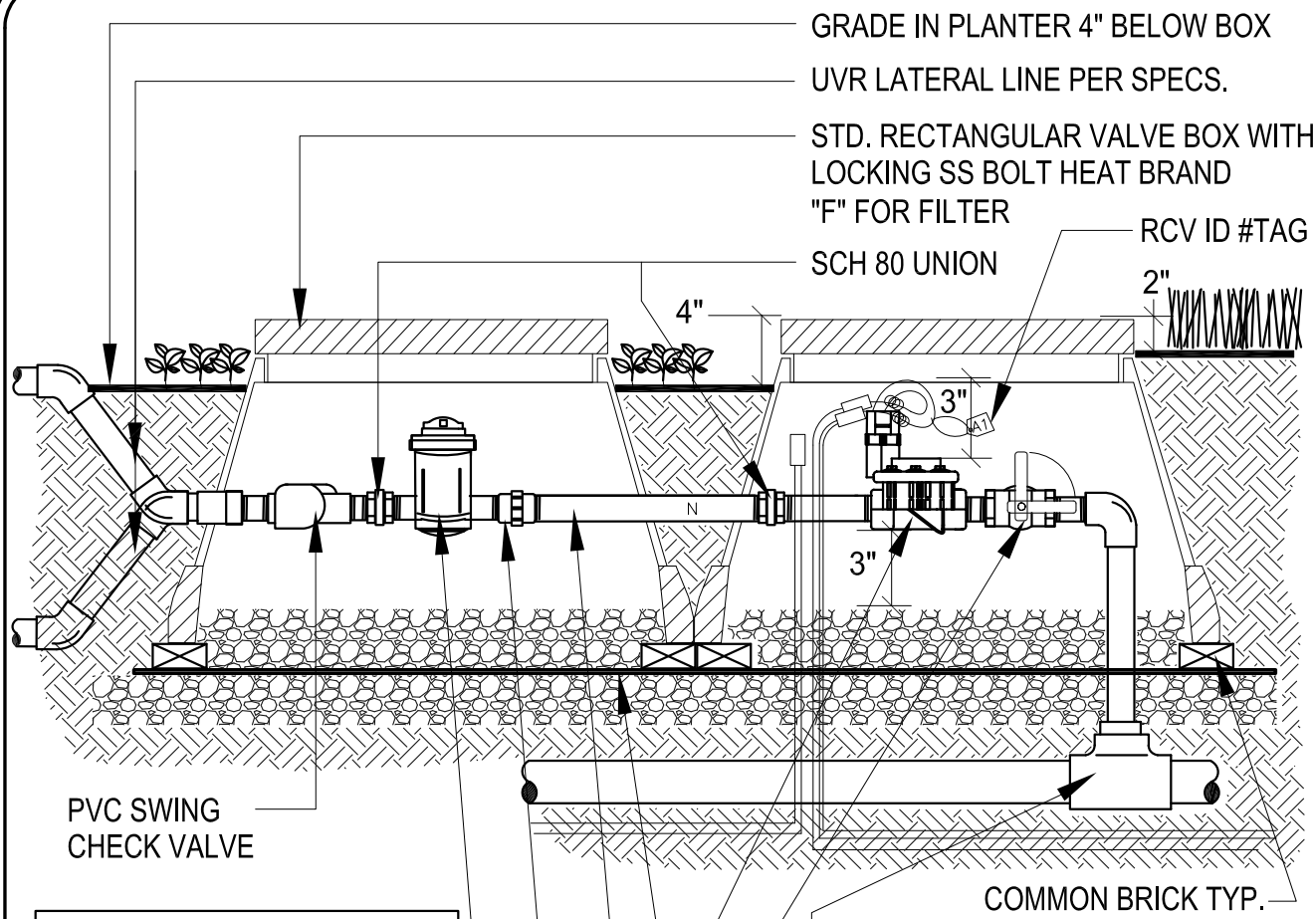
1. ALL WIRING SHALL BE APPROVED BY THE DISTRICT PRIOR TO BACKFILL
2. TAPE & BUNDLE WIRES @ 10' INTERVALS
3. PROVIDE 24" LONG EXPANSION COILS AT EACH WIRE CONNECTION AND TURN IN DIRECTION
4. PROVIDE 3" CLEARANCE BETWEEN VALVE & BOX AT ALL SIDES
5. PROVIDE 4 EA. COMMON BRICKS UNDER VALVE BOX (TYP.)
6. USE IRON DUCTILE FITTINGS FOR 4" & LARGER MAINLINE

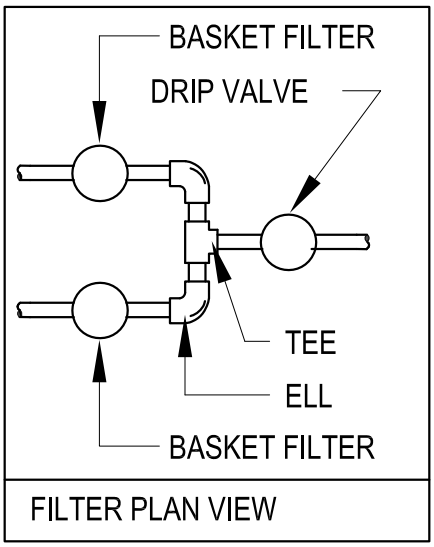
HESPERIA
Recreation & Park District

REMOTE CONTROL VALVE

IR-01

2014





FILTER PLAN VIEW

NOTES:

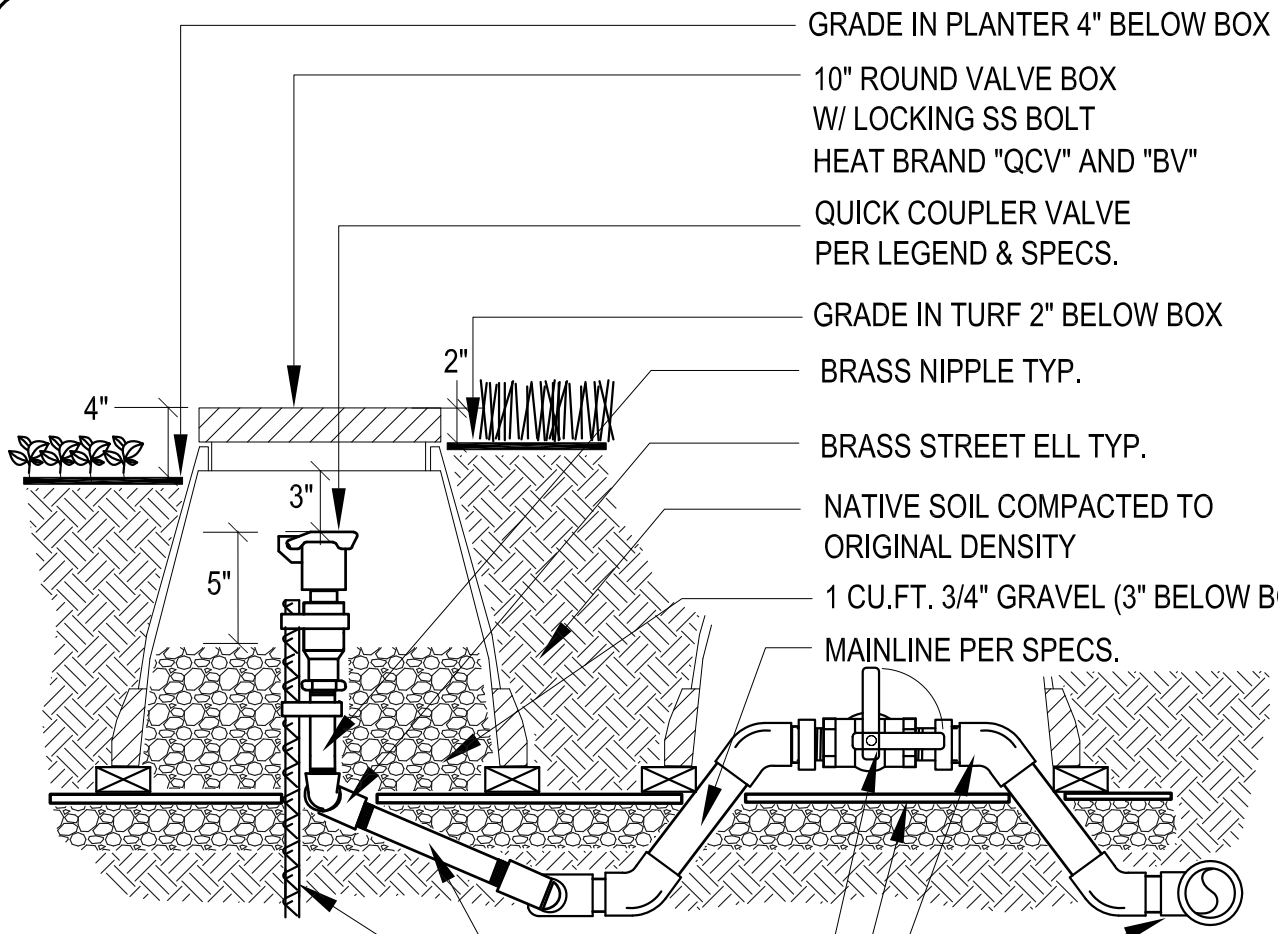
REFER TO DETAIL IR-01 FOR ALL RCV REQUIREMENTS

HESPERIA Recreation & Park District

DRIP REMOTE CONTROL VALVE

IR-02

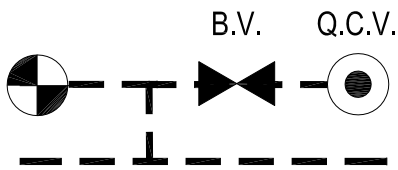
2014



NOTES:

1. ALL THREADED FITTINGS MUST HAVE 3/4" TEFLON TAPE
2. PROVIDE QUICK COUPLER KEY PER SPECS.
3. USE TWO #4X36" REBAR FOR QCV FOR SPORTS FIELDS
4. PROVIDE 3" CLEARANCE BETWEEN VALVE & BOX
5. PROVIDE 2 EA. CONCRETE BRICKS UNDER VALVE BOX.
6. QUICK COUPLERS VALVES MUST BE 150' APART TYP.

PLAN VIEW

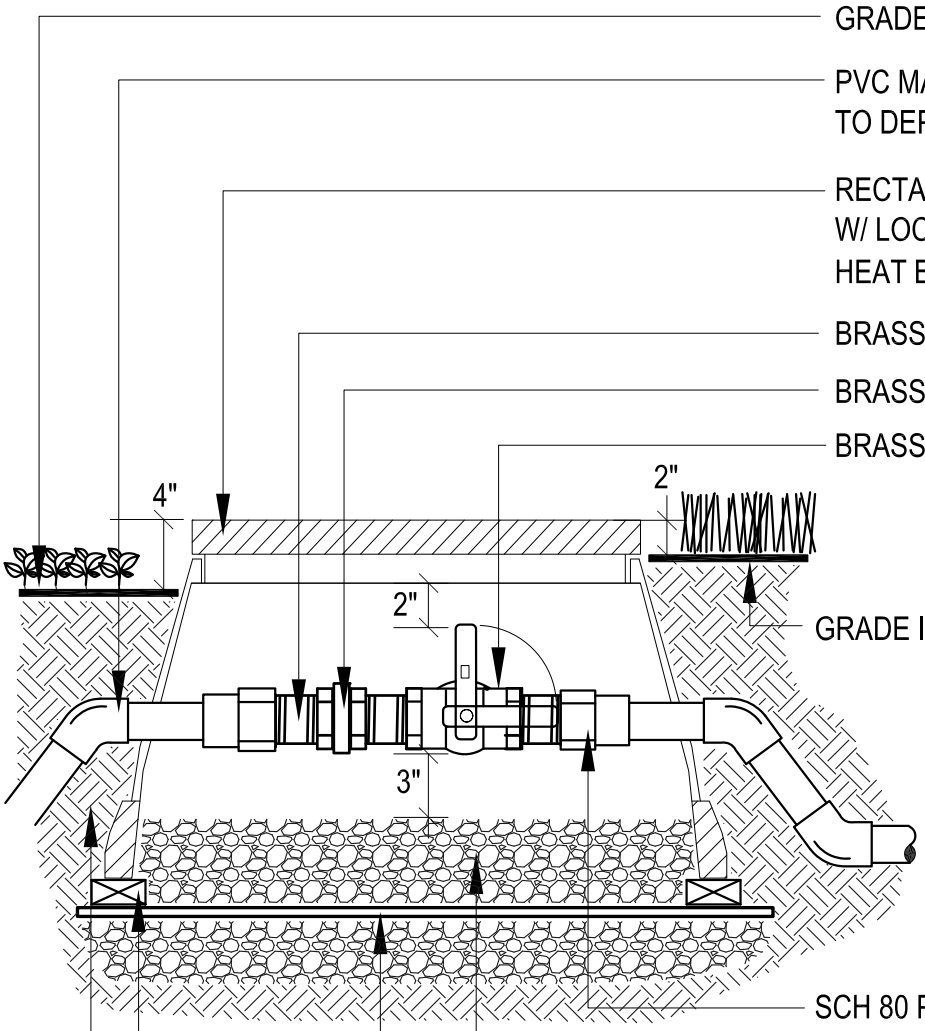


HESPERIA
Recreation & Park District

QUICK COUPLER VALVE

IR-03

2014



GRADE IN PLANTER 4" BELOW BOX

PVC MAINLINE USE SCH 80 45 ELL
TO DEPTH PER SPECS.

RECTANGULAR VALVE BOX
W/ LOCKING SS BOLT
HEAT BRAND "BV"

BRASS NIPPLE (3X TYP.)

BRASS UNION

BRASS BALL VALVE PER SPECS

GRADE IN TURF 2" BELOW BOX

SCH 80 PVC FEMALE ADAPTER

3 CU.FT. 3/4" GRAVEL
PROVIDE 3" CLEARANCE
BETWEEN VALVE & GRAVEL

1/2" GALV. 19 GA. WIRE MESH BELOW BOX
& OVER PIPE OPENING

COMMON BRICK

NATIVE SOIL COMPACTED TO
ORIGINAL DENSITY

NOTES:

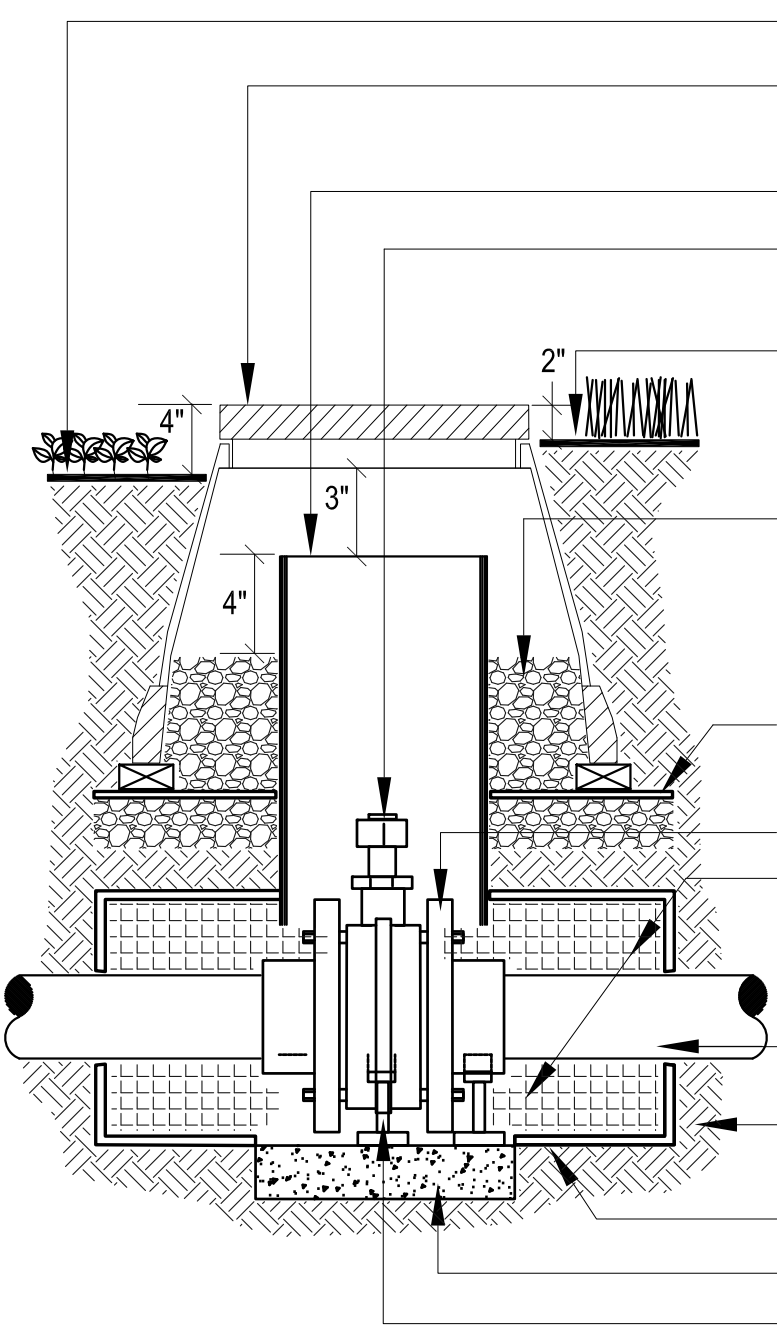
1. ALL THREADED FITTINGS MUST HAVE 3/4" TEFLON TAPE
2. PROVIDE 2" CLEARANCE BETWEEN VALVE & BOX
3. PROVIDE 4 EA. CONCRETE BRICKS UNDER VALVE BOX (TYP.)
4. PROVIDE 4 EA. SCH 80 45 DEGREE ELLS TO ACHIEVE BALL VALVE HEIGHT PER DETAIL

HESPERIA
Recreation & Park District

BRASS BALL VALVE
2" & SMALLER

IR-04

2014



NOTES:

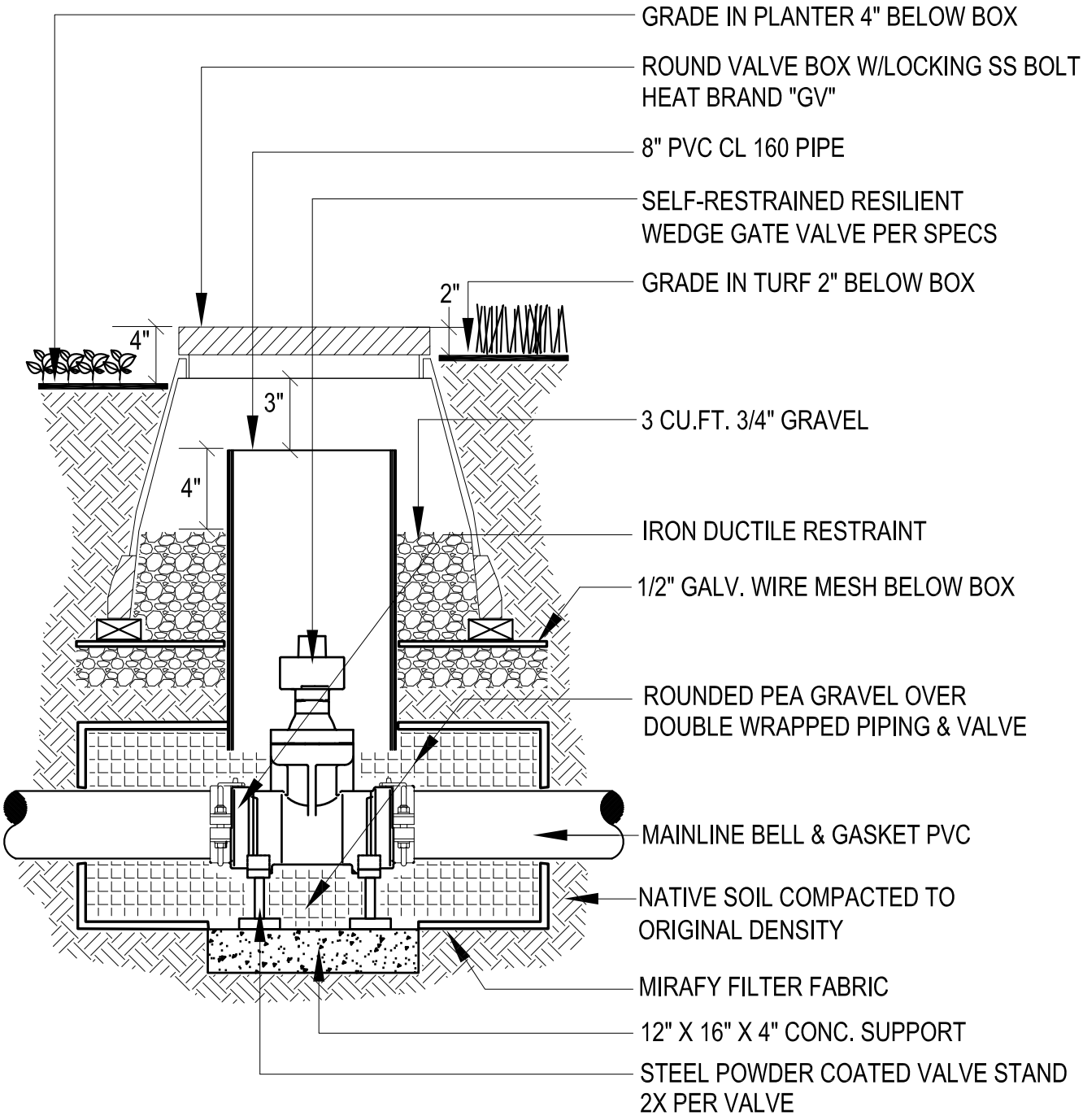
1. CONTRACTOR SHALL PROVIDE 5 FOOT TEE WRENCH WITH 2" SQUARE NUT FOR BUTTERFLY VALVE OPERATION
2. PROVIDE 3 EA. CONCRETE BRICKS UNDER VALVE BOX (TYP.)

HESPERIA
Recreation & Park District

BUTTERFLY VALVE 2-1/2" THROUGH 3"

IR-05

2014



NOTES:

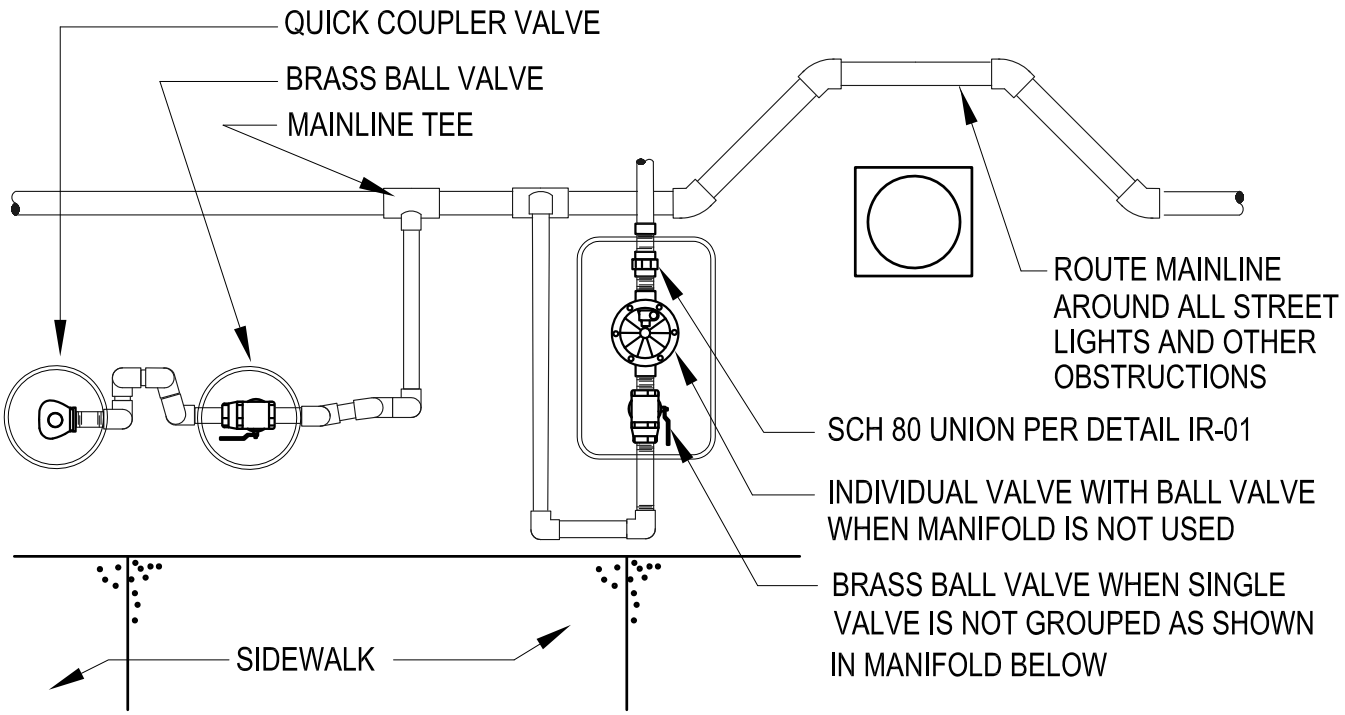
1. CONTRACTOR SHALL PROVIDE 5 FOOT TEE WRENCH WITH 2" SQUARE NUT FOR BUTTERFLY VALVE OPERATION
2. PROVIDE 3 EA. CONCRETE BRICKS UNDER VALVE BOX (TYP.)

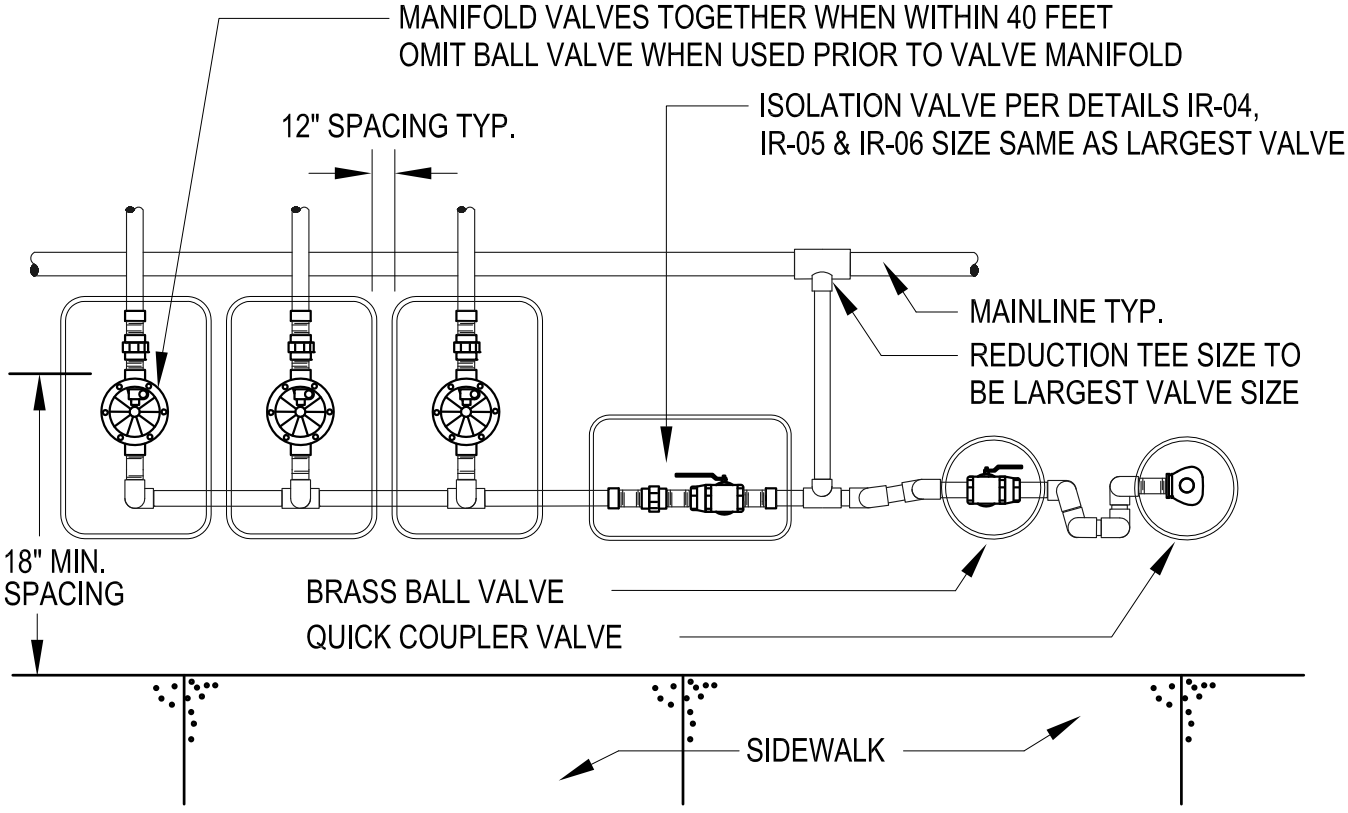
HESPERIA
Recreation & Park District

RESTRAINED GATE VALVE 4" & OVER

IR-06

2014



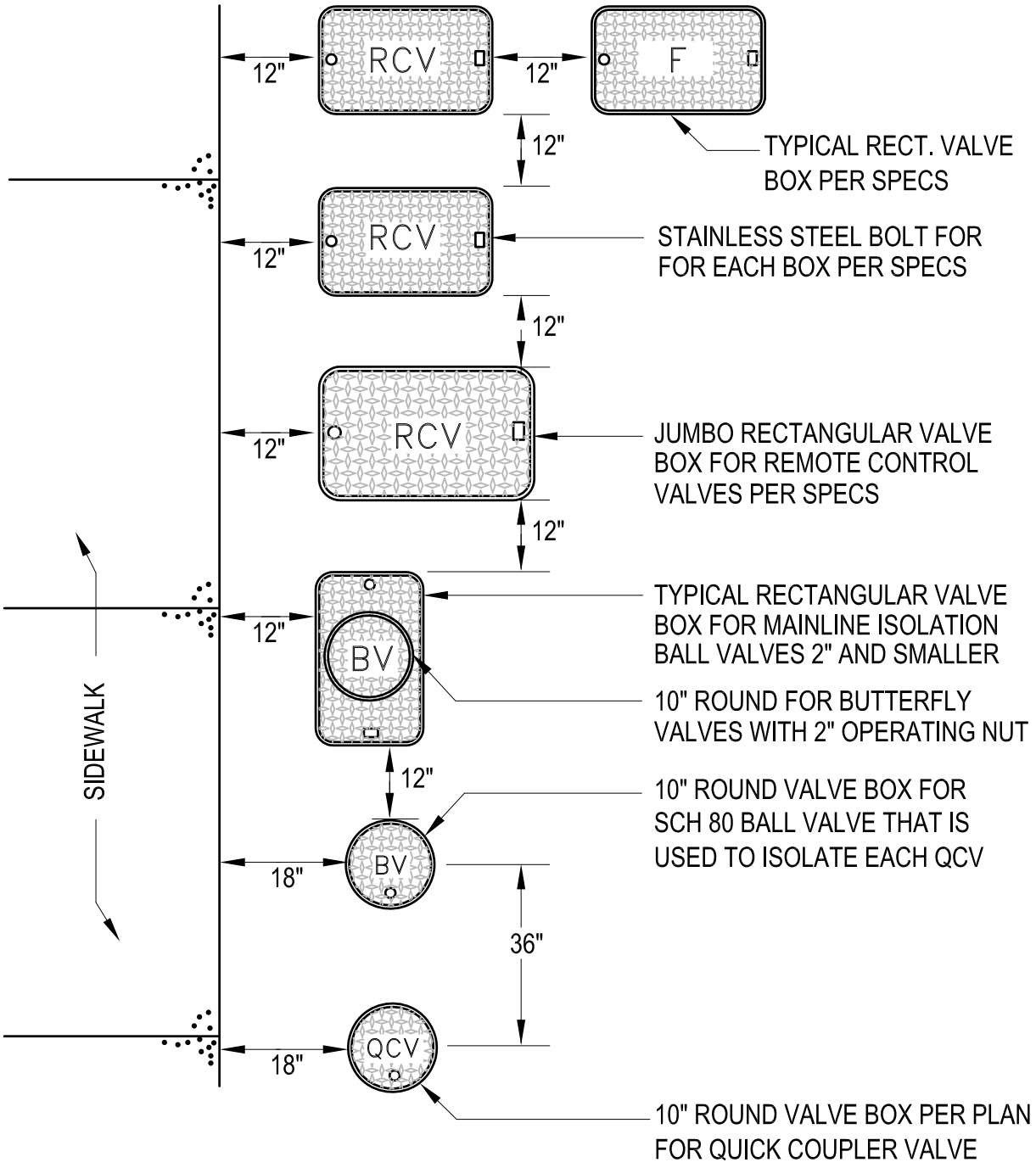


HESPERIA
Recreation & Park District

VALVE MANIFOLD

IR-07

2014



NOTES:

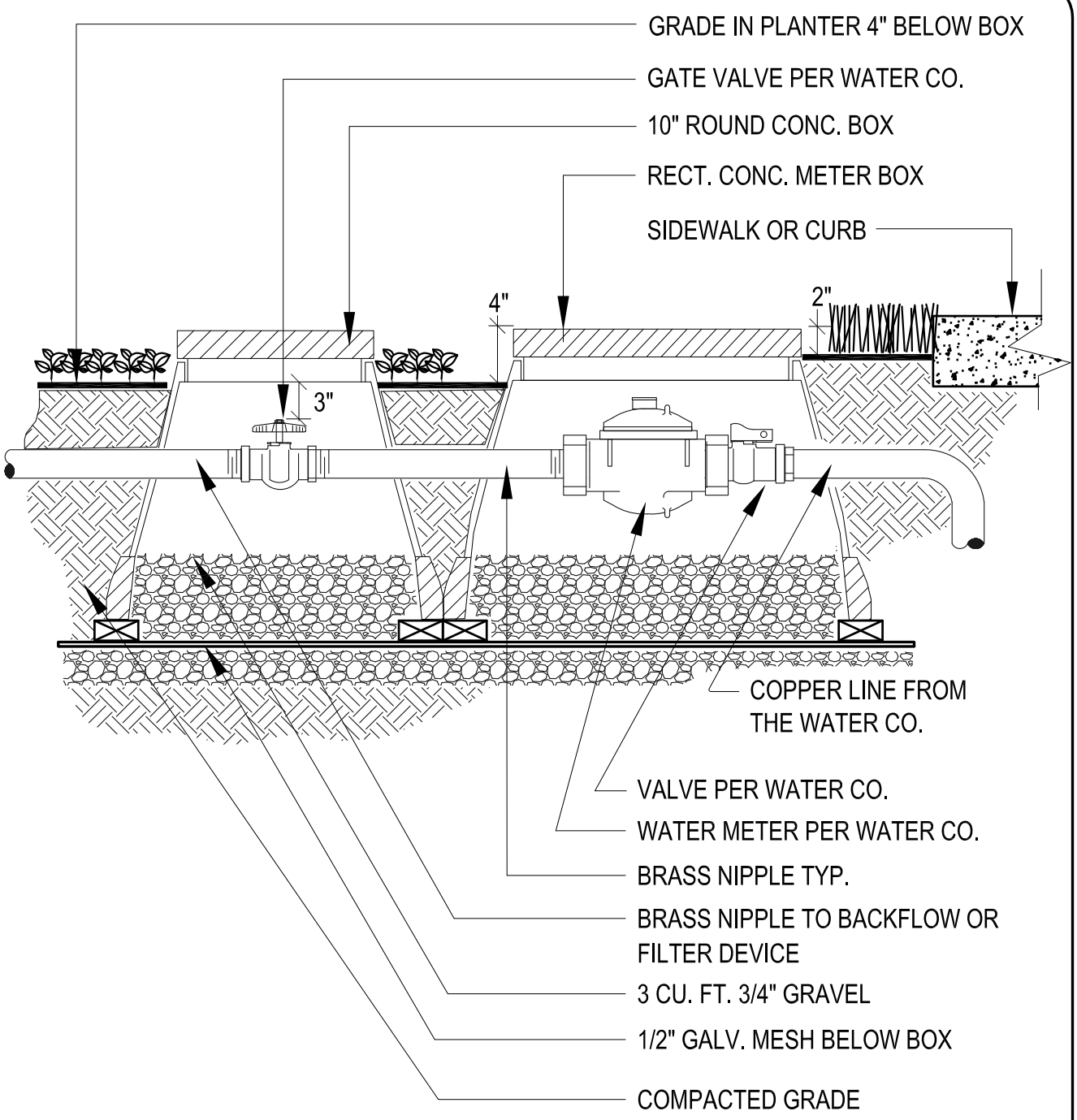
1. INSTALL VALVE BOXES IN PLANTER AREAS WHENEVER POSSIBLE
2. ALL VALVE BOXES MUST BE PERPENDICULAR TO SIDEWALKS
3. ALL VALVES MUST BE CENTERED AND INSTALLED PLUMB INSIDE VALVE BOX

HESPERIA
Recreation & Park District

VALVE BOX LAYOUT

IR-08

2014



NOTES:

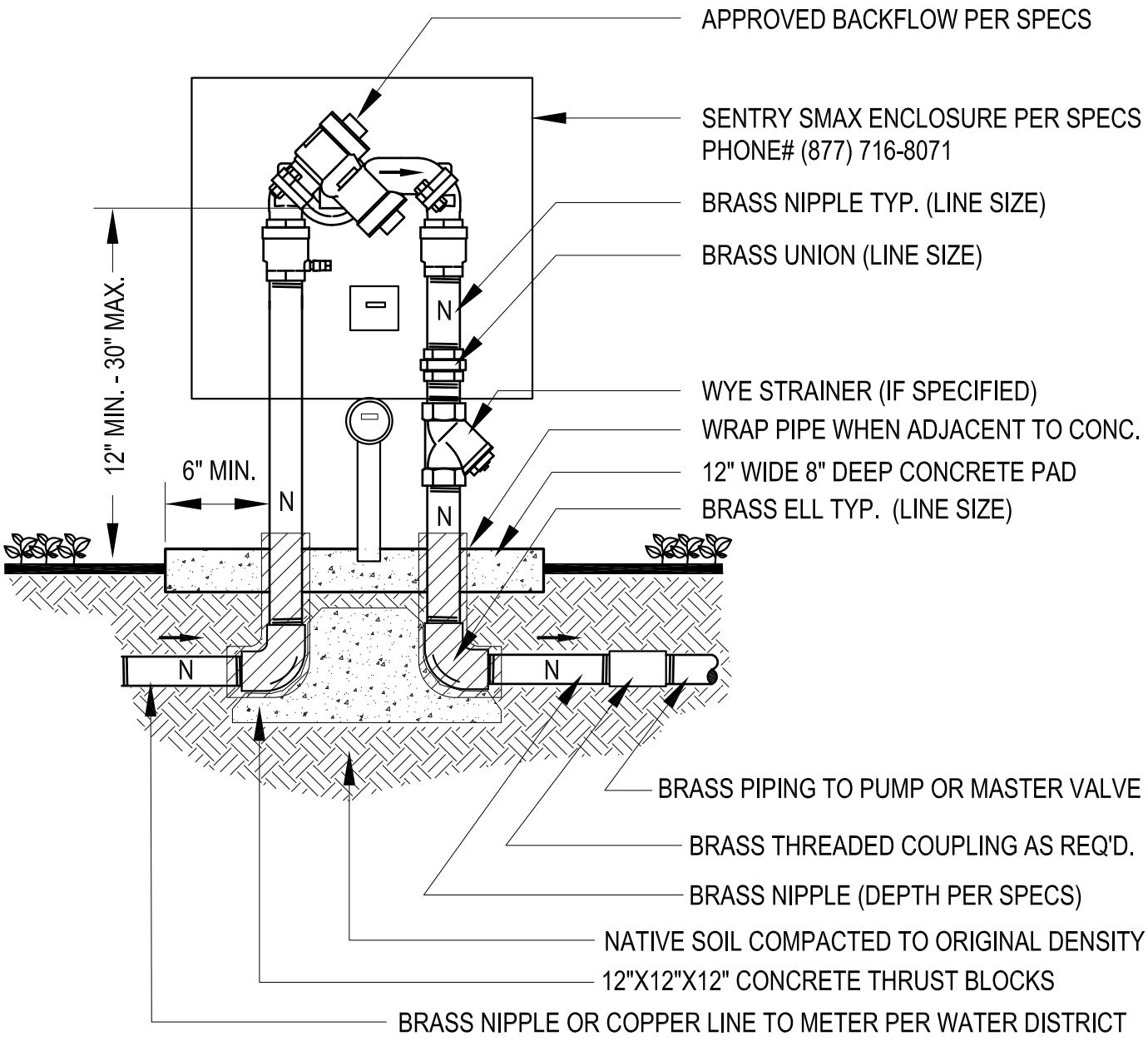
ALL PIPING AND ASSEMBLIES FOR WATER METER SHALL BE PER CITY OF HESPERIA DRAWINGS W-8 THROUGH W-12 AND CITY OF HESPERIA WATER SPECIFICATIONS

HESPERIA Recreation & Park District

WATER METER 2" AND SMALLER

IR-09

2014



NOTES:

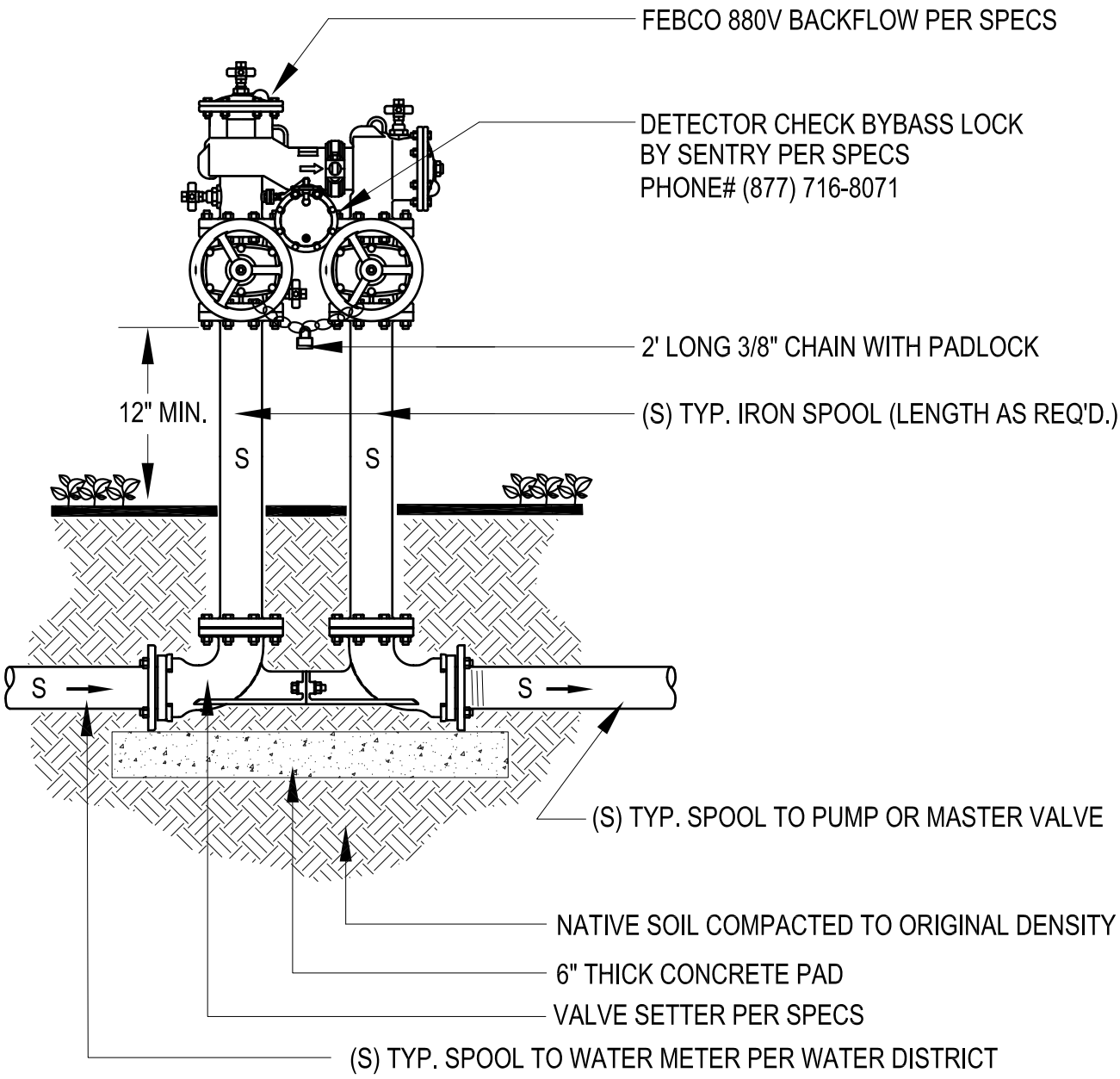
1. INSTALLATION MUST CONFORM TO LOCAL CODES
2. CONTRACTOR MUST PROVIDE BACKFLOW CERTIFICATION
3. LOCATE BACKFLOW IN PLANTER WHERE POSSIBLE
4. WRAP ALL PIPING WHERE CONCRETE OCCURS INCLUDING THRUST BLOCKS
5. CONCRETE PAD TO BE 4" ABOVE FINISH GRADE
6. CONTRACTOR MUST PROVIDE THERMAL INSULATION COVER

HESPERIA
Recreation & Park District

BACKFLOW DEVICE 2" AND SMALLER

IR-10

2014



NOTES:

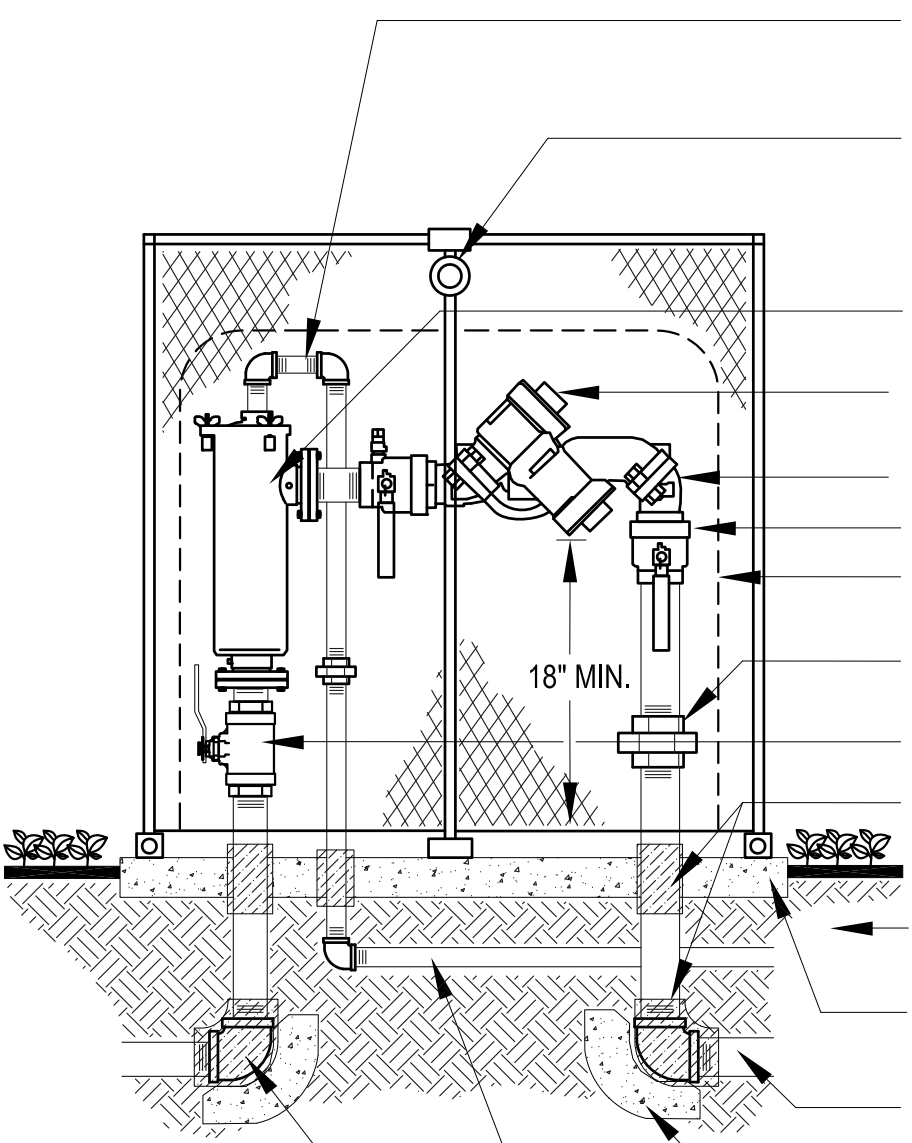
1. INSTALLATION MUST CONFORM TO LOCAL CODES
2. CONTRACTOR MUST PROVIDE BACKFLOW CERTIFICATION
3. LOCATE BACKFLOW IN PLANTER WHERE POSSIBLE
4. WRAP ALL PIPING WHERE CONCRETE OCCURS
5. WRAP ALL IRON PIPE IN CONTACT WITH SITE SOIL
6. CONTRACTOR MUST PROVIDE THERMAL INSULATION COVER

HESPERIA
Recreation & Park District

BACKFLOW DEVICE 2-1/2" & LARGER

IR-11

2014



NOTES:

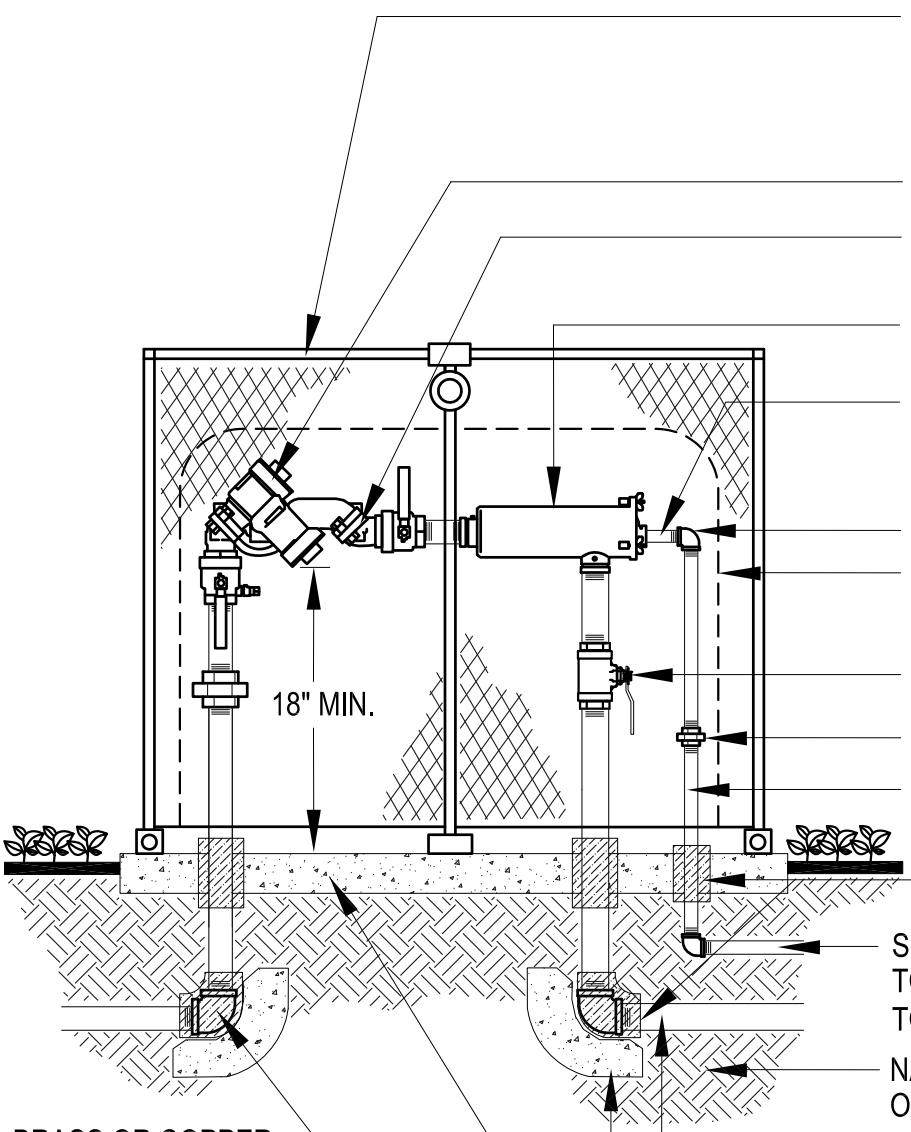
1. INSTALLATION MUST CONFORM TO LOCAL CODES AND PROVIDE BACKFLOW CERTIFICATION
2. OBTAIN WATER CO. APPROVAL PRIOR TO INSTALLATION
3. LOCATE BACKFLOW/FILTER IN PLANTER WHERE POSSIBLE
4. WRAP ALL PIPING WHERE CONCRETE OCCURS
5. ALL EXPOSED PIPING FROM FILTER FLUSH LINE SHALL BE BRASS
6. CONTRACTOR MUST PROVIDE BACKFLOW CERTIFICATION PRIOR TO ACCEPTANCE
7. ALL BALL VALVES AND UNIONS MUST BE 4" MIN. ABOVE CONCRETE SLAB

HESPERIA
Recreation & Park District

RECYCLED WATER BACKFLOW/FILTER

IR-12A

2014



COMBINATION ENCLOSURE BY D&M MANUFACTURING W/PADLOCK MODEL # SMCYF-XX OR APPROVED EQUAL PER LEGEND & SPECS.

APPROVED BACKFLOW PER SPECS

ROTATE FLANGE FOR HORIZONTAL PIPING

YARDNEY FILTER PER SPECS SAME SIZE AS METER TYP.

AUTO FLUSH DISCHARGE LINE PER DETAIL IR-13 EXPOSED PIPING MUST BE BRASS TYP.

BRASS ELL TYP.

POLAR BARRIER COVER SIZE PER FILTER & BACKFLOW SIZE

BRASS BALL VALVE

BRASS UNION TYP. (LINE SIZE)

BRASS NIPPLE TYP.

WRAP PIPE AGAINST CONC. & THRUST BLOCKS

SCH 80 PVC PIPING BELOW GRADE TO ELECTRIC FLUSH VALVE REFER TO DETAIL IR-13 FOR VALVE DETAIL

NATIVE SOIL COMPACTED TO ORIGINAL DENSITY

BRASS OR COPPER PIPING TO METER

BRASS PIPING TO MASTER VALVE

12"X12"X12" CONCRETE THRUST BLOCKS

6" THICK CONCRETE PAD SET 2" ABOVE GRADE

NOTES:

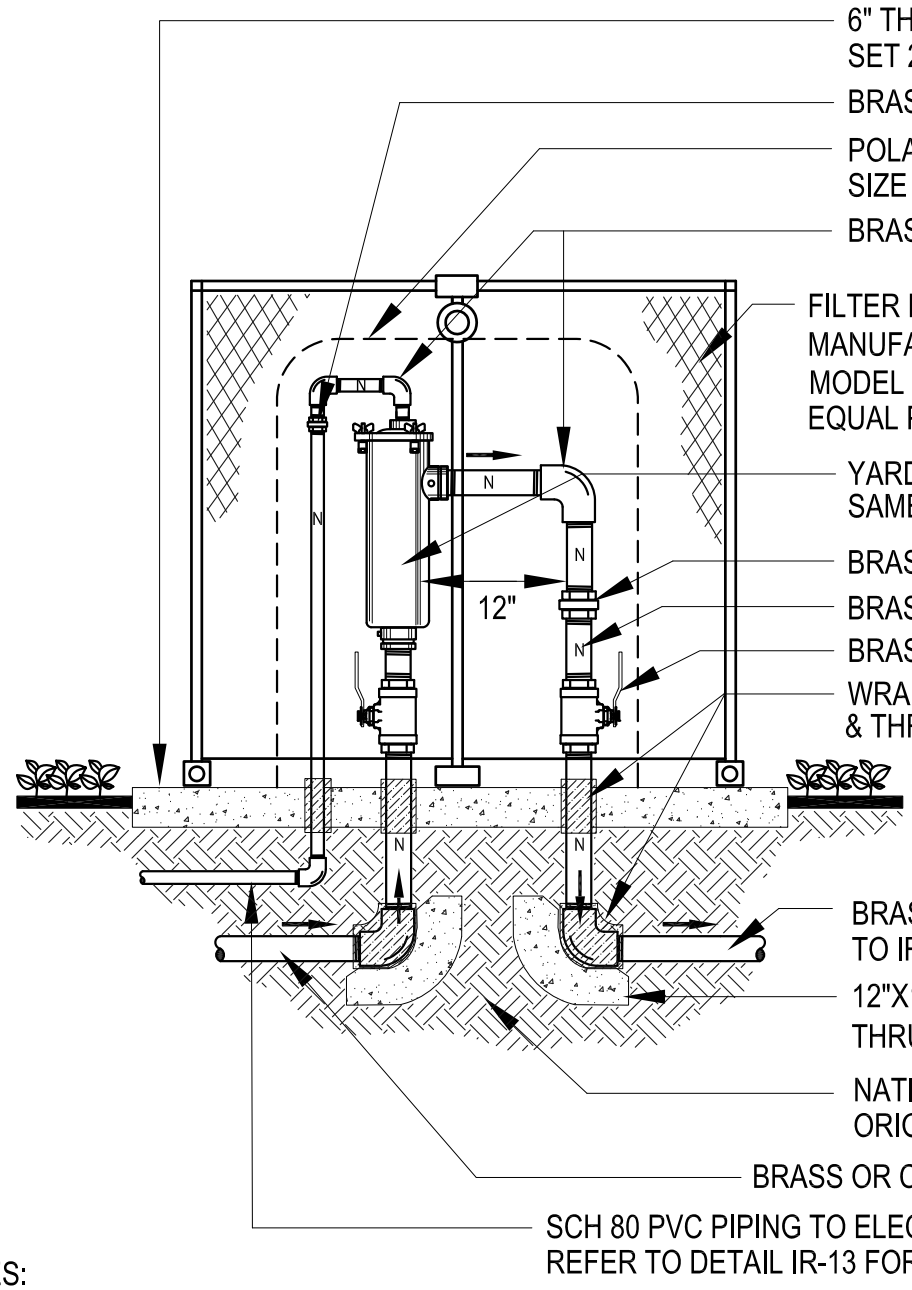
1. INSTALLATION MUST CONFORM TO LOCAL CODES
2. OBTAIN WATER CO. APPROVAL PRIOR TO INSTALLATION
3. LOCATE FILTER IN PLANTER WHERE POSSIBLE
4. WRAP ALL PIPING WHERE CONCRETE OCCURS
5. ALL EXPOSED PIPING FROM FILTER FLUSH LINE SHALL BE BRASS
6. CONTRACTOR MUST PROVIDE BACKFLOW CERTIFICATION PRIOR TO ACCEPTANCE
7. ALL BALL VALVES AND UNIONS MUST BE 4" MIN. ABOVE CONCRETE SLAB

HESPERIA
Recreation & Park District

POTABLE WATER BACKFLOW/FILTER

IR-12B

2014



NOTES:

1. INSTALLATION MUST CONFORM TO LOCAL CODES
2. OBTAIN WATER CO. APPROVAL PRIOR TO INSTALLATION
3. LOCATE FILTER IN PLANTER WHERE POSSIBLE
4. WRAP ALL PIPING WHERE CONCRETE OCCURS
5. ALL EXPOSED PIPING FROM FILTER FLUSH LINE SHALL BE BRASS
6. ALL BALL VALVES AND UNIONS MUST BE 4" MIN. ABOVE CONCRETE SLAB

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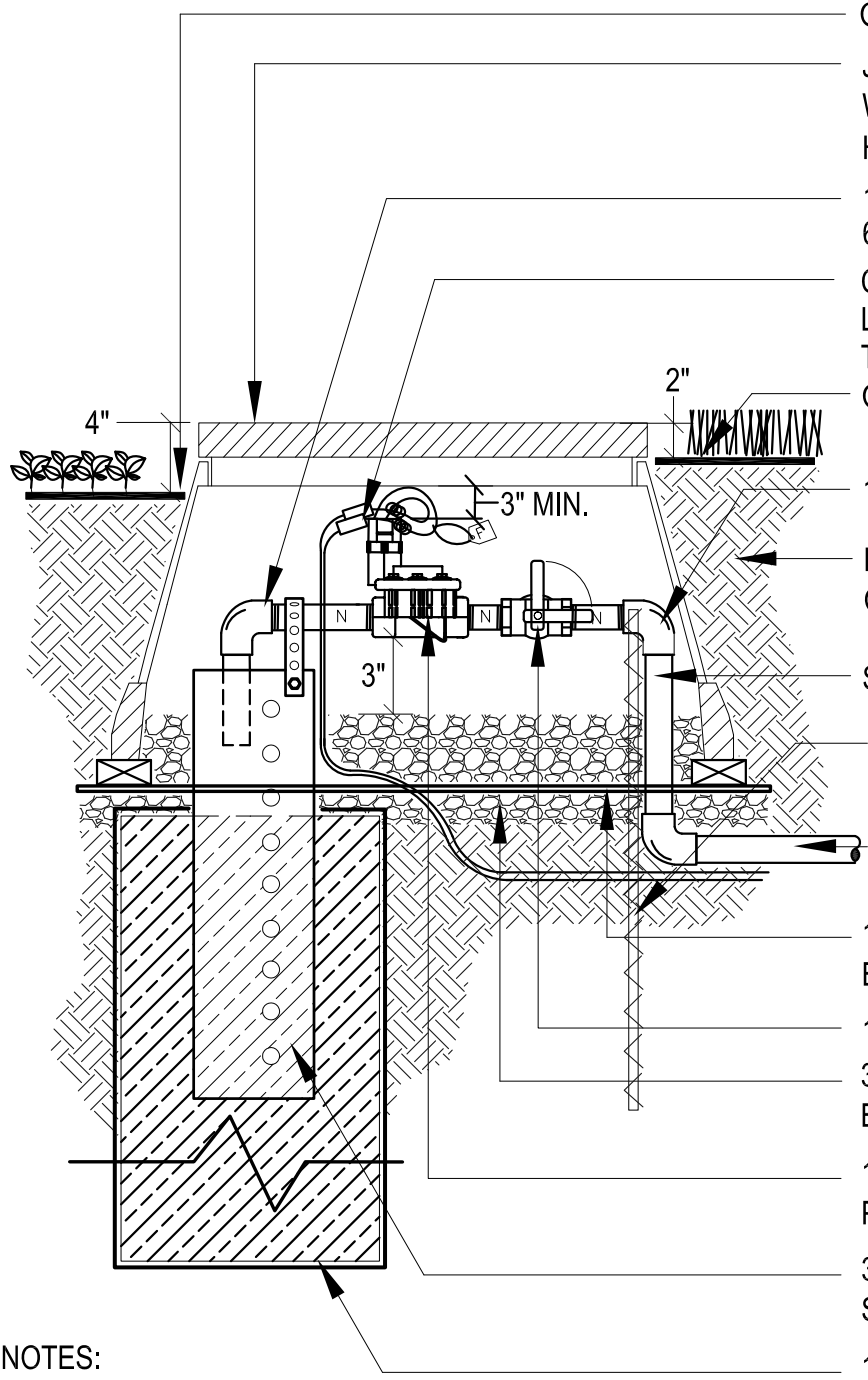
Recreation & Park District

AUTO FILTER (WITHOUT FERTIGATION)

IR-12C

2014



GRADE IN PLANTER 4" BELOW BOX

JUMBO RECTANGULAR VALVE BOX W/ LOCKING SS BOLT
HEAT BRAND "AF" FOR AUTO FLUSH

1" SLIP X FT SCH 80 PVC ELL WITH 6" SCH NIPPLE INSIDE 8" DRAIN PIPE

CONTROL WIRING CONNECTED TO LAST STATION IN CLOCK AND SET TO RUN 1 MIN. PER DAY

GRADE IN TURF 2" BELOW BOX

1" SLIP X FT SCH 80 PVC ELL

NATIVE SOIL COMPACTED TO ORIGINAL DENSITY

SCH 80 PVC CUT TO LENGTH

#4 X 36" LONG REBAR WITH 2 EA. STAINLESS STEEL CLAMPS

1" SCH 80 PIPING TO FILTER PER DETAIL IR-12A, IR-12B or IR12C

1/2" GALV. 19 GA.WIRE MESH BELOW BOX OPENING & PIPE OPENING

1" BRASS BALL VALVE

3 CU.FT. 3/4" GRAVEL WITH 3" GAP BETWEEN VALVE & GRAVEL

1" REMOTE CONTROL VALVE PER LEGEND & SPECS.

3" PERFORATED PIPE 24" LONG SET 2" BELOW BOTTOM OF VALVE

18" DIA. X 48" DEEP 3/4" GRAVEL SUMP WRAPPED WITH 140N MIRAFY

NOTES:

1. TAPE & BUNDLE WIRES @ 10' INTERVALS
2. PROVIDE 24" LONG EXPANSION COILS AT EACH WIRE CONNECTION
3. PROVIDE 3" CLEARANCE BETWEEN VALVE & BOX
4. PROVIDE 4 EA. CONCRETE BRICKS UNDER VALVE BOX (TYP.)
5. SECURE END OF FLUSH LINE PIPING TO 8" DRAIN PIPE WITH PLUMBER'S TAPE

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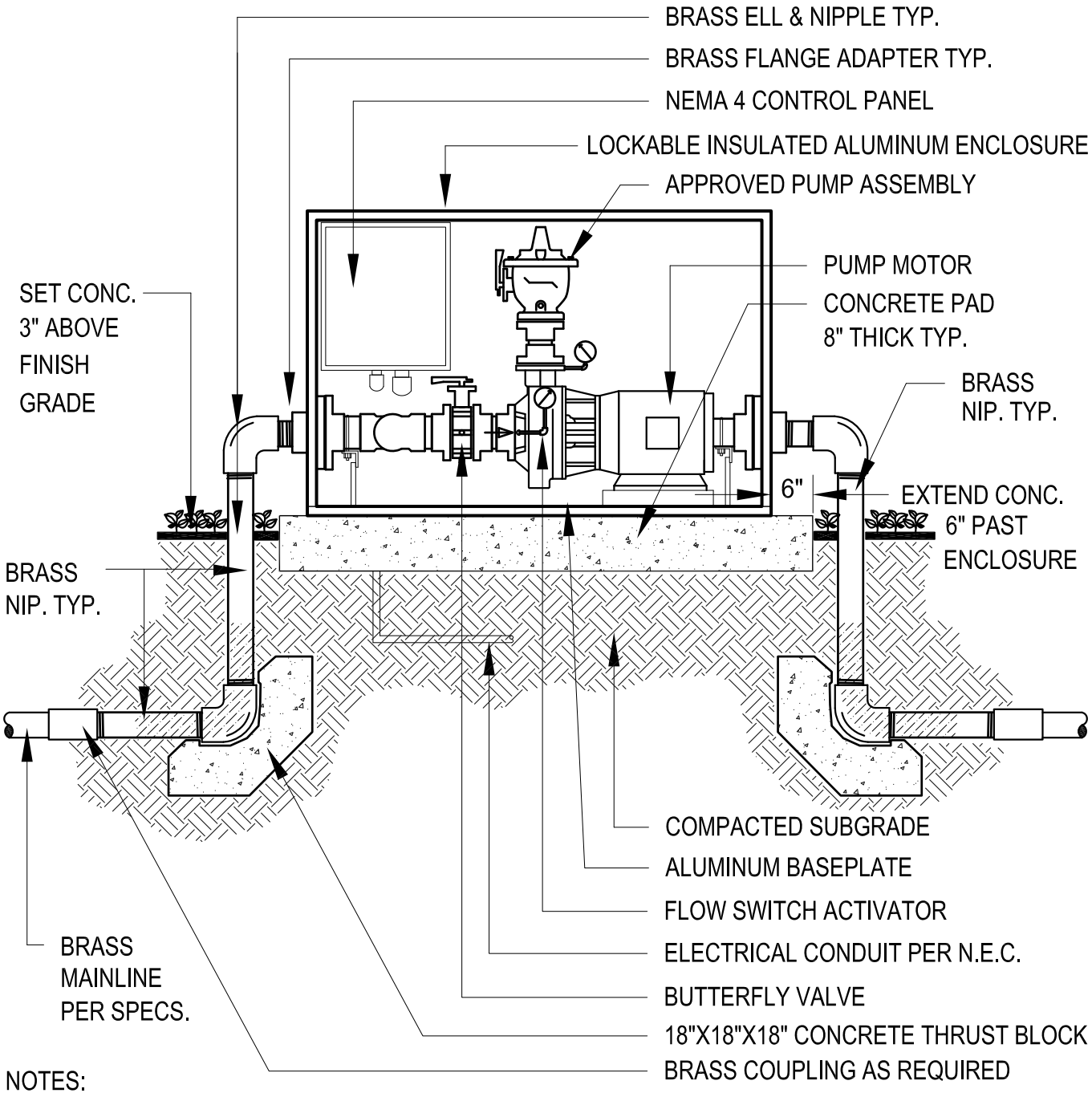
AUTO FLUSH VALVE AT P.O.C.

IR-13

2014



NOTES:

1. BOOSTER PUMP SHALL BE PRE-ASSEMBLED BY BARRETT ENGINEERED PUMPS
2. ALL PIPING OVER 4" SHALL BE FLANGED
3. WRAP ALL PIPING WHERE CONCRETE OCCURS INCLUDING THRUST BLOCKS
4. REFER TO PLANS FOR PROJECT SPECIFIC MODEL NUMBERS AND NOTES
5. ALL ABOVE GRADE PIPING SHALL BE PAINTED AS DIRECTED BY DISTRICT

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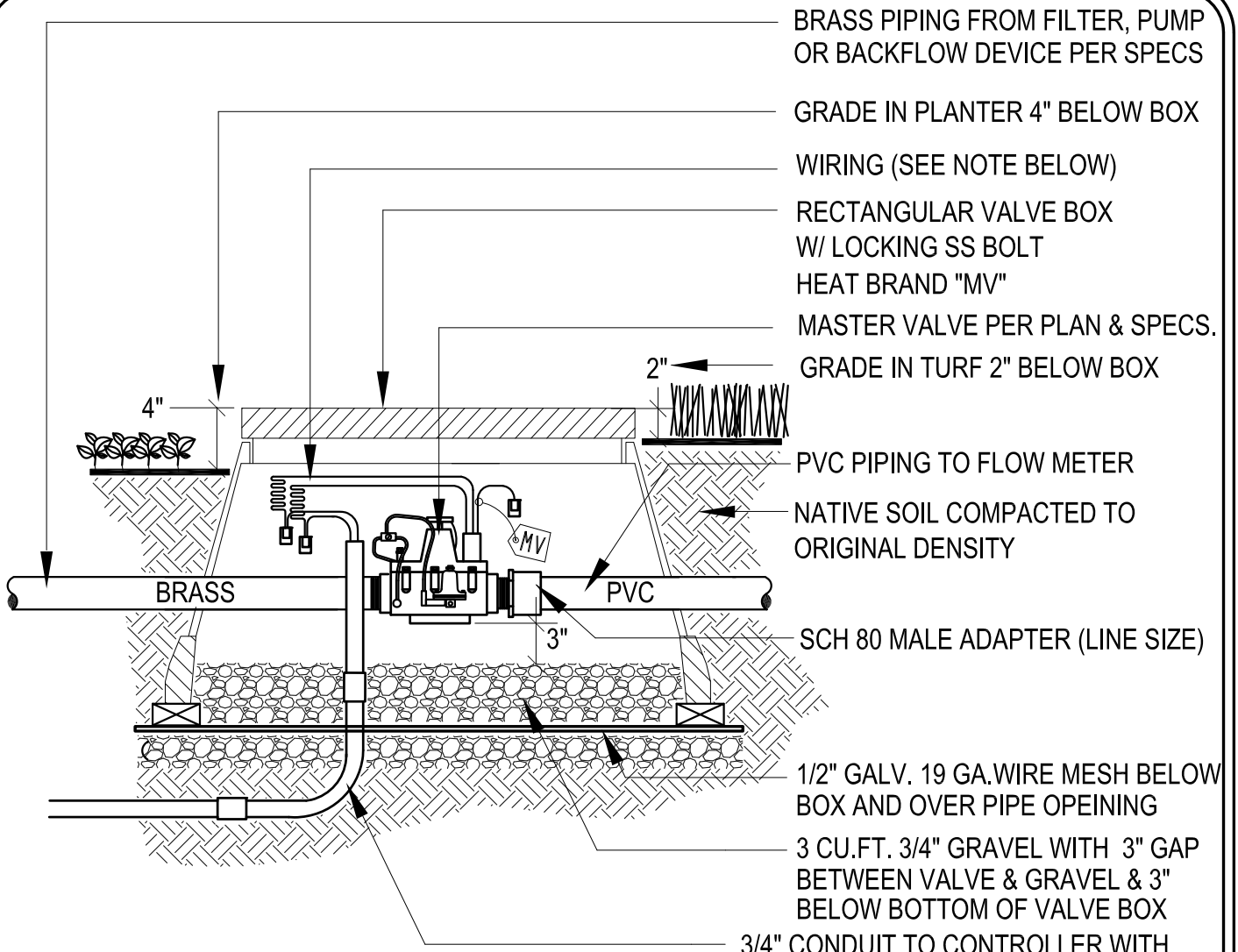
Recreation & Park District

BOOSTER PUMP

IR-14

2014



NOTES:

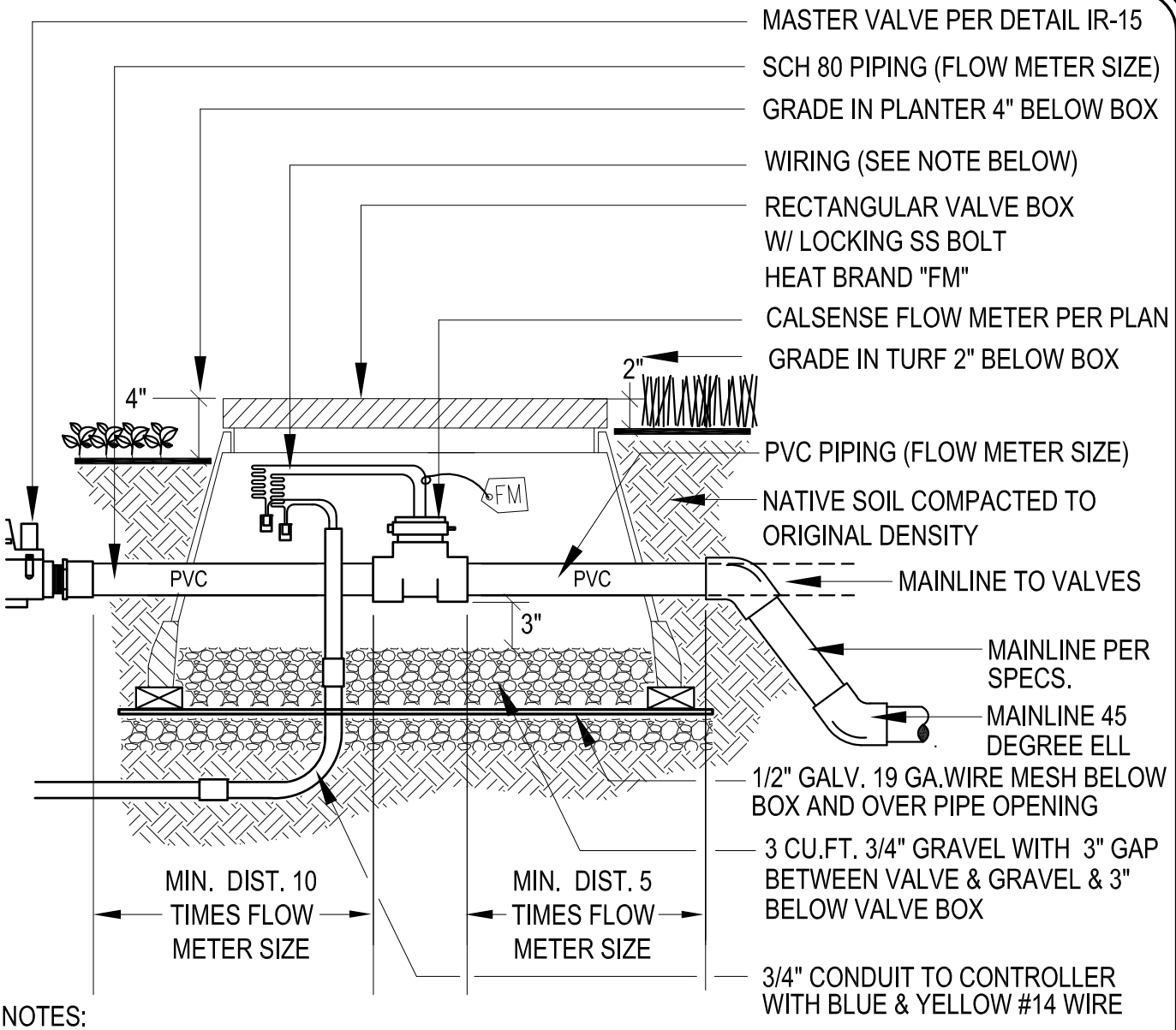
1. ALL WIRING SHALL BE APPROVED BY THE DISTRICT PRIOR TO BACKFILL
2. PROVIDE 24" LONG EXPANSION COILS AT EACH WIRE CONNECTION
3. PROVIDE 4 EA. COMMON BRICKS UNDER VALVE BOX (TYP.)
4. USE IRON DUCTILE FITTINGS FOR 4" & LARGER MAINLINE
5. PROVIDE SEPARATE MASTER VALVE AND FLOW METER WHEN AN ADDITIONAL CONTROLLER IS SPECIFIED OR USE SINGLE MASTER VALVE AND FLOW METER WHEN THE "FL" OPTION IS USED FOR MULTIPLE CONTROLLERS AS APPROVED BY THE DISTRICT AND CALSENSE
6. NEVER CONNECT SINGLE MASTER VALVES AND FLOW METERS TO BOTH CONTROLLERS
7. PROVIDE BRASS PIPING IN LIEU OF SCH 80 PVC WHEN BRASS FLOW METER IS SPECIFIED
8. SEAL WIRE CONNECTORS AND CONDUIT OPENING WITH HARDENING SEALANT PER SPECS.
9. FLOW METERS 3" AND LARGER SHALL BE FLANGED. PROVIDE SPOOLS AND ADAPTERS AS REQ'D.
10. MASTER VALVE SHALL BE STAINLESS STEEL W/PRESSURE REDUCING AND SURGE RELIEF OPTIONS

HESPERIA
Recreation & Park District

MASTER CONTROL VALVE

IR-15

2014



NOTES:

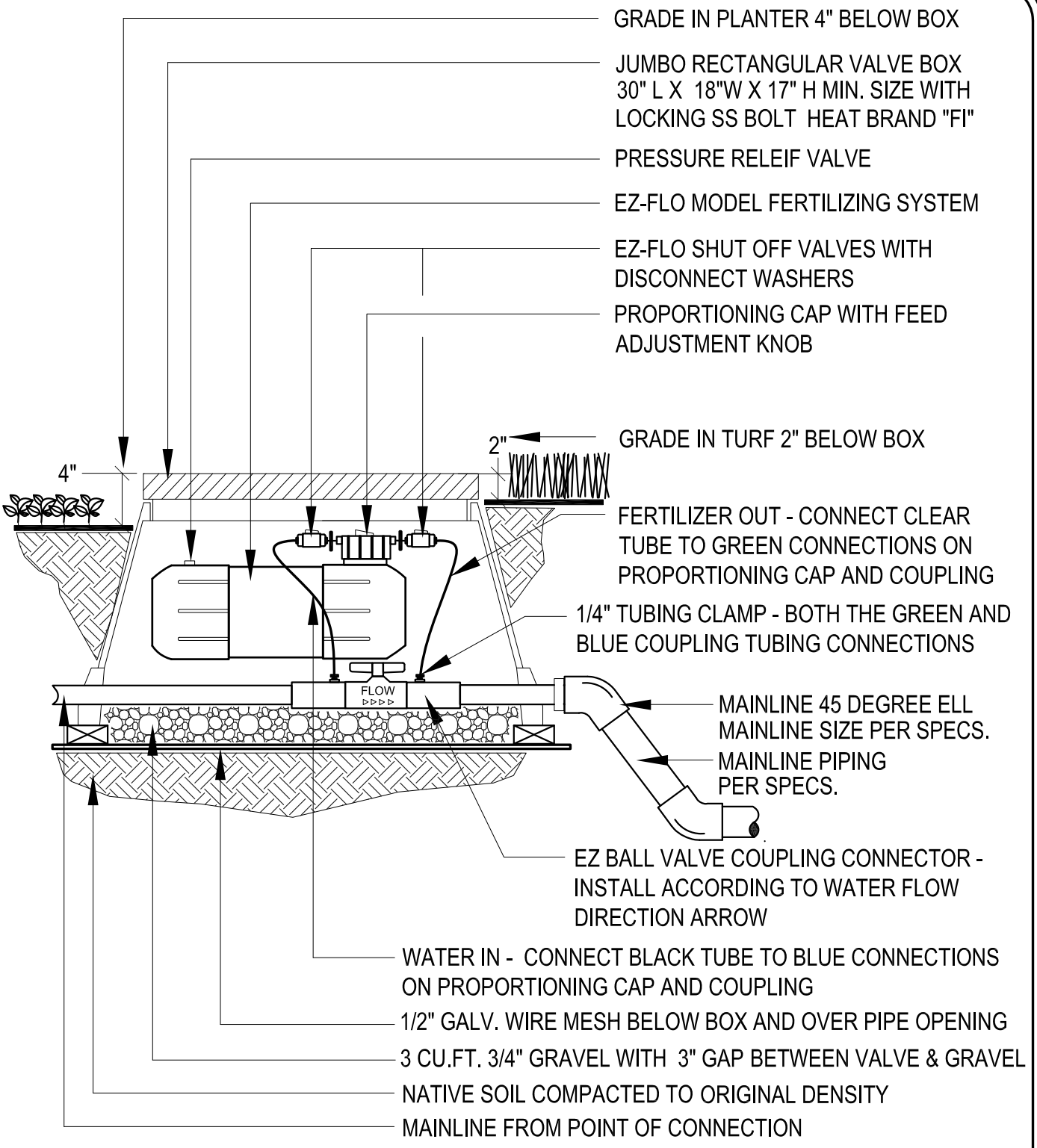
1. ALL WIRING SHALL BE APPROVED BY THE DISTRICT PRIOR TO BACKFILL
2. PROVIDE 24" LONG EXPANSION COILS AT EACH WIRE CONNECTION
3. PROVIDE 4 EA. COMMON BRICKS UNDER VALVE BOX (TYP.)
4. USE IRON DUCTILE FITTINGS FOR 4" & LARGER MAINLINE
5. PROVIDE SEPARATE MASTER VALVE AND FLOW METER WHEN AN ADDITIONAL CONTROLLER IS SPECIFIED OR USE SINGLE MASTER VALVE AND FLOW METER WHEN THE "FL" OPTION IS USED FOR MULTIPLE CONTROLLERS AS APPROVED BY THE DISTRICT AND CALSENSE
6. NEVER CONNECT SINGLE MASTER VALVES AND FLOW METERS TO BOTH CONTROLLERS
7. PROVIDE BRASS PIPING IN LIEU OF SCH 80 PVC WHEN BRASS FLOW METER IS SPECIFIED
8. SEAL WIRE CONNECTORS AND CONDUIT OPENING WITH HARDENING SEALANT PER SPECS.

HESPERIA
Recreation & Park District

FLOW METER

IR-16

2014



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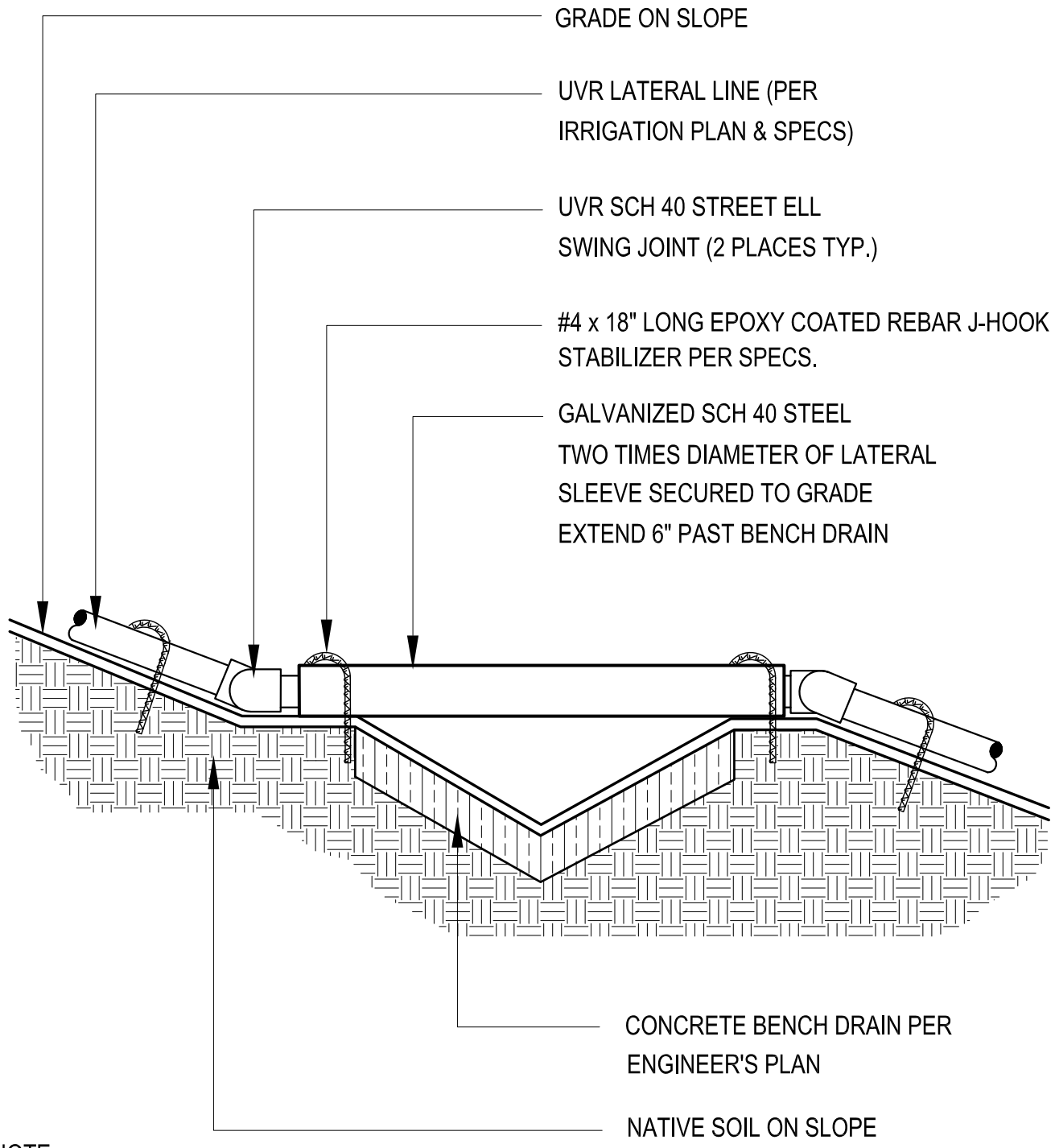
Recreation & Park District

EZ-FLO FERTILIZING SYSTEM

IR-17

2014



NOTE:

1. EXTEND GALVANIZED STEEL SLEEVE A MIN. OF 6" PAST BENCH DRAIN EDGE

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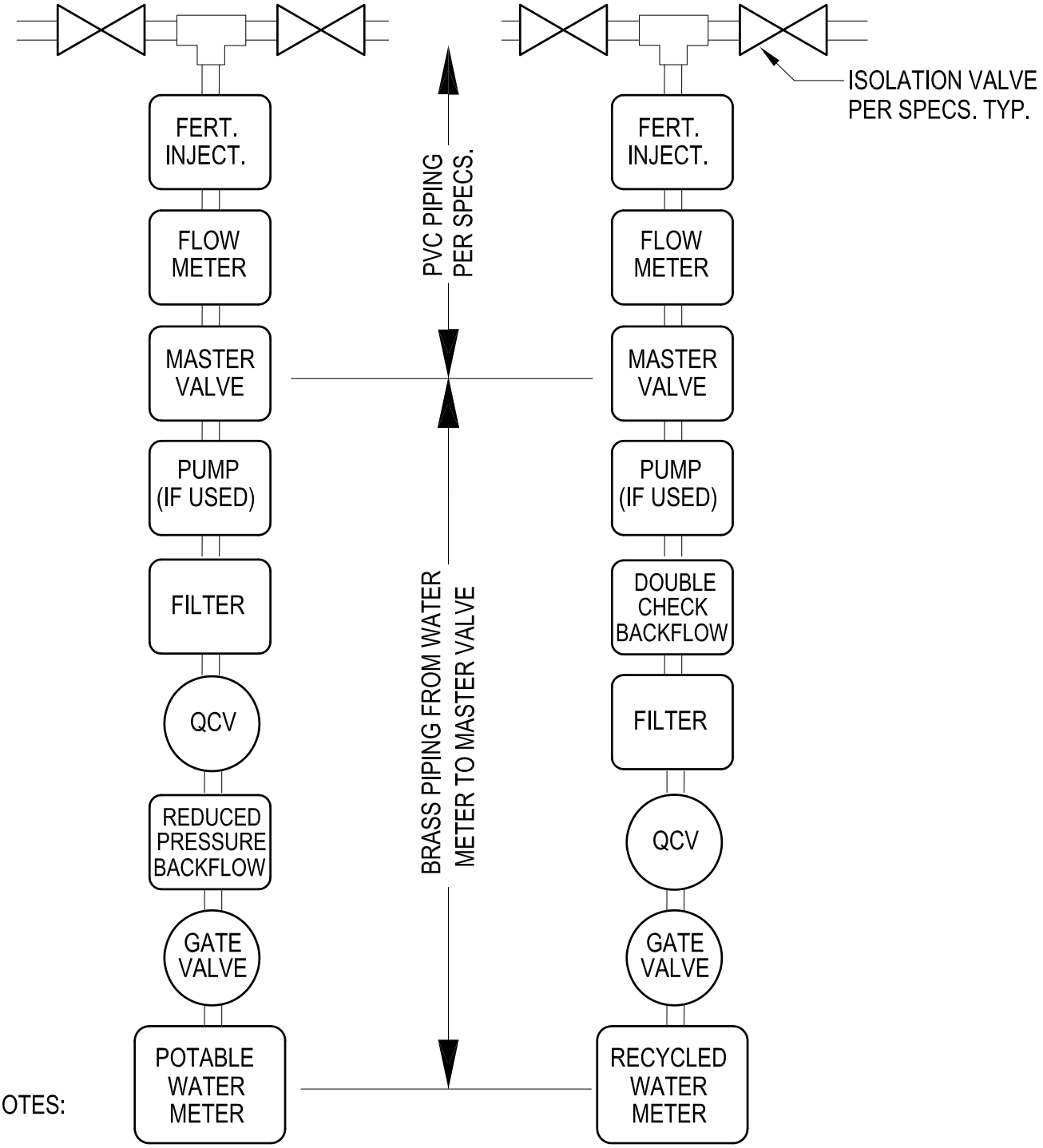
BENCH DRAIN CROSSING

IR-18

2014



NOTES:

1. ALL PIPING BETWEEN WATER METER AND MASTER VALVE MUST BE BRASS UNLESS APPROVED IN WRITING BY THE DISTRICT
2. OBTAIN LAYOUT PLACEMENT APPROVAL FOR ALL UTILITIES PRIOR TO INSTALLATION

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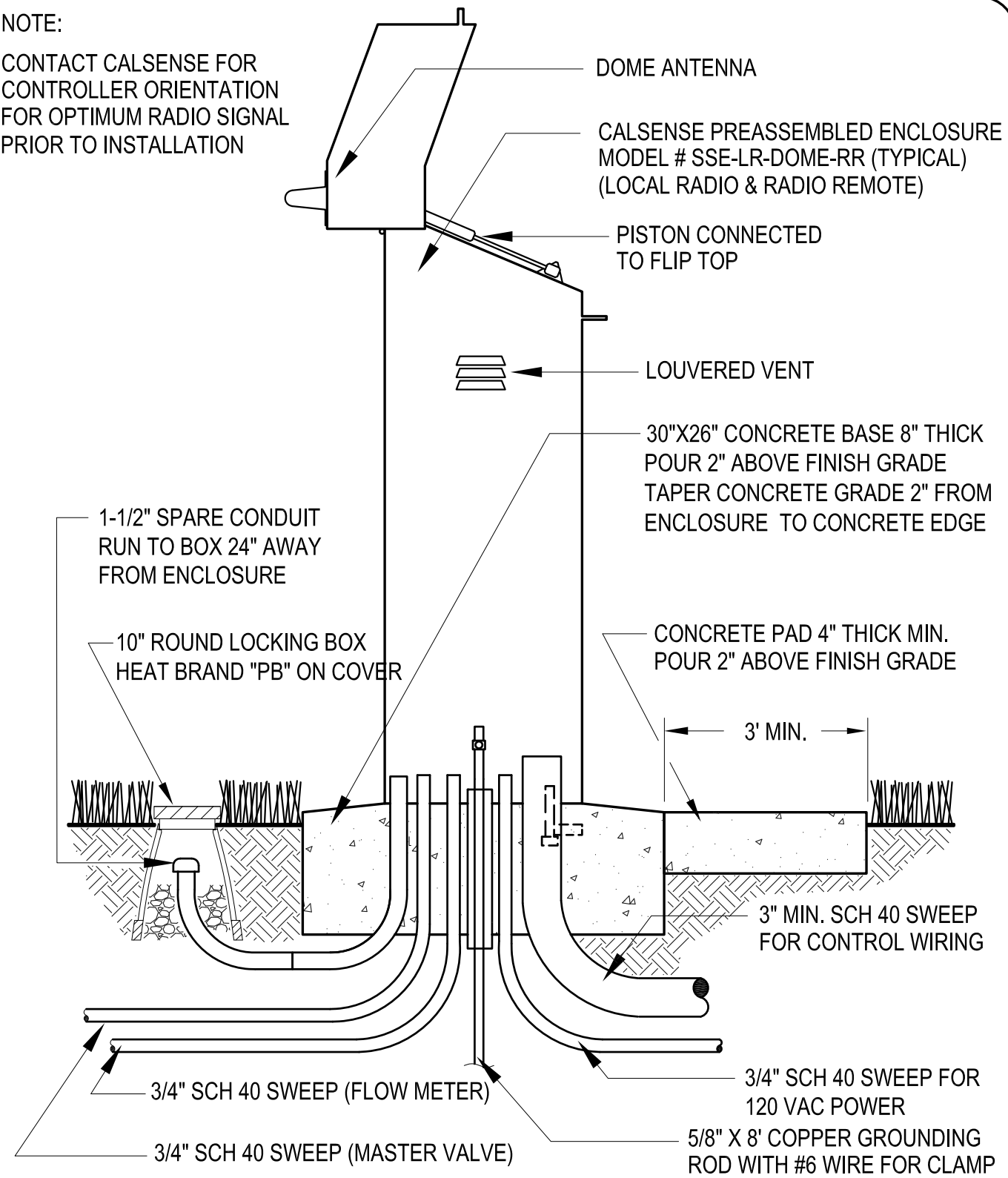
P.O.C. LAYOUT SEQUENCE

IR-19

2014

NOTE:

CONTACT CALSENSE FOR CONTROLLER ORIENTATION FOR OPTIMUM RADIO SIGNAL PRIOR TO INSTALLATION

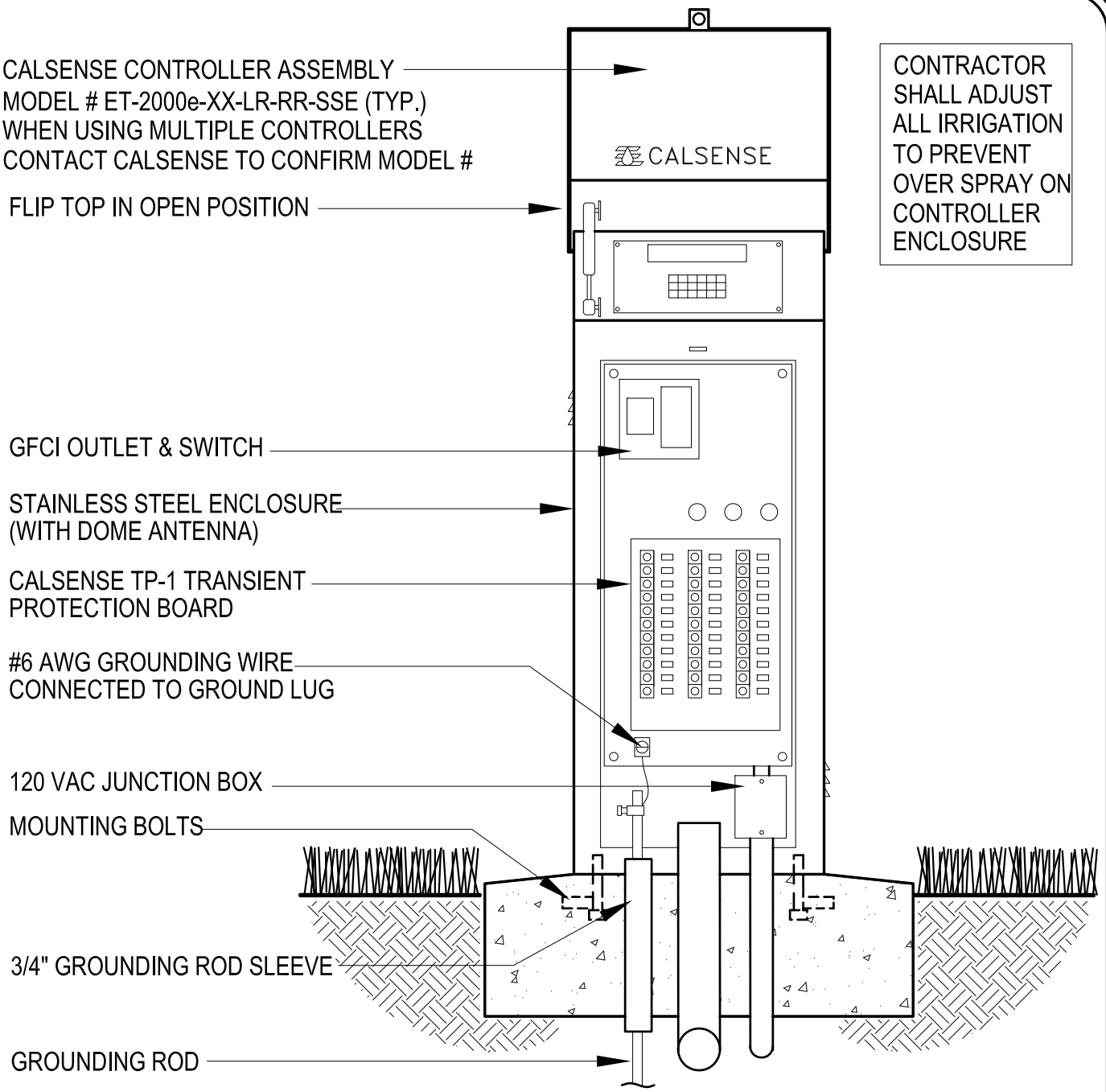


HESPERIA
Recreation & Park District

IRRIGATION PEDESTAL ENCLOSURE

IR-20

2014



NOTES:

1. CONTACT CALSENSE FOR SPECIFIC CONTROLLER MODEL NUMBER FOR EACH INDIVIDUAL PROJECT
2. ALL CONTROLLER COMPONENTS MUST BE CERTIFIED BY CALSENSE
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND INSTALLING ALL REQUIRED CONTROLLER COMMUNICATIONS CONTACT CALSENSE FOR EACH PROJECT REQUIREMENTS
4. CONTRACTOR SHALL INSTALL AND PROGRAM FLUSH VALVE TO DRIP 2 PROG. PER SPECS.

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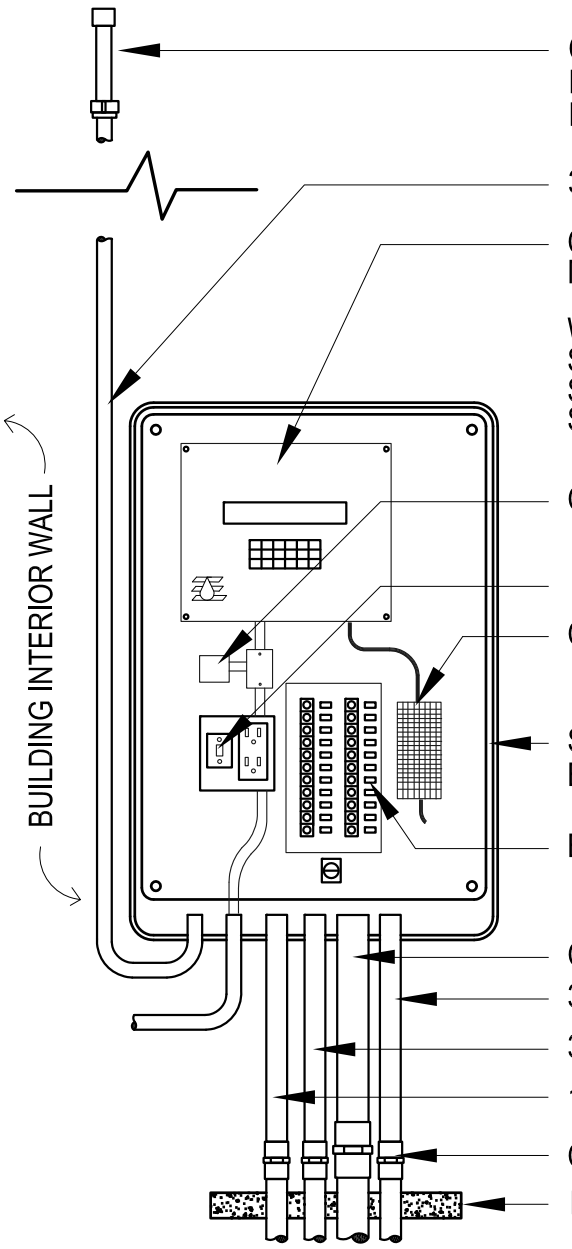
IRRIGATION PEDESTAL CONTROLLER

IR-21

2014



CALSENSE STICK ANTENNA OR YAGGI
MOUNT TO EAVE OF BUILDING PER
PLAN AND CALSENSE REQUIREMENTS

3/4" CONDUIT TO EAVE OF BUILDING

CALSENSE CONTROLLER ASSEMBLY
MODEL # ET-2000e-XX-LR-RR-TPP-SSBP-LR-DOME (TYP.)

WHEN USING MULTIPLE CONTROLLERS
SPECIFY -MLR FOR A CLOCK AND
SPECIFY -ML FOR B CLOCK
SPECIFY -FL WHEN CONTROLLERS SHARE MAINLINE

CALSENSE TP-110 SURGE ARRESTOR

120 VAC GFCI OUTLET & SWITCH

CALSENSE TP-1 TRANSIENT PROTECTION BOARD

STAINLESS STEEL BACK PANEL ENCLOSURE ASSEMBLY
BY CALSENSE MOUNT TO WALL PER CALSENSE SPECS.

BLOCKS FOR CONTROL WIRING CONNECTIONS

CONTROL WIRE CONDUIT(S) AS REQUIRED

3/4" CONDUIT FOR FLOW METER WIRING

3/4" CONDUIT FOR MASTER VALVE

1-1/2" SPARE CONDUIT

CONDUIT CONNECTIONS WHERE REQUIRED

BLDG. FLOOR

NOTES:

1. CONTACT CALSENSE FOR SPECIFIC CONTROLLER MODEL NUMBER FOR EACH INDIVIDUAL PROJECT
2. ALL CONTROLLER COMPONENTS MUST BE CERTIFIED BY CALSENSE
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND INSTALLING ALL REQUIRED CONTROLLER COMMUNICATIONS CONTACT CALSENSE FOR EACH PROJECT REQUIREMENTS
4. CONTRACTOR SHALL INSTALL AND PROGRAM FLUSH VALVE TO DRIP 2 PROG. PER SPECS.
5. SEAL BETWEEN ALL CONDUITS AND BUILDING SURFACE

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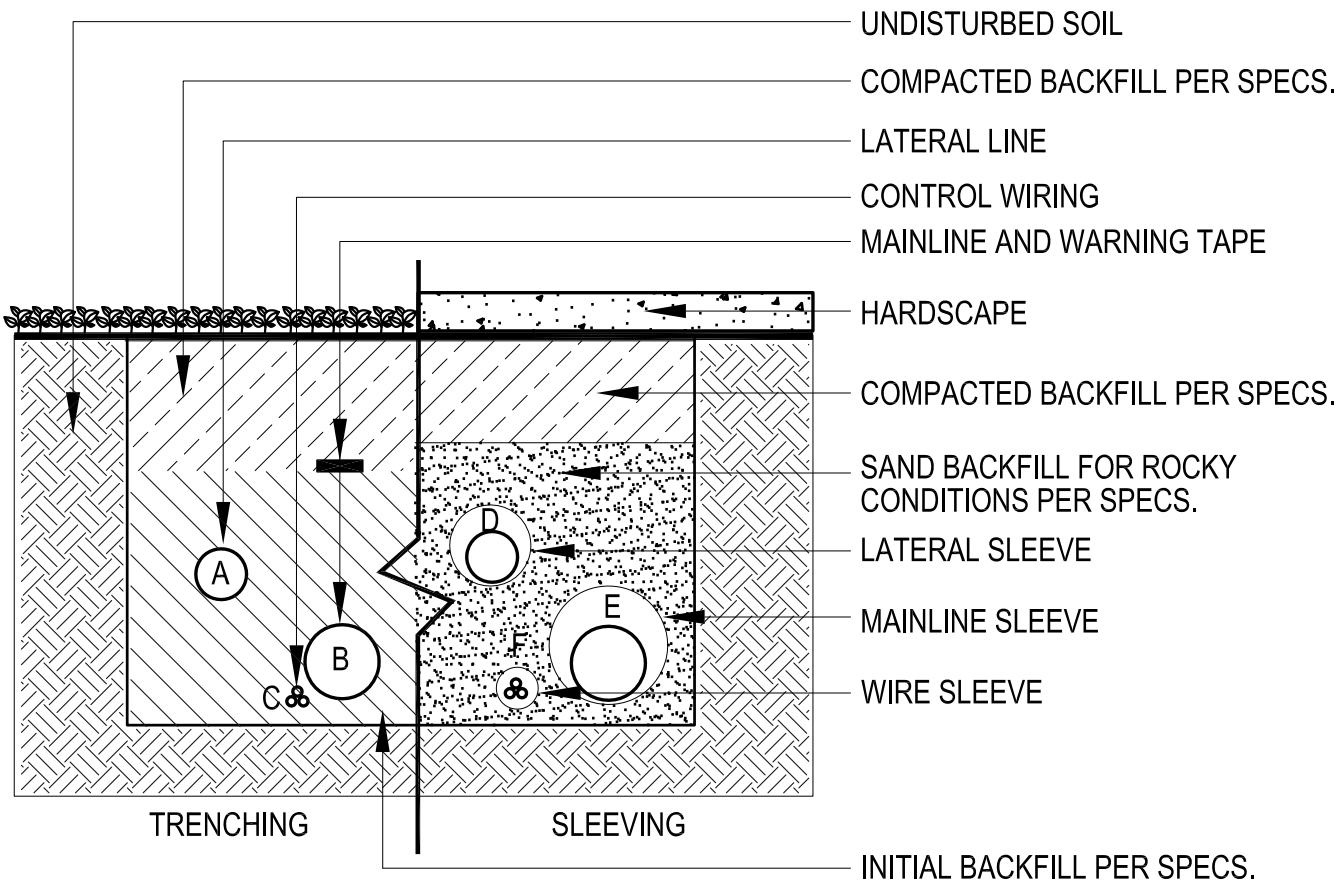
IRRIGATION INDOOR CONTROLLER

IR-22

2014



DEPTH	A	B	C	D	E	F
4" & LARGER	-	30"	30"	36"	36"	36"
3" & SMALLER	18"	24"	24"	30"	36"	36"
2-1/2" & SMALLER	12"	24"	24"	24"	30"	30"
WIRING	-	-	BELOW MAIN	-	-	BELOW MAIN

NOTES:

1. LINES MUST HAVE MIN. CLEARANCE OF 4" FROM EACH OTHER & 24" FROM OTHER TRADES
2. RUN WIRING UNDER MAINLINE, TAPE & BUNDLE @ 10' O.C.
3. PROVIDE A 24" LOOP IN ALL WIRING AT CHANGES IN DIRECTION
4. ALL SLEEVES MUST BE 2 TIMES THE DIAMETER OF THE PIPE WITHIN
5. ALL SLEEVES MUST HAVE FOAM AT PIPE OPENING TO PREVENT DIRT ENTRY
6. ALL SLEEVES MUST EXTEND 24" MIN. DISTANCE PAST CURB OR SIDEWALK
7. CONTRACTOR MUST ADJUST MAINLINE AROUND ALL STREET LIGHT LOCATIONS

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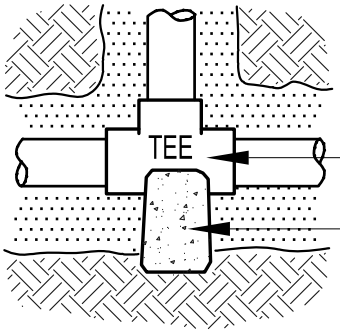
TRENCHING & SLEEVING

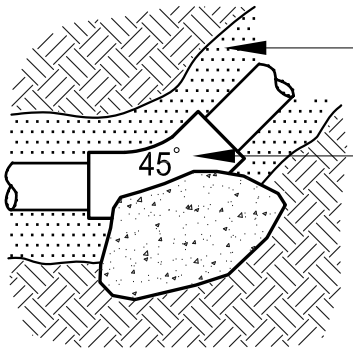
IR-23

2014



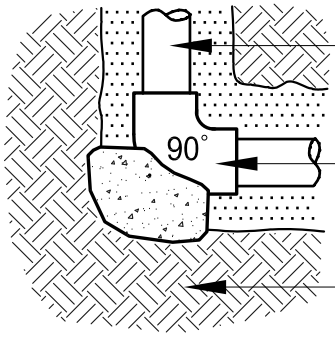
MAINLINE TEE PER SPECS.

CONCRETE THRUST BLOCK TYP.



COMPACTED BACKFILL TYP.

MAINLINE ELL 45 PER SPECS.



MAINLINE PER SPECS. TYP.

MAINLINE ELL 90 PER SPECS.

UNDISTURBED NATIVE SOIL TYP.

NOTES:

1. SUPPLY LINES 2" - 3" IN DIAMETER SHALL RECEIVE CONCRETE THRUST BLOCKS
2. SUPPLY LINES OVER 3" SHALL HAVE IRON DUCTILE RESTRAINT SYSTEM
3. A MINIMUM OF 6" OF CONCRETE SHALL BE POURED ON VIRGIN OR COMPACTED SOIL
4. CONCRETE SHALL BE 3 SACK MIX SLURRY CONTAINING NO GRAVEL
5. WHERE CONCRETE AND PVC ARE TOGETHER PVC PIPE SHALL BE PROTECTED WITH PIPE WRAP

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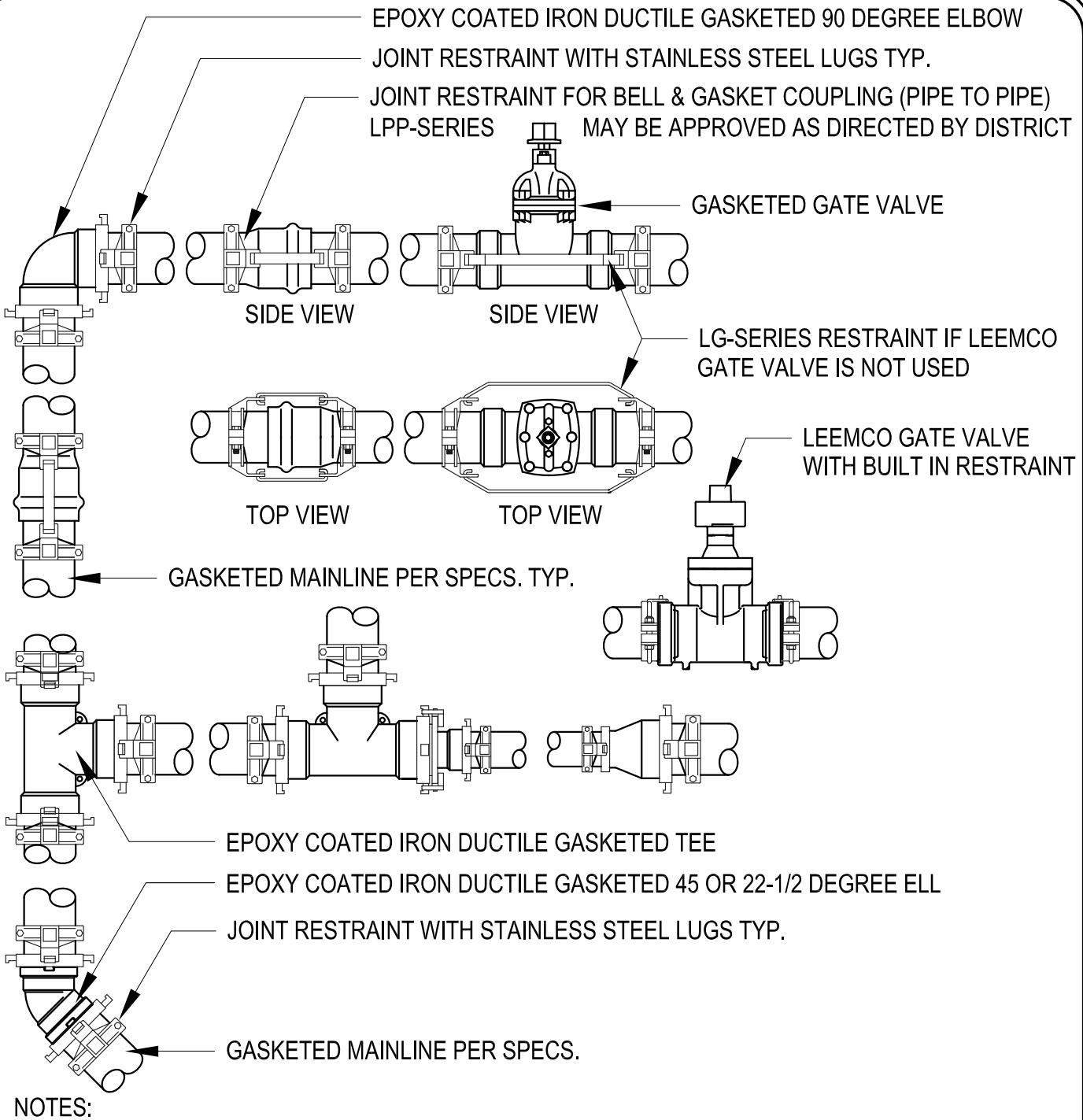
THRUST BLOCK 3" MAIN & SMALLER

IR-24

2014



NOTES:

1. ALL IRON DUCTILE FITTINGS SHALL BE EPOXY COATED WITH INNER GASKET PER SPECS.
2. ALL FITTINGS AND BELL & GASKET COUPLINGS SHALL BE RESTRAINED AS SHOWN ABOVE
3. ALL LUGS SHALL BE STAINLESS STEEL AND TIGHTENED PER MANUFACTURER TORQUE CHART

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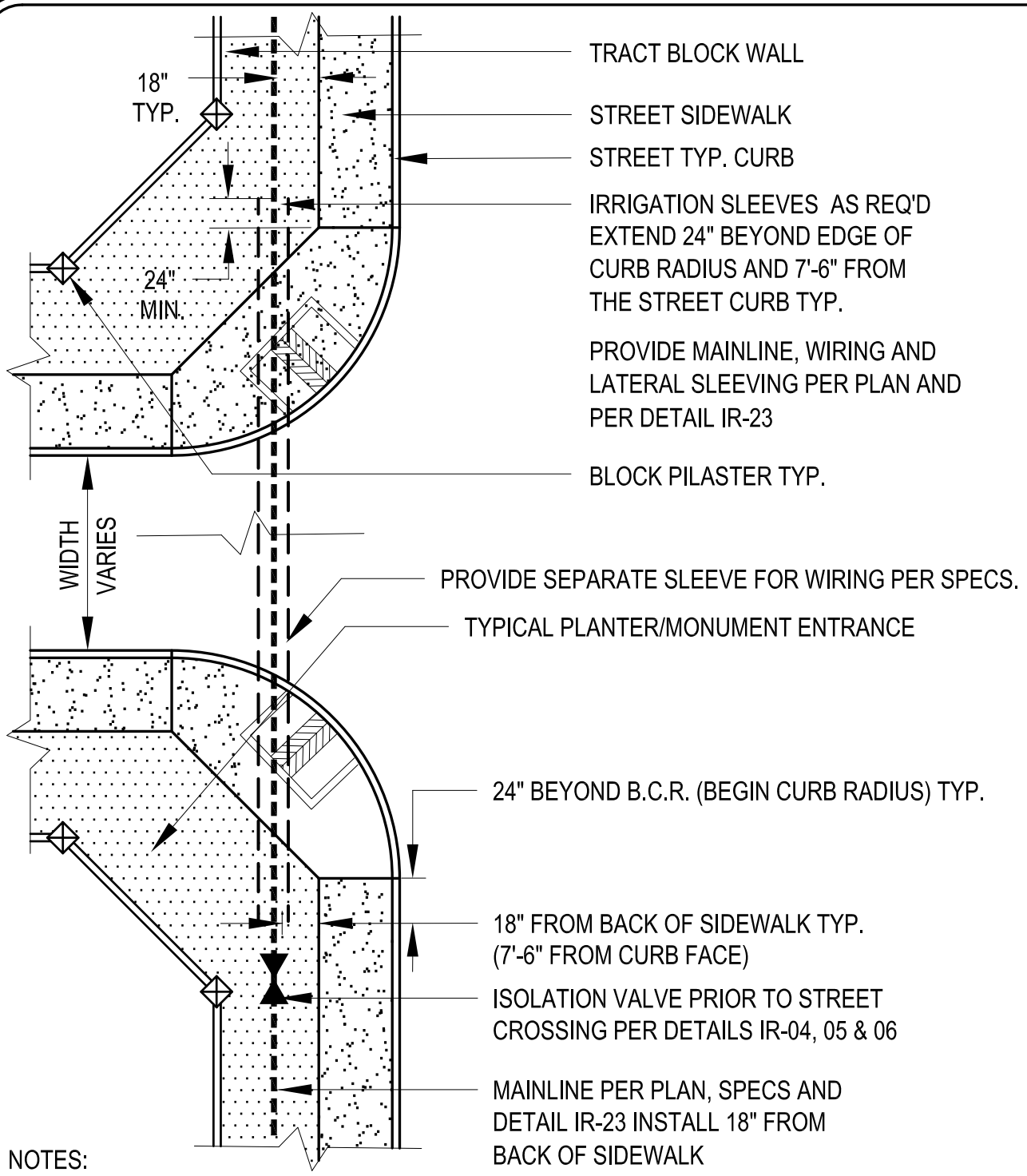
Recreation & Park District

MAINLINE RESTRAINTS 4" & LARGER

IR-25

2014



NOTES:

1. PIPING MUST BE 4" MIN. FROM EACH OTHER AND 24" FROM OTHER UTILITY LINES
2. ALL SLEEVES MUST BE SCH 40 2X THE SIZE OF THE LINE SIZE
3. ALL SLEEVES MUST HAVE A MIN. COVER OF 24" AND NO DEEPER THAN 40"

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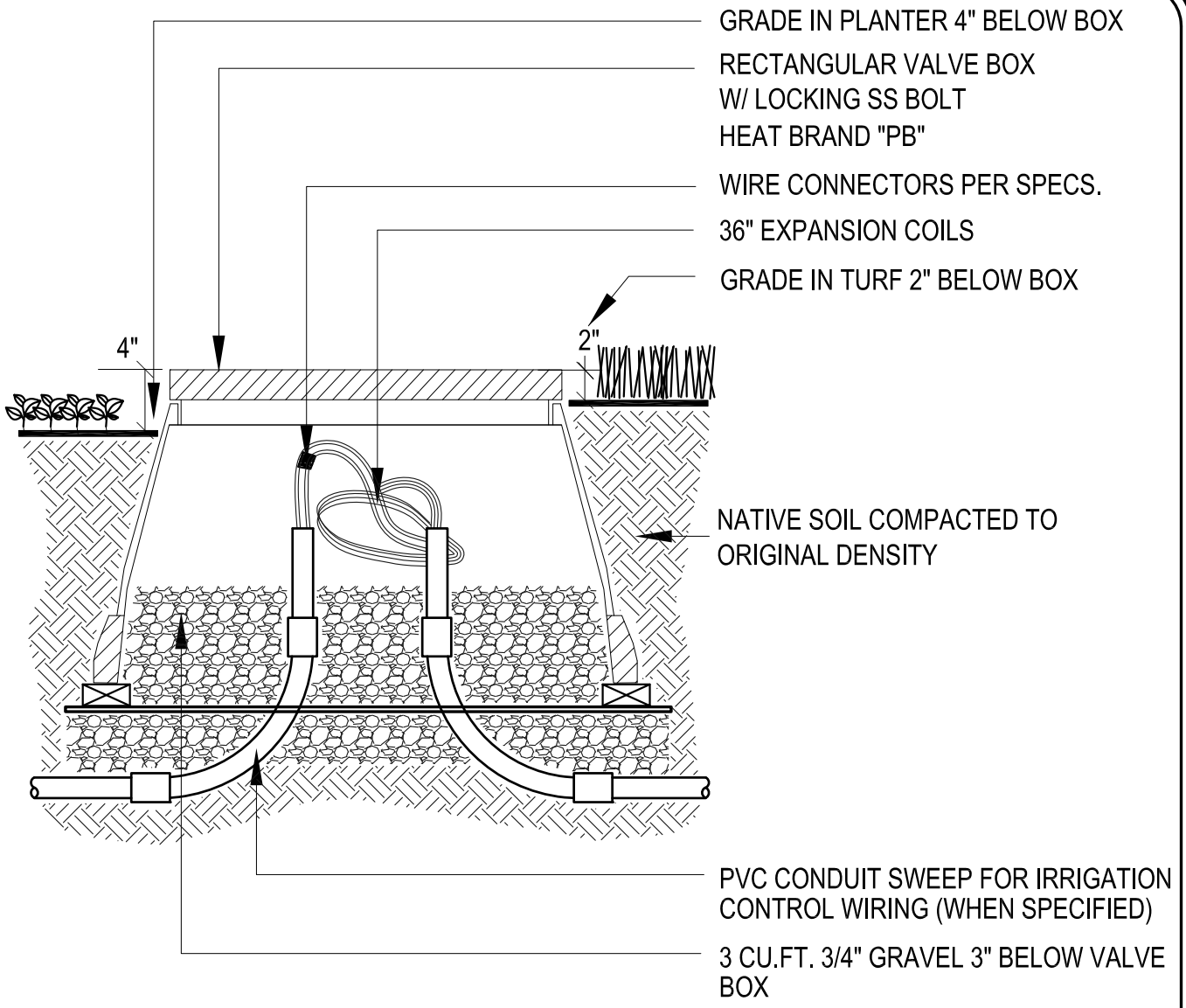
Recreation & Park District

TYPICAL IRRIGATION MAINLINE STREET CROSSING

IR-26

2014



NOTES:

1. ALL WIRING MUST CONFORM TO LOCAL CODES
2. PROVIDE 24" EXPANSION COILS AT EACH WIRE CONNECTION
3. PROVIDE 3" CLEARANCE BETWEEN WIRES & BOX
4. EPOXY ALL GAPS BETWEEN WIRE AND CONDUIT AT EXPOSED SWEEP ENDS
5. PROVIDE 4 EA. COMMON BRICKS UNDER VALVE BOX (TYP.)
6. NO WIRE SPLICES SHALL BE ALLOWED UNLESS APPROVED BY THE DISTRICT
7. ALL SPARE WIRES FOR END OF RUN SHALL BE IN A PULL BOX TYP. AND SHALL BE LABELED IN BOX AND AT CONTROLLER
8. PROVIDE PULL BOX FOR ALL WIRE SPLICES FOR RUNS OVER 2500 FEET OR AS APPROVED

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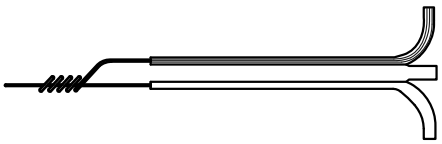
Recreation & Park District

PULL BOX

IR-27

2014

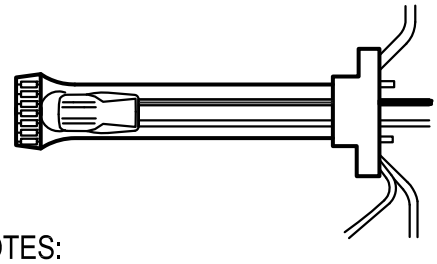


STEP 1 STRIP WIRES AND TWIST TOGETHER LEAVING ONE WIRE OVER HALF OF THE LENGTH OF THE TWISTED DISTANCE

STEP 2 BEND UNTWISTED WIRE BACK OVER TWISTED DISTANCE AS SHOWN

STEP 3 APPLY SCOTCHLOK ELECTRICAL CONNECTOR AND TWIST IN A CLOCKWISE DIRECTION UNTIL TIGHT BUT DO NOT STRIP THREADS

STEP 4 INSERT THE SPLICE INTO THE GEL-FILLLED INSULATOR TUBE. PUSH PAST THE LOCKING FINGERS TO HOLD THE SCOTCHLOK CONNECTOR IN PLACE



STEP 5 POSITION WIRE CHANNELS AND SNAP INSULATOR TUBE COVER CLOSED

NOTES:

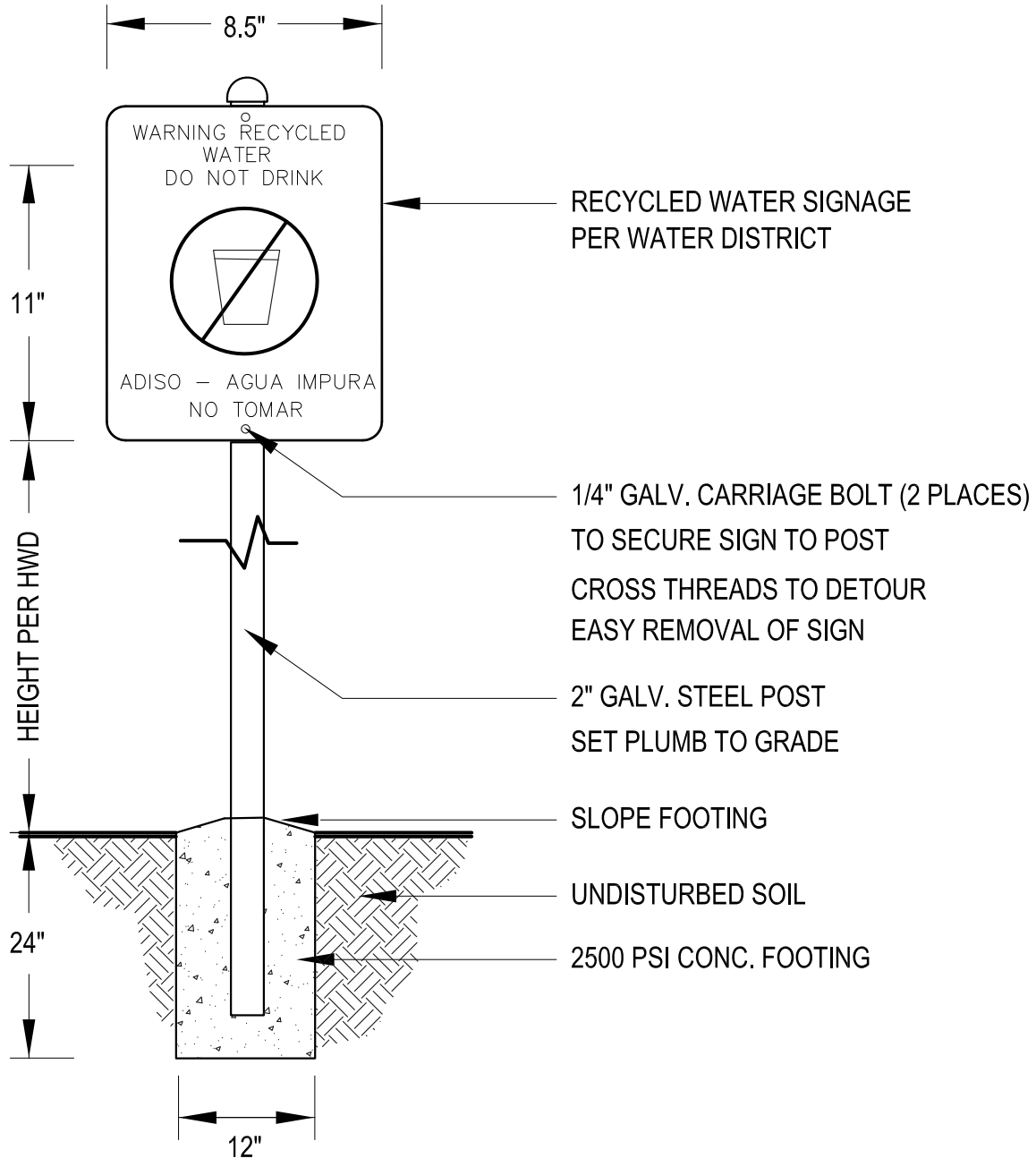
1. PROVIDE BLUE SEALANT IN ADDITION TO PRE-FILLED CONNECTOR
2. PROVIDE WIRE CONNECTORS FOR ALL CONTROL WIRE SPLICES
3. PROVIDE WIRE CONNECTORS AT ENDS OF ALL EXTRA WIRES
4. WIRE SPLICES SHALL BE INSIDE VALVE BOXES AT VALVES OR FOR RUNS OVER 2500 FEET
5. PROVIDE #12 CONTROL WIRE & #10 COMMON WIRE FOR RUNS OVER 2500 FEET
6. SOLDER WIRE SPLICES FOR MASTER VALVE AND FLOW METER CONNECTIONS
7. WIRE CONNECTORS SHALL BE 3M DBR-6 PER SPECS OR APPROVED EQUAL
8. INSTALL WIRING PER DETAIL LC-23

HESPERIA
Recreation & Park District

WIRE CONNECTORS

IR-28

2014



NOTES:

1. SIGNAGE MUST COMPLY WITH WATER CO. REQUIREMENTS
2. PROVIDE SIGNAGE AT ALL PROJECT ENTRIES AND AT EACH WATER METER CONNECTION
3. PROVIDE ADDITIONAL SIGNAGE ALONG PARKWAYS AND TRAILS AS DIRECTED BY WATER CO.
4. NO SIGN SHALL BE WITHIN COUNTY OR CITY ROW SITE DISTANCE OBSTRUCTION

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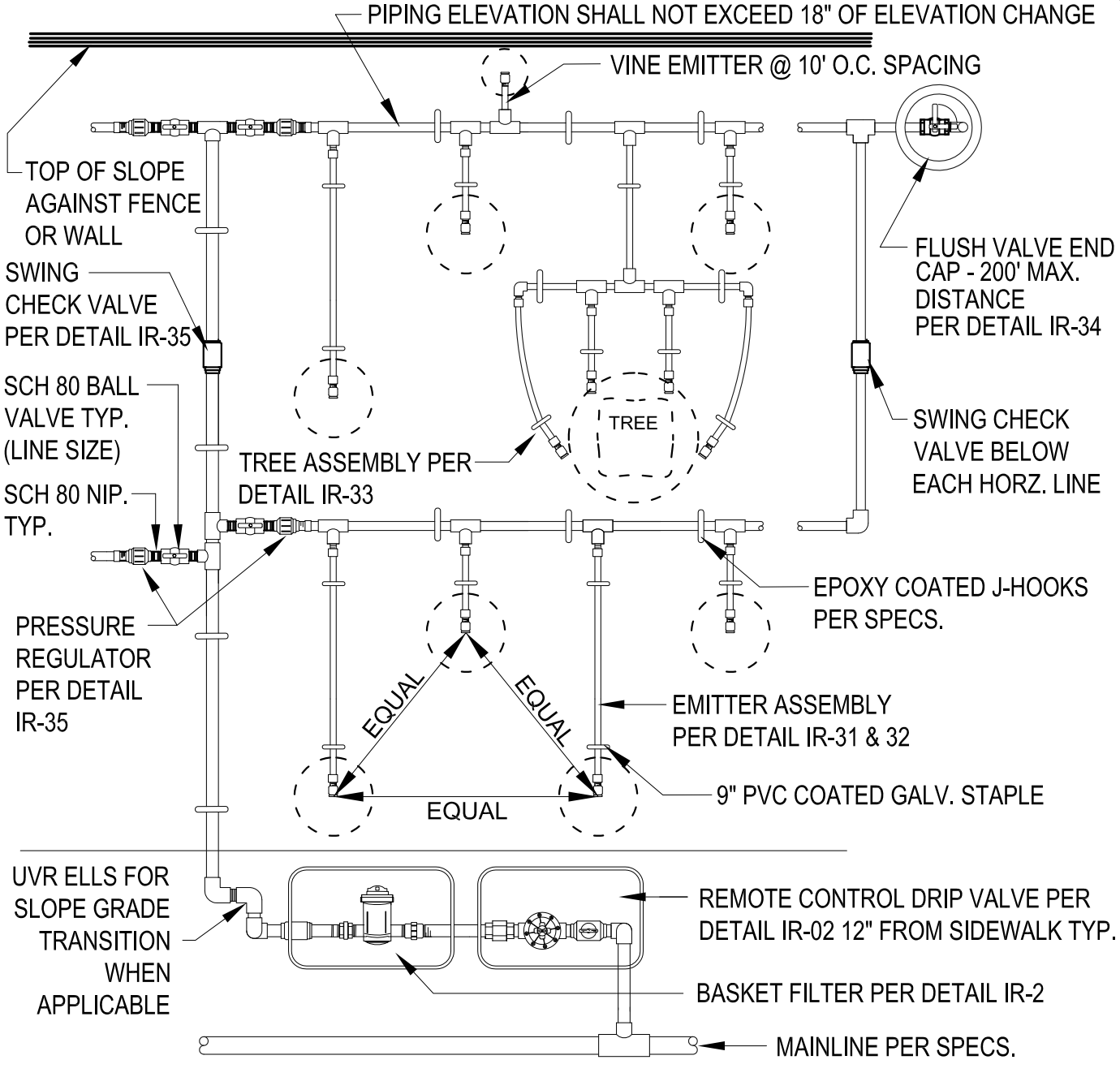
Recreation & Park District

RECYCLED WATER SIGN

IR-29

2014



NOTES:

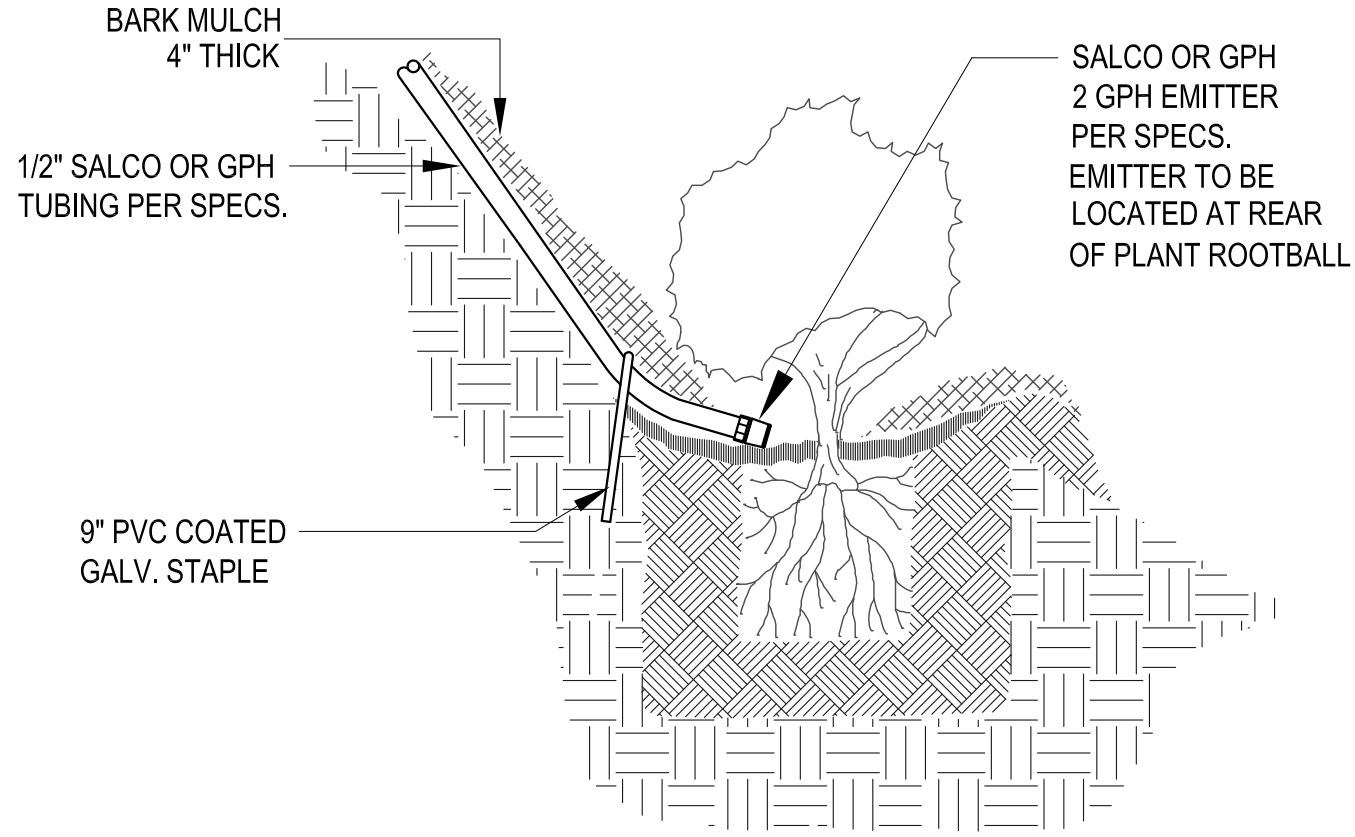
1. ALL PIPING FOR POINT TO POINT LATERALS WITHIN 8 FEET OF ANY WALKING OR DRIVING SURFACE SHALL BE BURIED 4" DEEP. PIPING SHALL BE UVR PVC AND HAVE J-HOOKS PER DETAILS AND SPECS.
2. ALL UVR PIPE JOINTS AND FITTINGS BELOW AND ABOVE GRADE SHALL BE PRIMED.

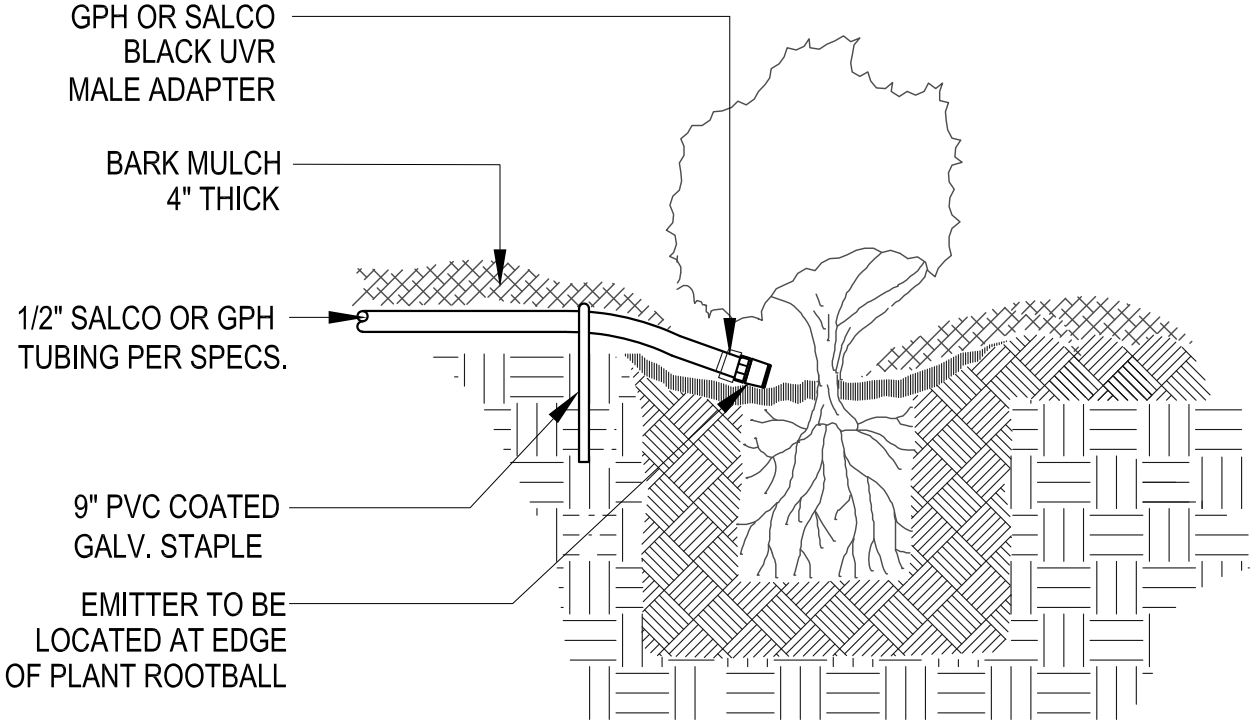
HESPERIA
Recreation & Park District

POINT TO POINT LATERAL LAYOUT

IR-30

2014





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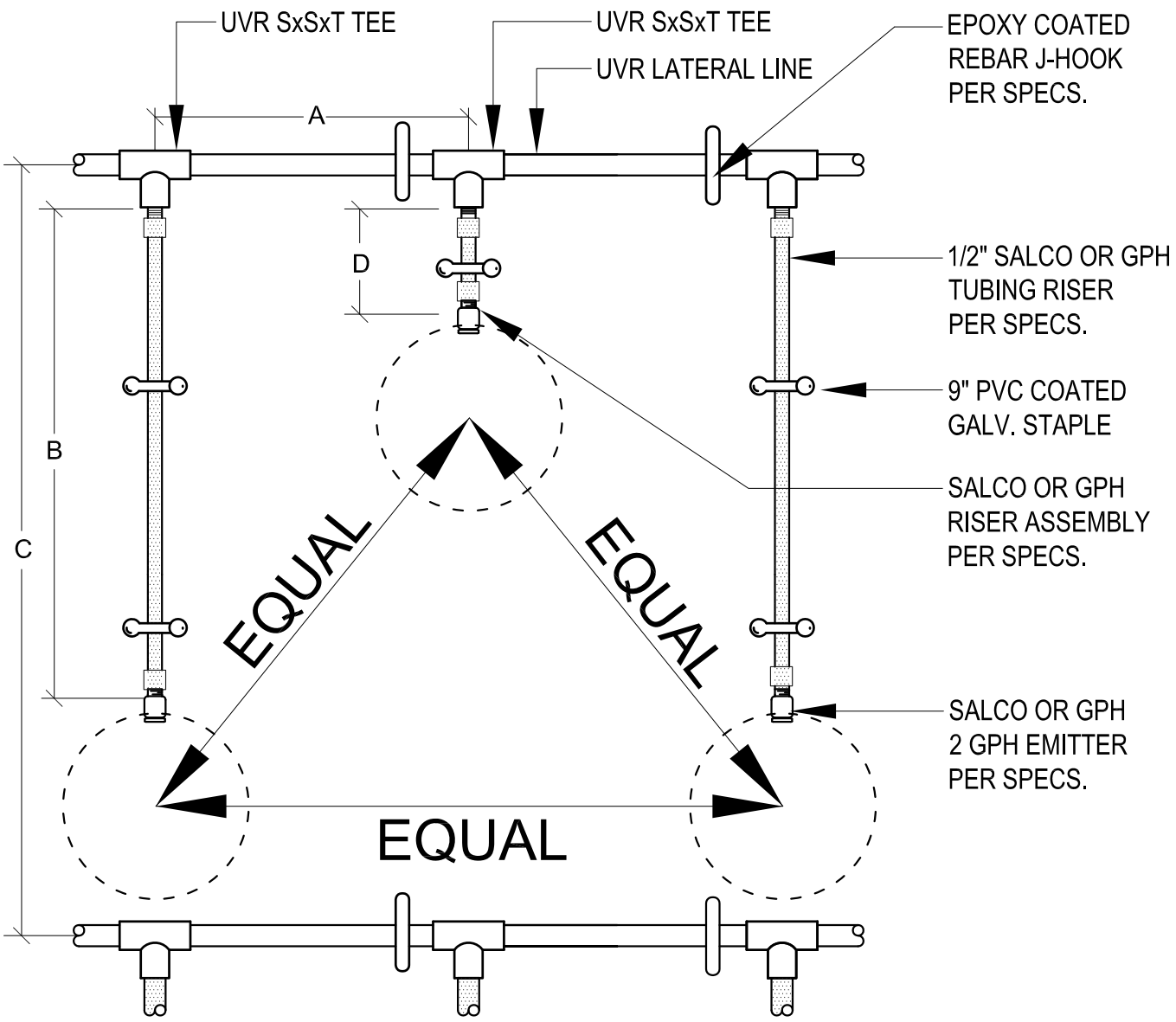
EMITTER ASSEMBLY SECTION VIEW

IR-31

2014



PLANT SPACING	A	B	C	D
2' O.C.	18"	32"	42"	12"
3' O.C.	18"	42"	5'0"	12"
4' 0.C.	24"	54"	7'0"	12"
5' O.C.	30"	64"	8'8"	12"

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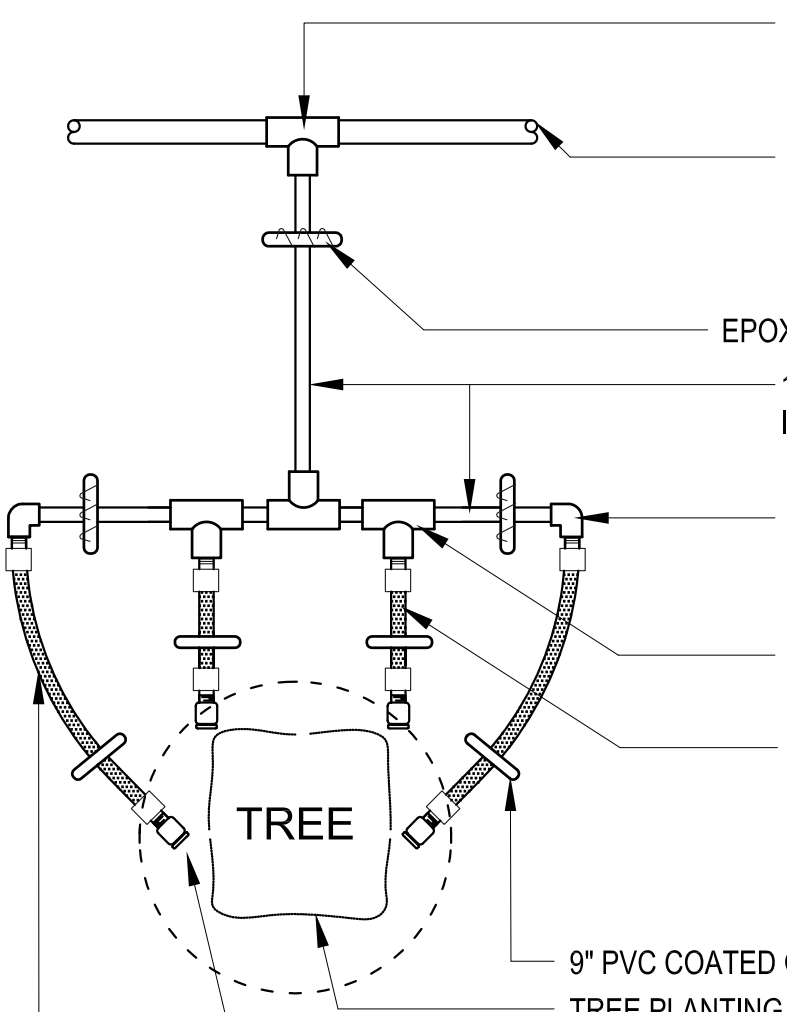
SHRUB EMITTER ASSEMBLY LAYOUT

IR-32

2014



CONNECTION TO PVC LATERAL LINE WITH SCH 40 UVR TEE SLIP X SLIP

3/4" MIN. SCH 40 UVR PVC LATERAL LINE INSTALL PARALLEL TO FACE OF SLOPE WITH NO ELEVATION CHANGE OVER 18"

EPOXY COATED REBAR J-HOOK PER SPECS.

1/2" SCH 40 UVR PVC PIPING AS REQ'D. INSTALL PERPENDICULAR TO SLOPE

SCH 40 UVR PVC ELL SLIP X FT

SCH 40 UVR PVC TEE SLIP X FT

1/2" X 12" SALCO OR GPH FLEXIBLE TUBING RISER ASSEMBLY WITH MALE ADAPTERS ON EACH END

9" PVC COATED GALV. STAPLE

TREE PLANTING PER PLANTING PLANS

LOW VOLUME DRIP EMITTER PER SPECS. AND PLAN SEE DRIP SCHEDULE BELOW:

1/2" SALCO OR GPH FLEXIBLE TUBING RISER ASSEMBLY WITH MALE ADAPTERS ON EACH END. LENGTH AS REQ'D. TO CENTER EMITTER AROUND ROOTBALL

NOTES:

1. ALL TREES SHALL RECEIVE THE NUMBER OF DRIP EMITTERS SHOWN BELOW.

   5 AND 15 GALLON TREES - 3 DRIP EMITTERS
   24" BOX TREES - 4 DRIP EMITTERS
   36" BOX TREES - 5 DRIP EMITTERS
   48" BOX TREES - 6 DRIP EMITTERS

2. DRIP EMITTERS SHALL BE PLACED TO DRIP DIRECTLY ADJACENT TO TREE ROOTBALL.
3. ALL IRRIGATION SHALL BE COMPLETELY INSTALLED PRIOR TO PLANTING.

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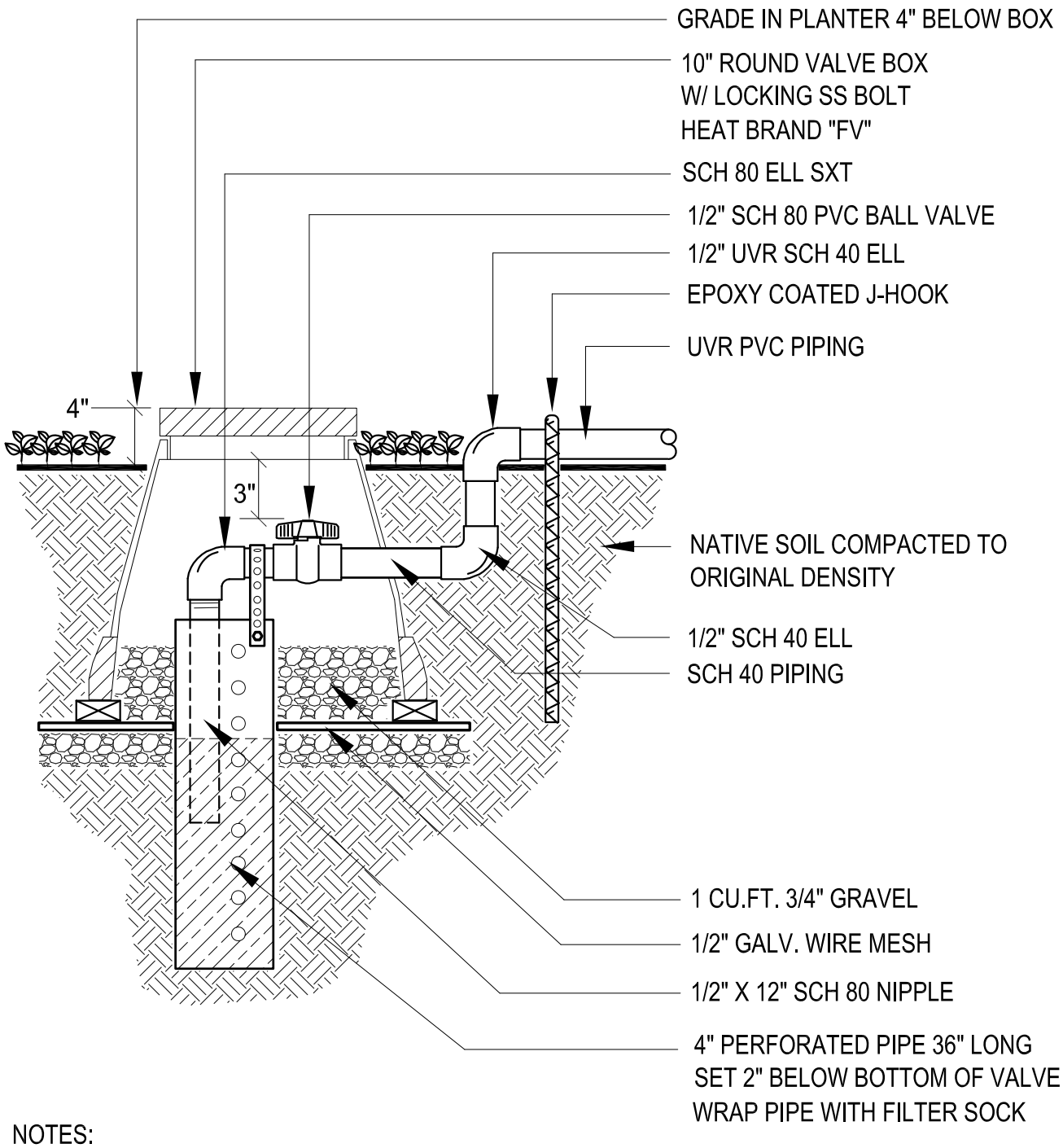
TREE EMITTER ASSEMBLY LAYOUT

IR-33

2014



NOTES:

1. PROVIDE 3" CLEARANCE BETWEEN VALVE & BOX
2. PROVIDE 3 EA. CONCRETE BRICKS UNDER VALVE BOX (TYP.)
3. SECURE END OF FLUSH LINE PIPING TO 4" DRAIN PIPE WITH PLUMBER'S TAPE

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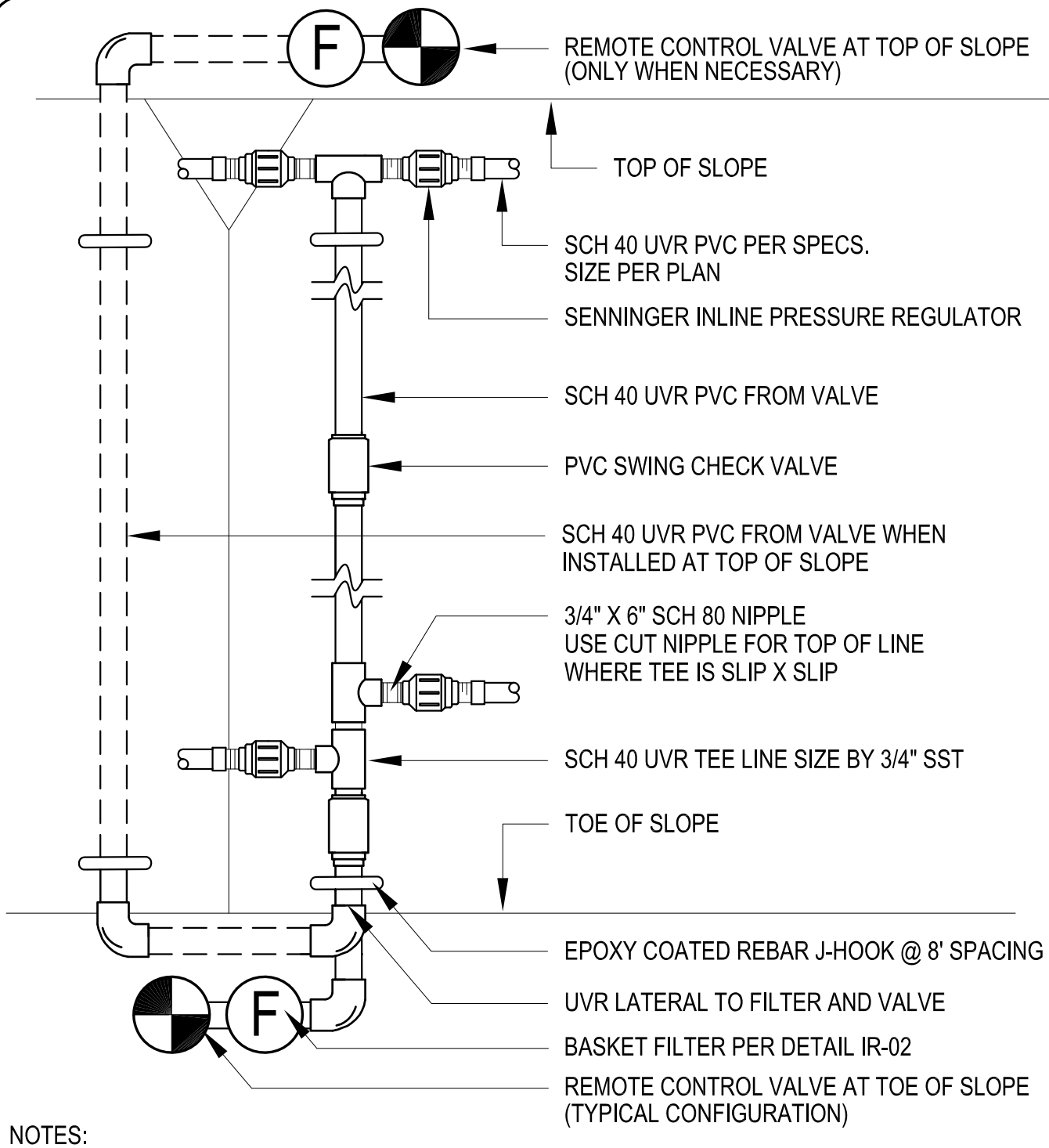
FLUSH VALVE ASSEMBLY

IR-34

2014



NOTES:

1. FLUSH LATERAL LINES COMPLETELY BEFORE INSTALLATION OF PRESSURE REGULATORS
2. ALL PIPING SHALL BE PRIMED PRIOR TO GLUE APPLICATION PER SPECS.

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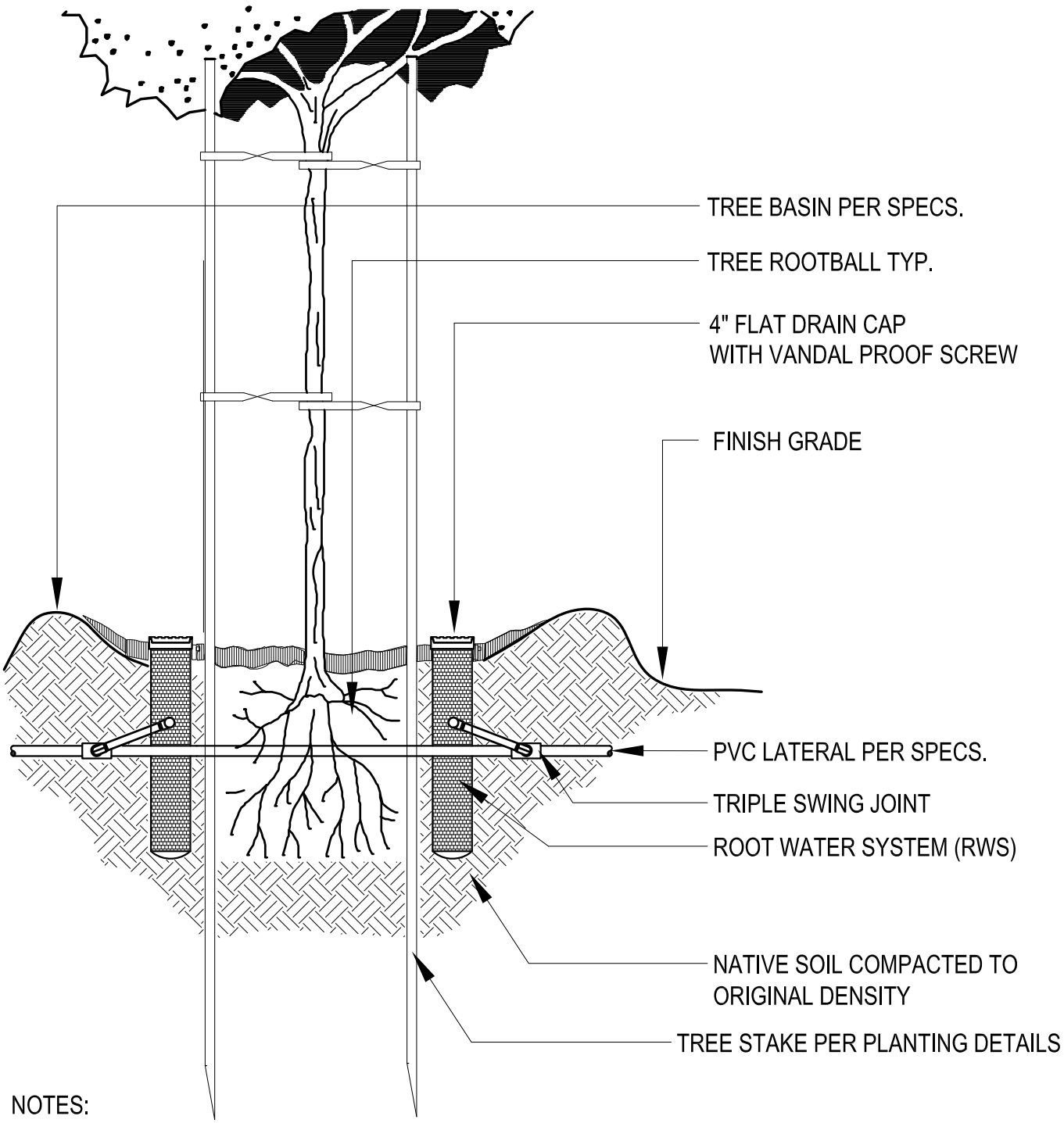
CHECK VALVE & PRESSURE REG.

IR-35

2014



NOTES:

1. ROOT WATERING SYSTEMS SHALL ONLY BE USED WHEN POINT TO POINT IRRIGATION IS NOT USED
2. PROVIDE TWO RWS PER TREE WITH 1 GPM BUBBLER WHEN DRIP IS NOT SPECIFIED
3. PROVIDE PERFORATED PVC PIPE PER PLANTING DETAIL PL-03 IN ADDITION TO RWS

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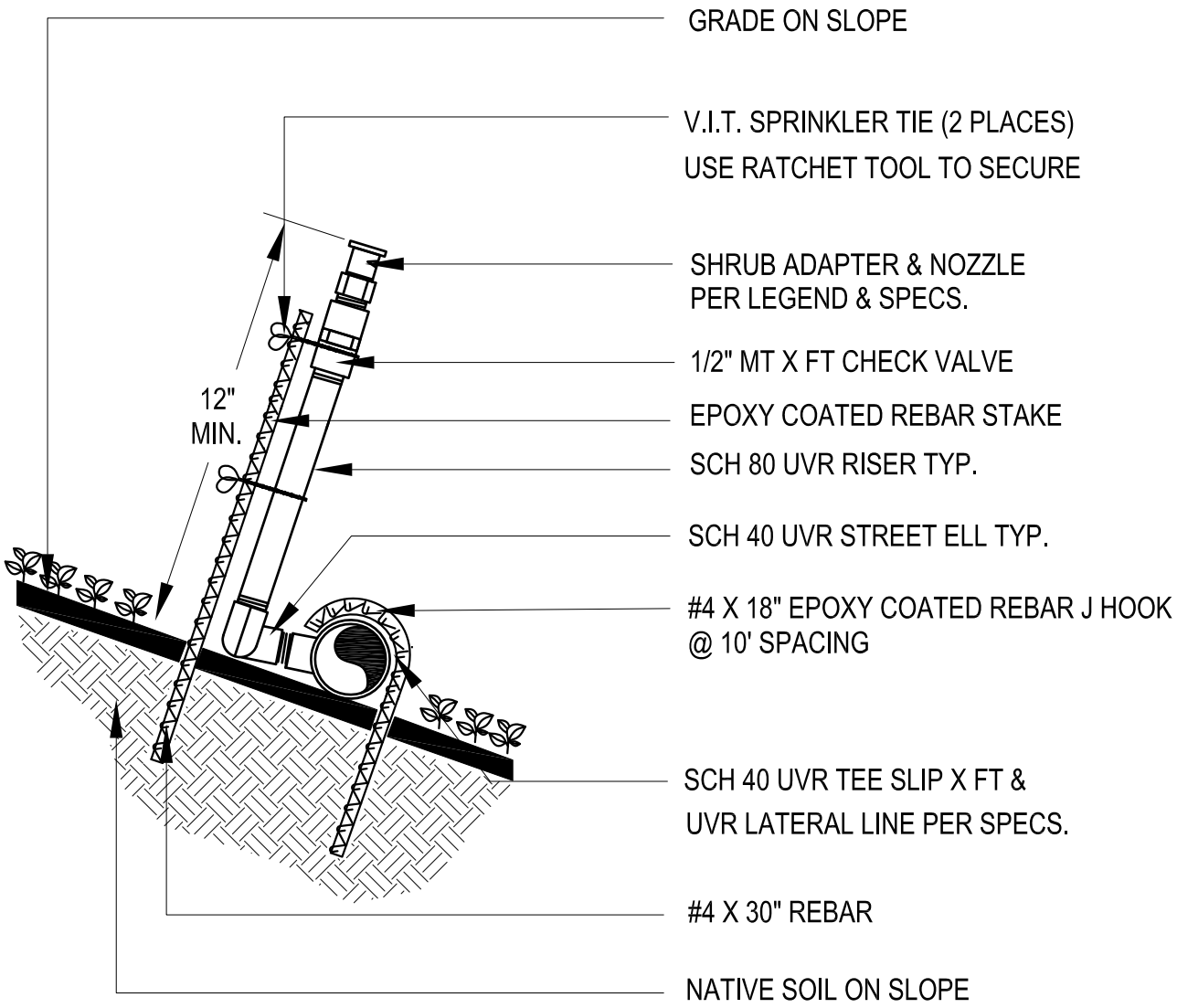
TREE ROOT WATERING SYSTEM

IR-36

2014



NOTES:

1. USE 3/4" TEFLON TAPE AT ALL SCH 40 ELLS
2. INSTALL RISERS PERPENDICULARLY PLUMB TO ADJACENT GRADE
3. INSTALL RISERS 12" FROM WALL OR FENCE
4. ADJUST NOZZLES TO PREVENT OVERSPRAY ONTO HARDSCAPE
5. USE POP-UP SPRAY HEADS @ TOE OF SLOPE & WITHIN 8' OF SIDEWALK, TURF OR CURBING

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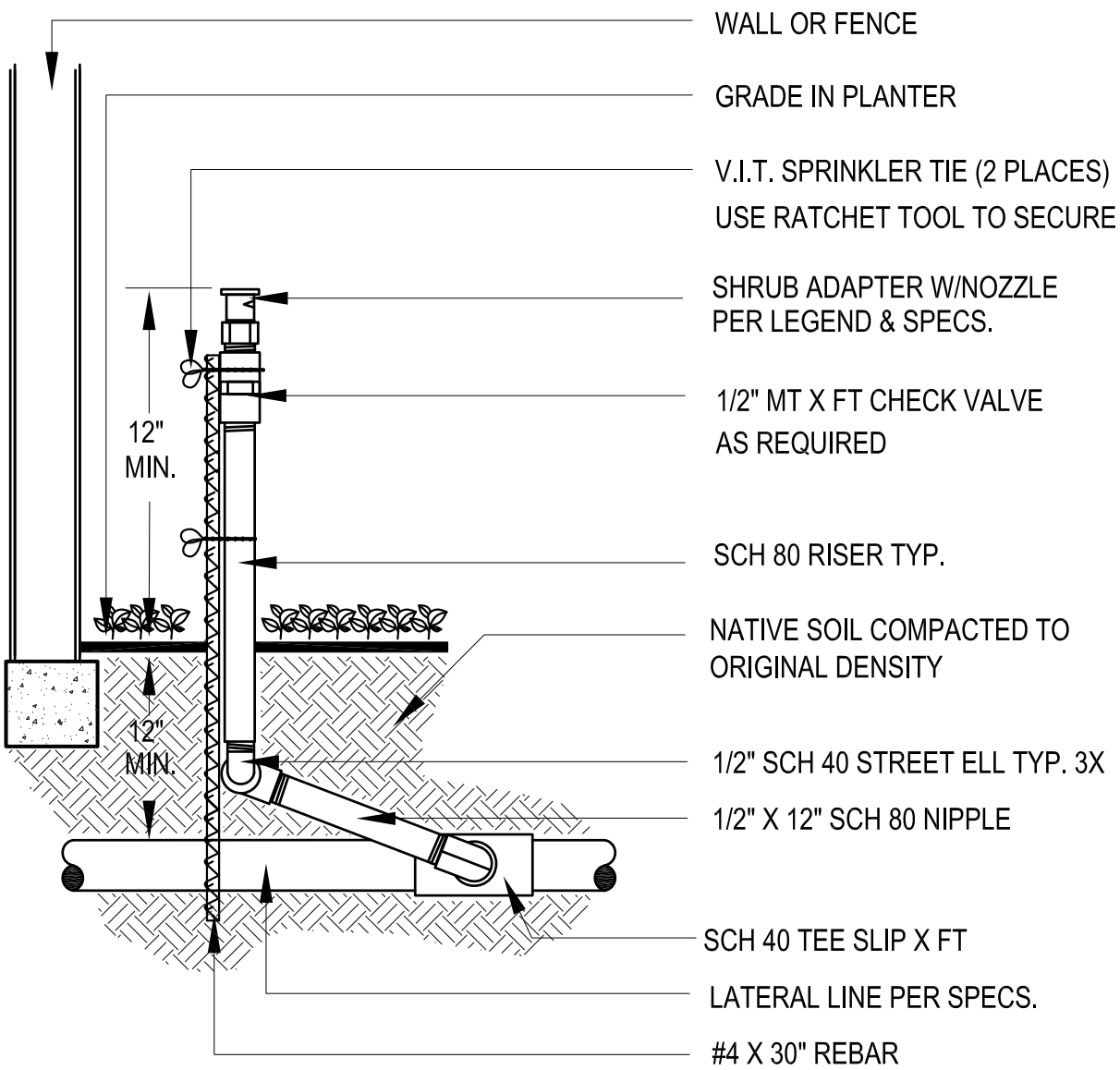
SHRUB SPRAY ON GRADE

IR-37

2014



NOTES:

1. USE 3/4" TEFLON TAPE FOR ALL THREADED FITTINGS
2. INSTALL RISERS PERPENDICULARLY PLUMB TO ADJACENT GRADE
3. INSTALL RISERS 12" FROM WALL OR FENCE
4. ADJUST NOZZLES TO PREVENT OVERSPRAY ONTO HARDSCAPE
5. USE POP-UP SPRAY HEADS WITHIN 8' OF SIDEWALK, TURF OR CURBING

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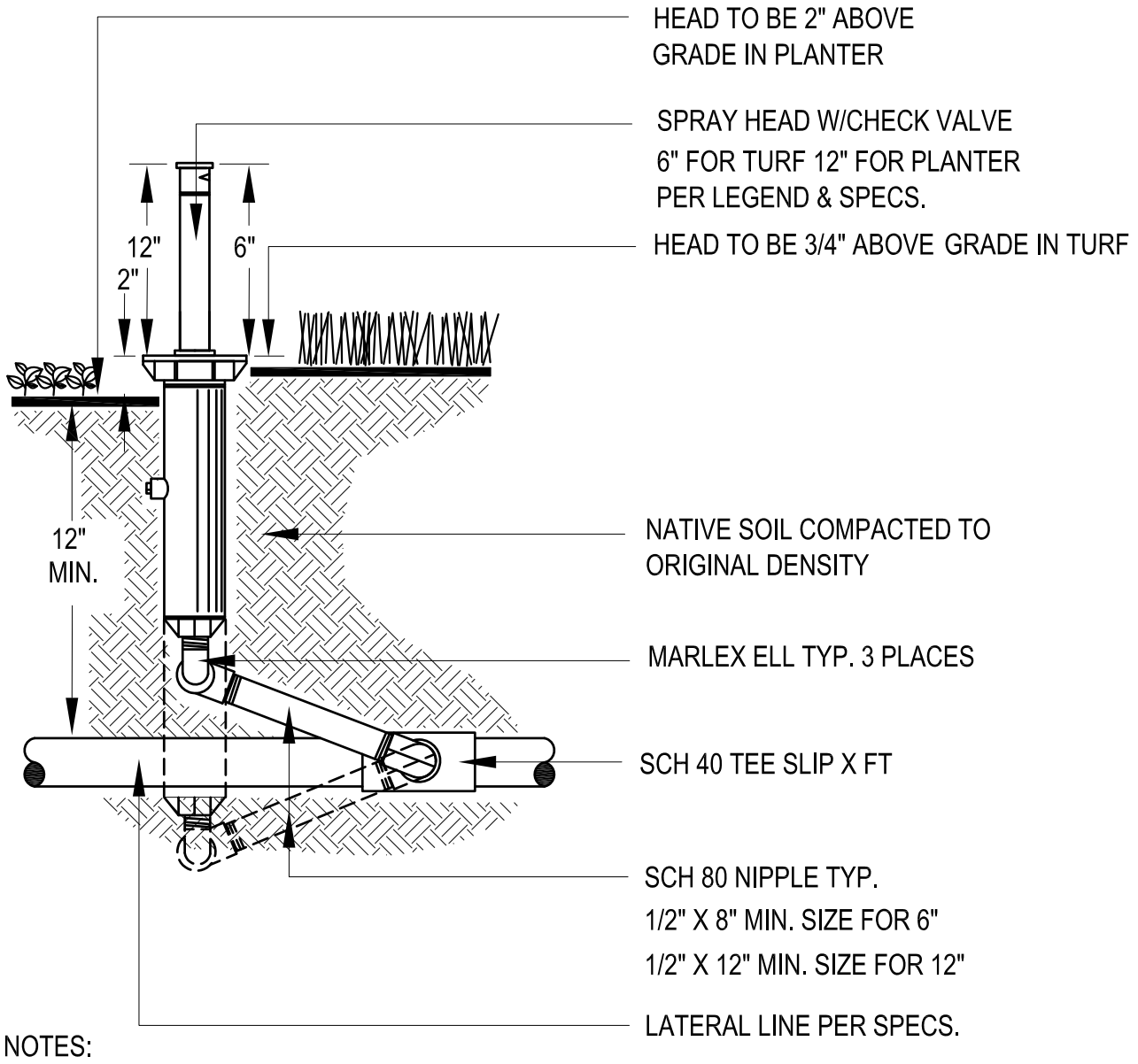
SHRUB SPRAY ON RISER

IR-38

2014



NOTES:

1. USE 3/4" TEFLON TAPE WHERE ELL MEETS SCH 40 TEE
2. INSTALL HEADS PERPENDICULARLY PLUMB TO ADJACENT GRADE
3. ADJUST NOZZLES TO PREVENT OVERSPRAY ONTO HARDSCAPE
4. INSTALL HEADS 2" FROM HARDSCAPE EDGE IN TURF AREAS WHERE ALLOWED PER AB 1881
5. INSTALL HEADS 6" FROM WALLS IN PLANTER AREAS WHERE ALLOWED PER AB 1881
6. ALL HEADS ADJACENT TO CONCRETE SURFACE SHALL BE FLUSH TO TOP OF CONCRETE

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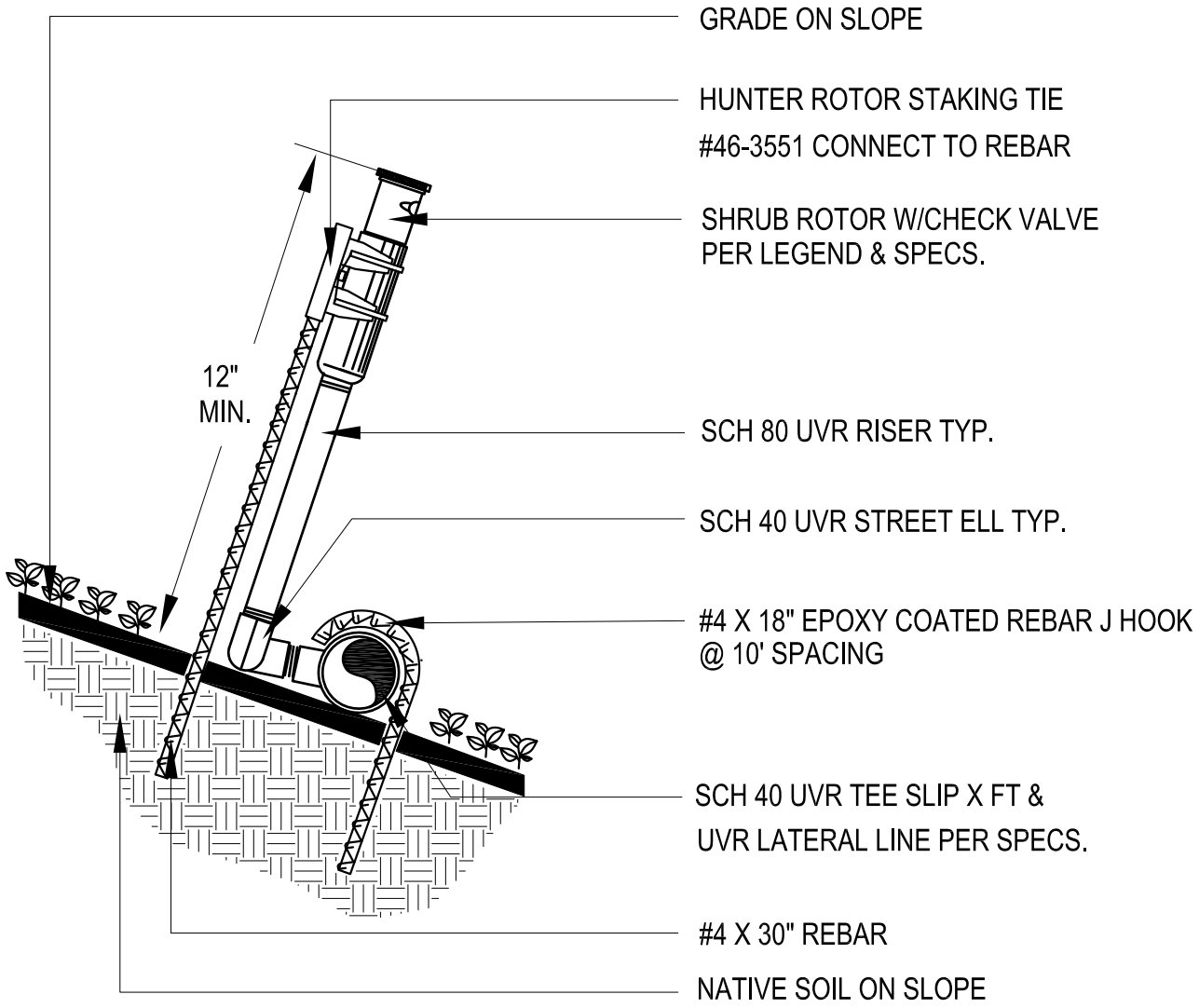
POP-UP SPRAY HEAD

IR-39

2014



NOTES:

1. USE 3/4" TEFLON TAPE AT ALL SCH 40 ELLS
2. INSTALL RISERS PERPENDICULARLY PLUMB TO ADJACENT GRADE
3. INSTALL RISERS 12" FROM WALL OR FENCE
4. ADJUST NOZZLES TO PREVENT OVERSPRAY ONTO HARDSCAPE
5. USE POP-UP ROTORS @ TOE OF SLOPE & WITHIN 8' OF SIDEWALK, TURF OR CURBING

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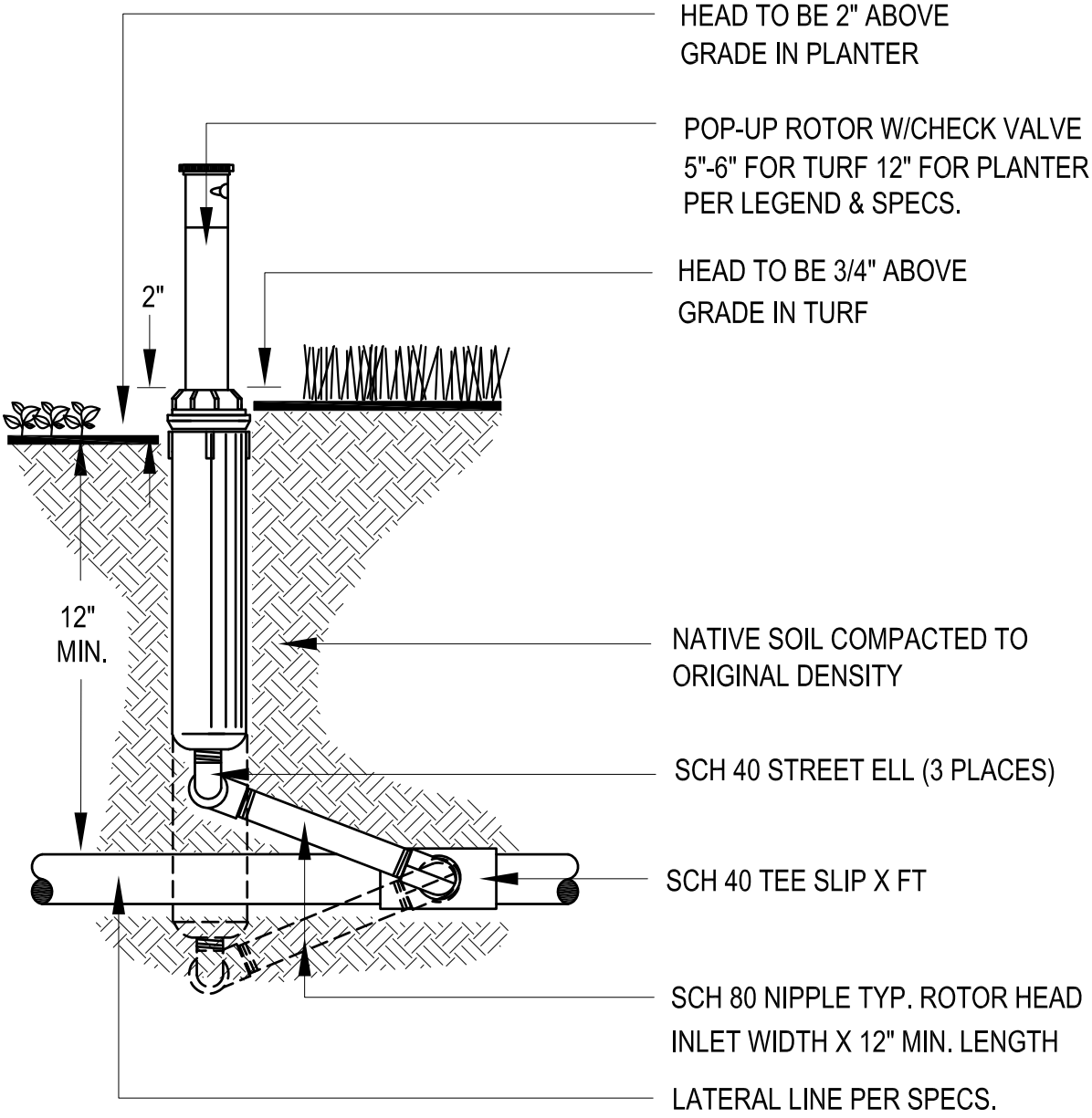
Recreation & Park District

SHRUB ROTOR ON GRADE

IR-40

2014



NOTES:

1. USE 3/4" TEFLON TAPE AT ALL SCH 40 ELLS
2. INSTALL HEADS PERPENDICULARLY PLUMB TO ADJACENT GRADE
3. ADJUST NOZZLES TO PREVENT OVERSPRAY ONTO HARDSCAPE
4. INSTALL HEADS 4" FROM HARDSCAPE EDGE IN TURF AREAS WHERE ALLOWED PER AB 1881
5. INSTALL HEADS 4" FROM HARDSCAPE EDGE IN PLANTER AREAS WHERE ALLOWED PER AB 1881
6. INSTALL 12" POP-UP ROTORS FOR TURF AREAS WITHIN BOTTOM OF DETENTION BASINS

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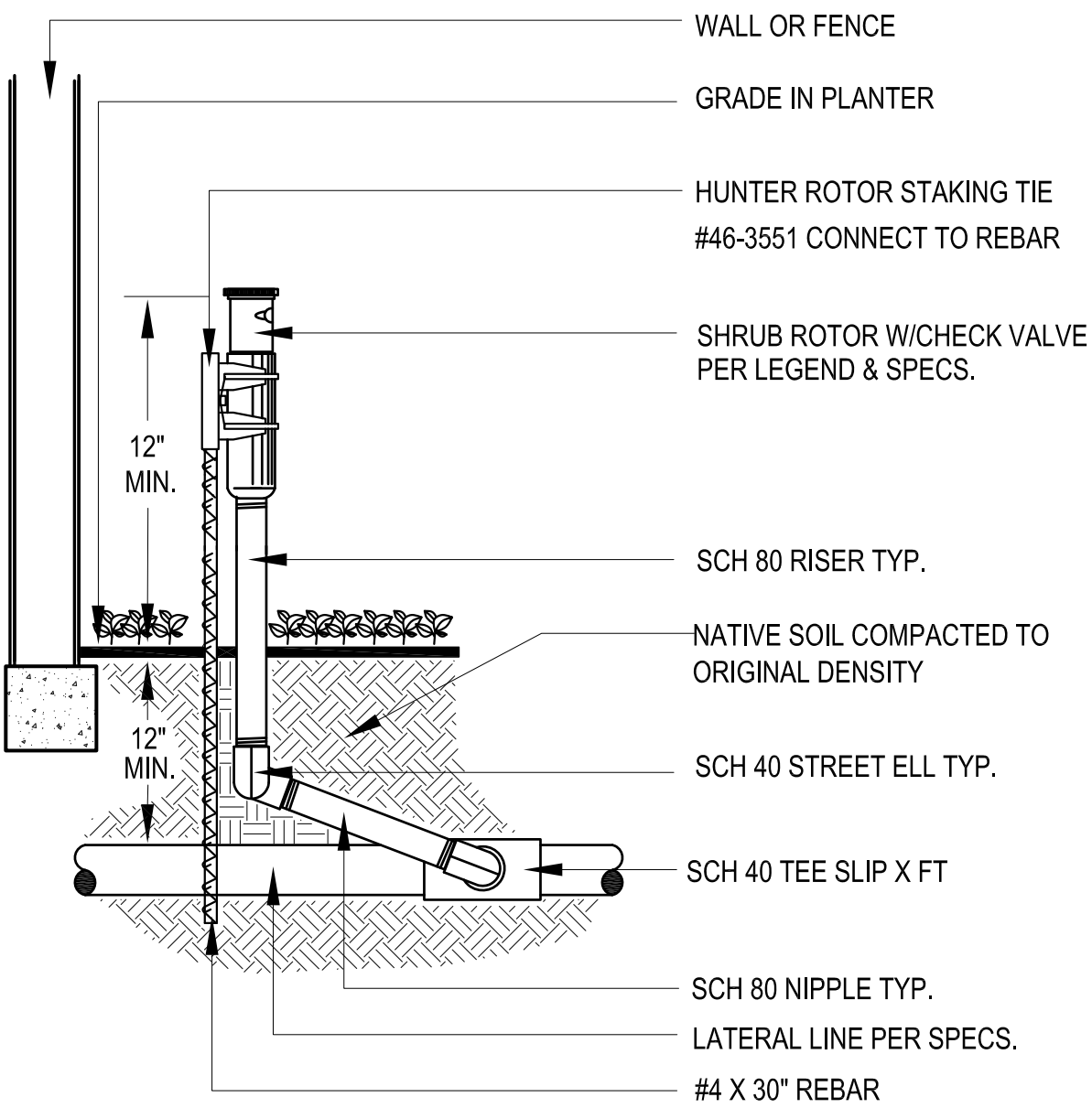
Recreation & Park District

POP-UP ROTOR HEAD

IR-41

2014



NOTES:

1. USE 3/4" TEFLON TAPE AT ALL SCH 40 ELLS
2. INSTALL RISERS PERPENDICULARLY PLUMB TO ADJACENT GRADE
3. INSTALL RISERS 12" FROM WALL OR FENCE
4. ADJUST NOZZLES TO PREVENT OVERSPRAY ONTO HARDSCAPE
5. USE POP-UP ROTORS WITHIN 8' OF SIDEWALK, TURF OR CURBING

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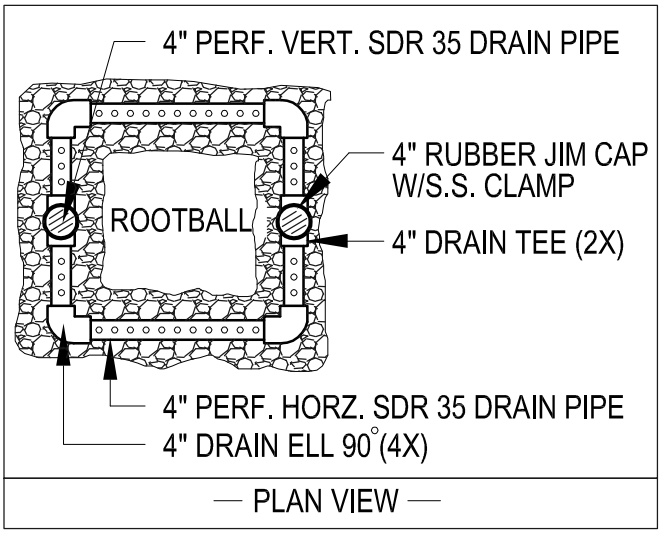
SHRUB ROTOR ON RISER

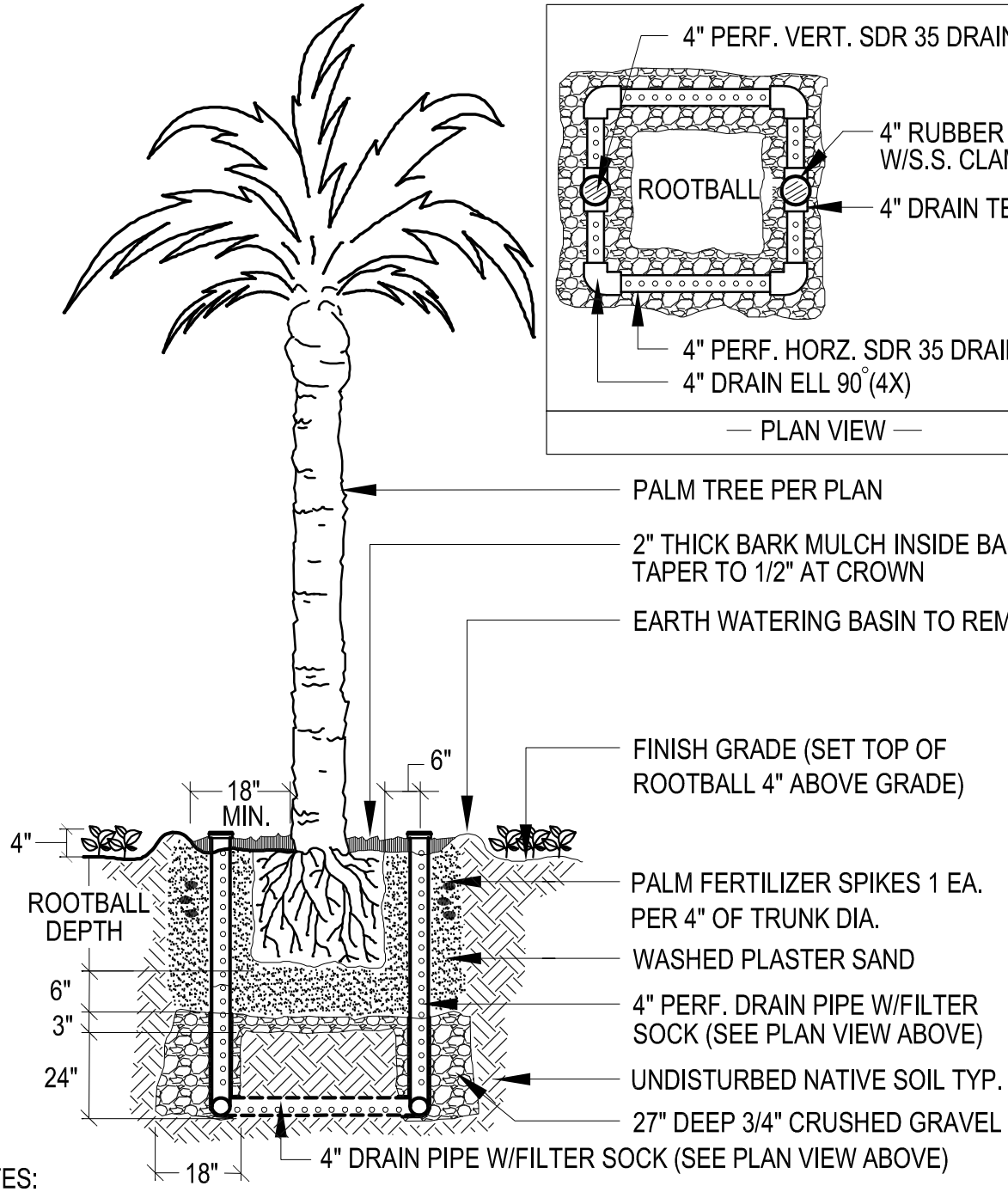
IR-42

2014

Standard Planting Details

Detail No.	Detail Description	Drawing Name
PL-01	Palm Tree Planting	PL-001-2014.dwg
PL-02	Tree Planting	PL-002-2014.dwg
PL-03	Tree Planting on Slope	PL-003-2014.dwg
PL-04	Shrub Planting	PL-004-2014.dwg
PL-05	Shrub Planting on Slope	PL-005-2014.dwg
PL-06	Vine Planting	PL-006-2014.dwg
PL-07	Bark Mulch	PL-007-2014.dwg
PL-08	Root Barrier	PL-008-2014.dwg
PL-09	Ground Cover Planting	PL-009-2014.dwg
PL-10	Tree Guying	PL-010-2014.dwg
PL-11	Boulder Placement	PL-011-2014.dwg





NOTES:

1. ALL BACKFILL TO BE WATER JETTED DURING PLANTING
2. ALL FRONDS TO BE TIED TOGETHER PRIOR TO PLANTING
3. FRONDS TO BE PRUNED AS DIRECTED BY THE DISTRICT
4. ALL BREATHER AND BUBBLER TUBES SHALL HAVE FILTER SOCK

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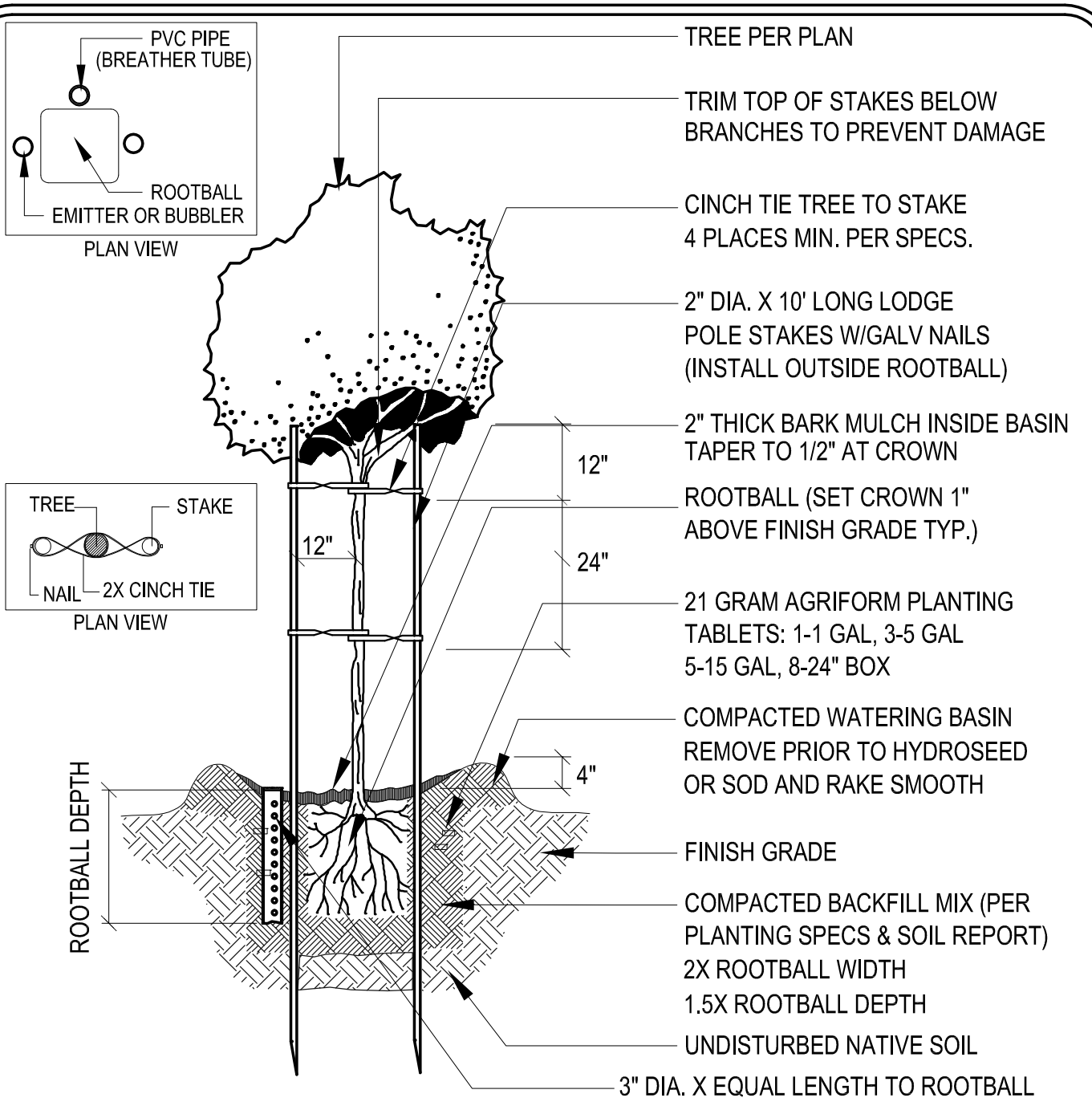
Recreation & Park District

PALM TREE PLANTING

PL-01

2014



NOTES:

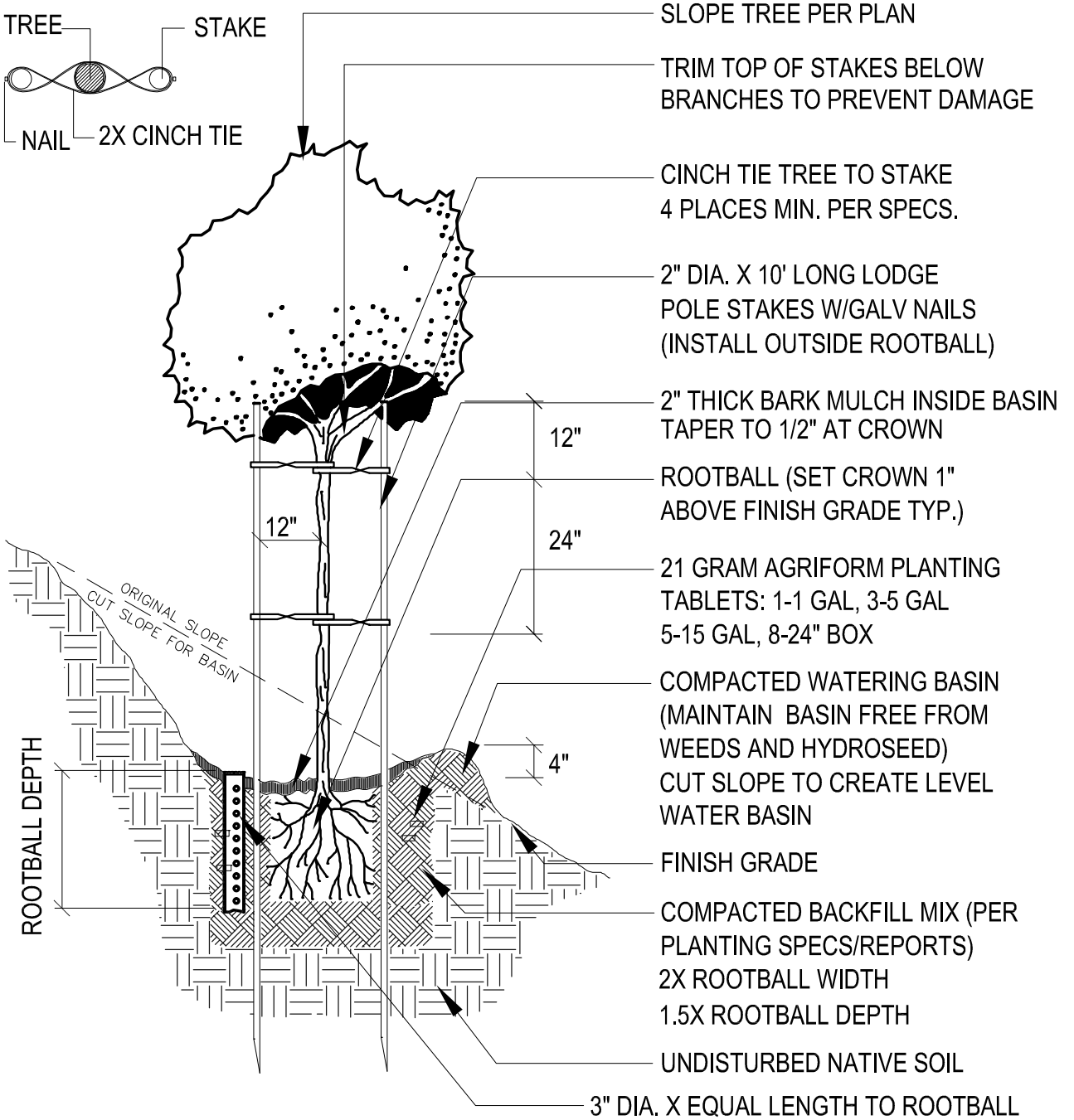
1. PROVIDE 3 STAKES FOR MULTI-TRUNK TREES TYP.
2. PROVIDE 3" DIA. TREE STAKES WHEN REQUIRED PER SPECS.
3. V.I.T. TWIST BRACES SHALL BE REQUIRED FOR PROJECTS WITH WINDY CONDITIONS

HESPERIA
Recreation & Park District

TREE PLANTING

PL-02

2014



NOTES:

1. PROVIDE 3 STAKES FOR MULTI-TRUNK TREES TYP.
2. PROVIDE 3" DIA. TREE STAKES WHEN REQUIRED PER SPECS.
3. V.I.T. TWIST BRACES SHALL BE REQUIRED FOR PROJECTS WITH WINDY CONDITIONS

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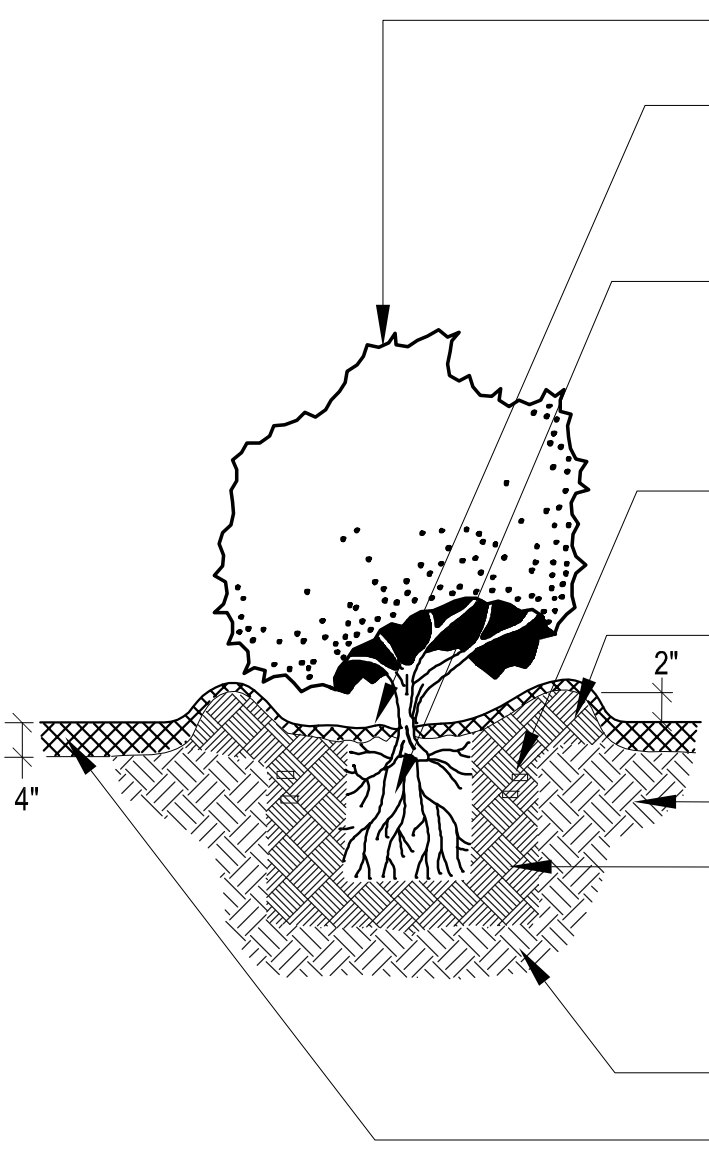
TREE PLANTING ON SLOPE

PL-03

2014



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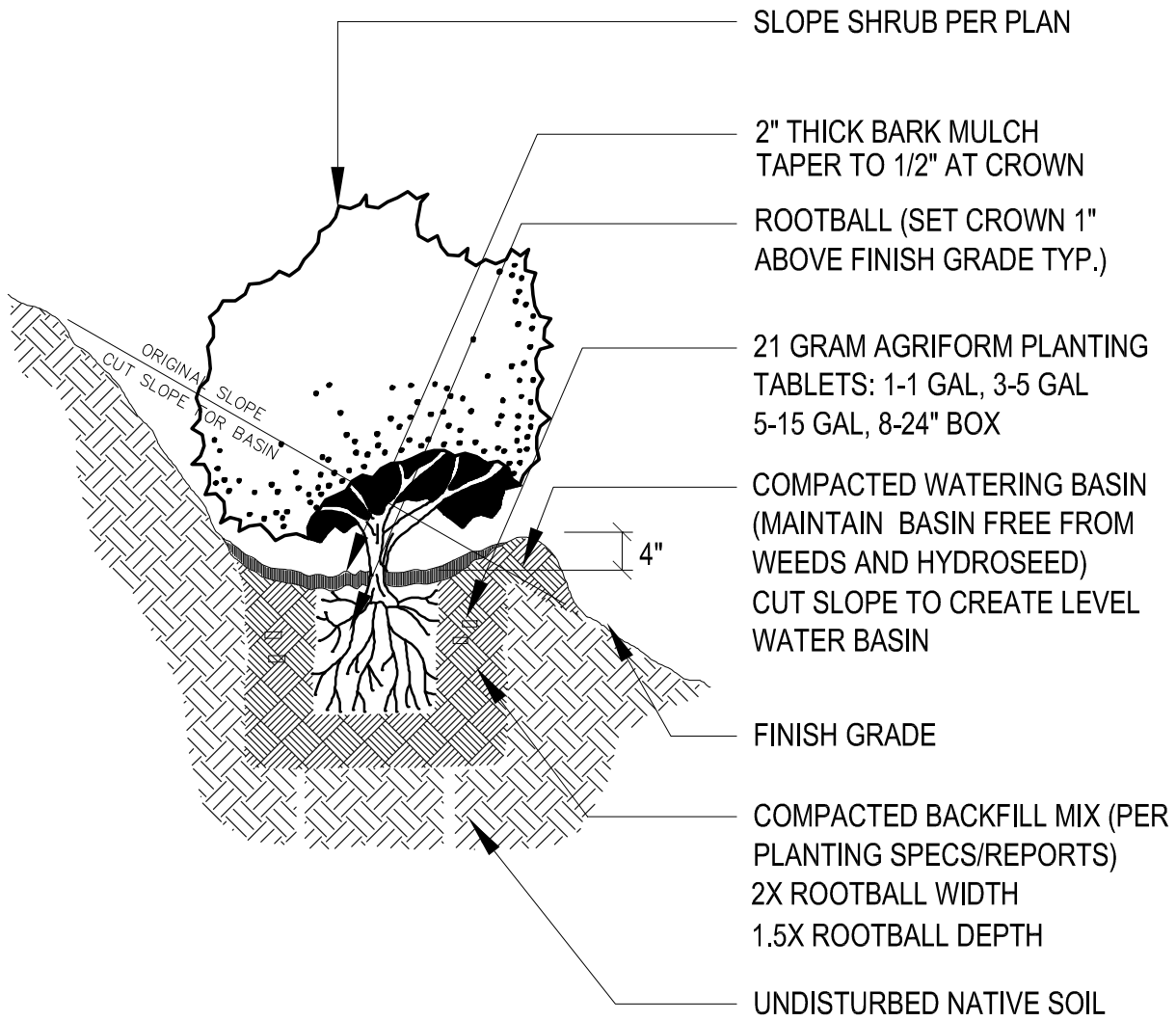
SHRUB PLANTING

PL-04

2014



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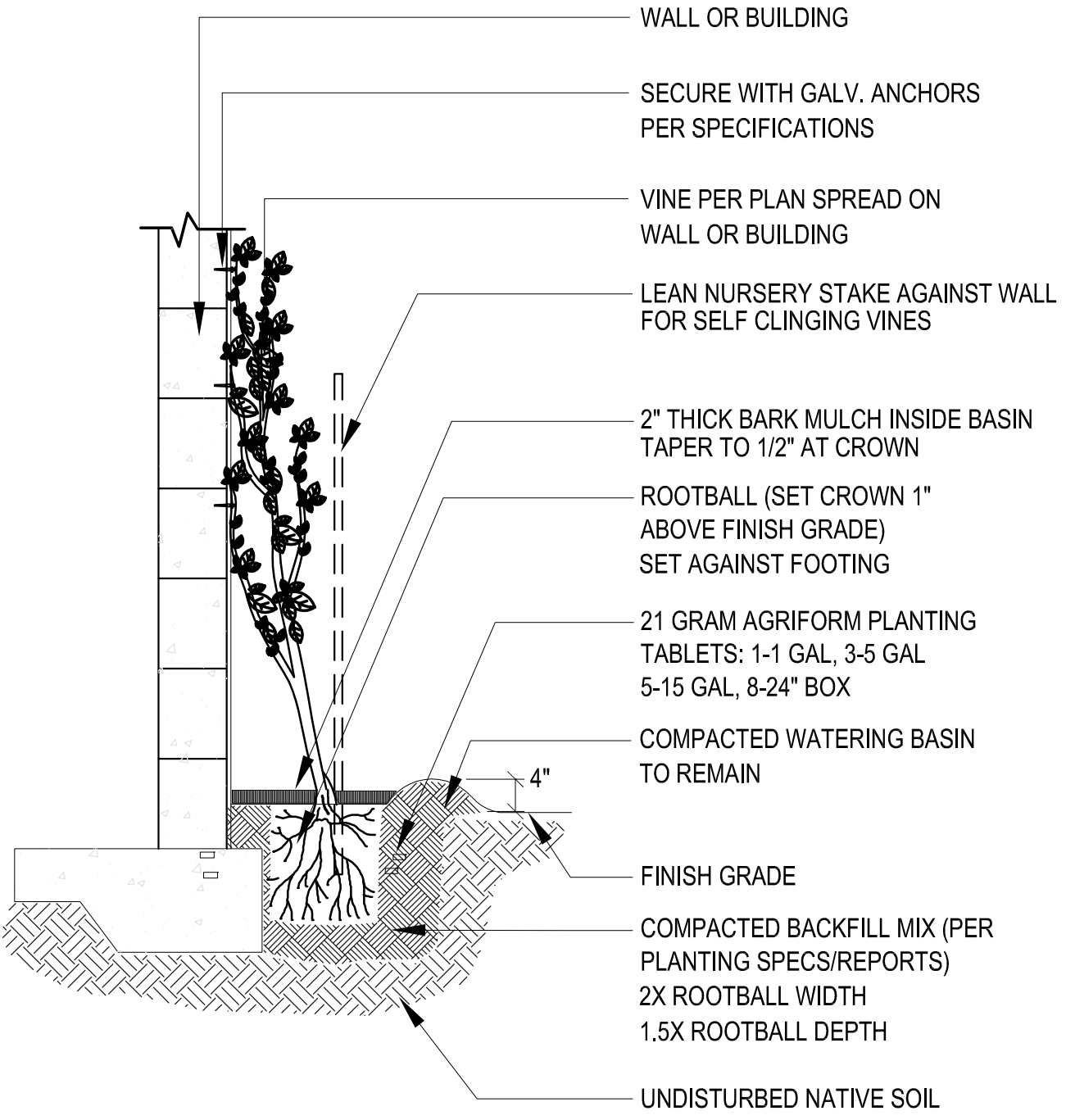
SHRUB PLANTING ON SLOPE

PL-05

2014



NOTE:

VINES MUST BE PLANTED ALONG ALL TRACT WALLS AT 10' SPACING TYP.
VINES THAT ARE NOT SELF CLINGING SHALL BE SECURED WITH TIE WIRE PER SPECIFICATIONS

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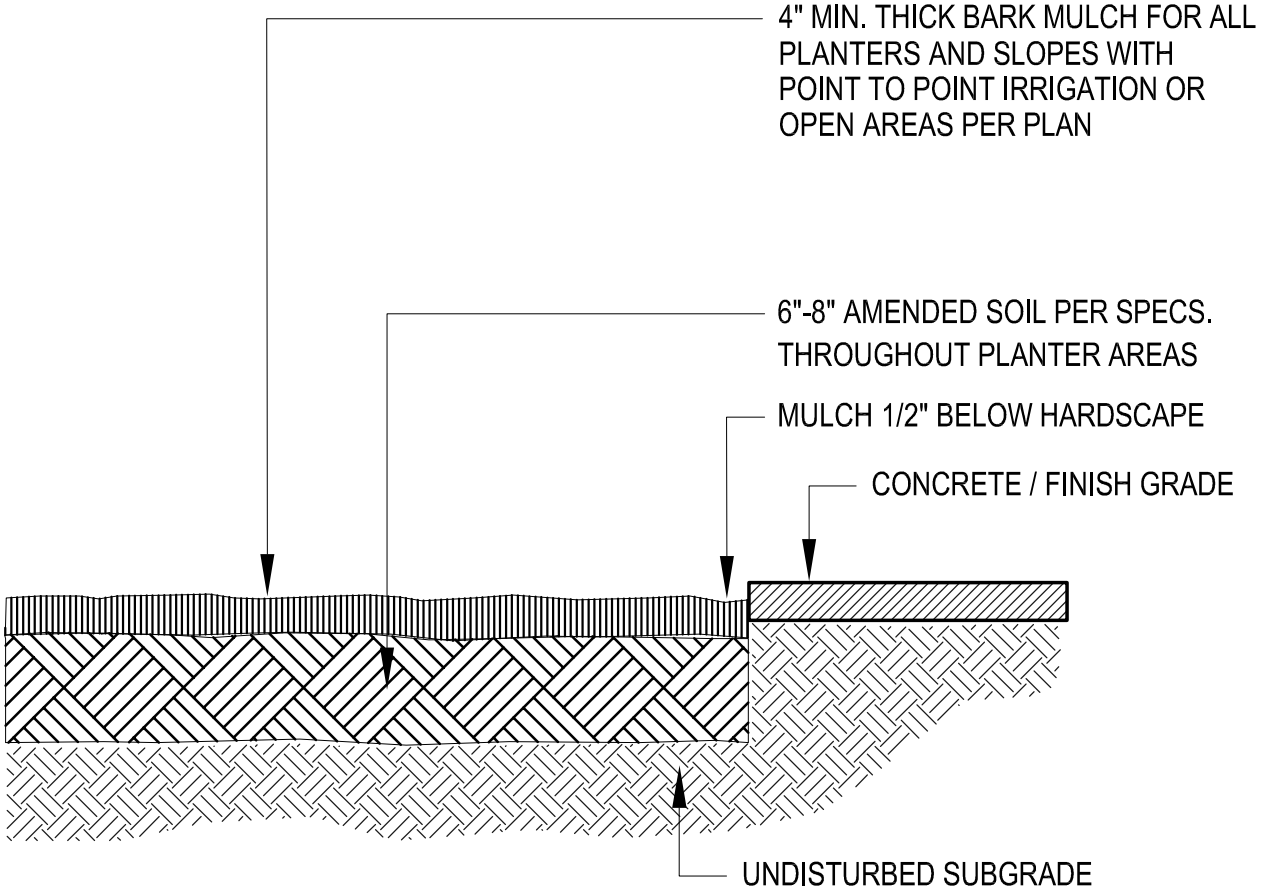
Recreation & Park District

VINE PLANTING

PL-06

2014



NOTES:

1. ALL PLANTERS AND SLOPES SHALL RECEIVE BARK MULCH
2. PROVIDE 2" THICK BARK MULCH WHEN OVERHEAD IRRIGATION IS USED
3. BARK MULCH SAMPLE MUST BE SUBMITTED FOR APPROVAL PRIOR TO PURCHASE
4. BARK MULCH SHALL BE 1/2" BELOW ALL WALKING/DRIVING SURFACES
5. BARK MULCH SHALL BE LARGE ENOUGH TO AVOID BEING BLOWN AWAY BY WINDS OR ROUTINE MAINTENANCE BUT SHALL NOT BE LARGER THAN 4"

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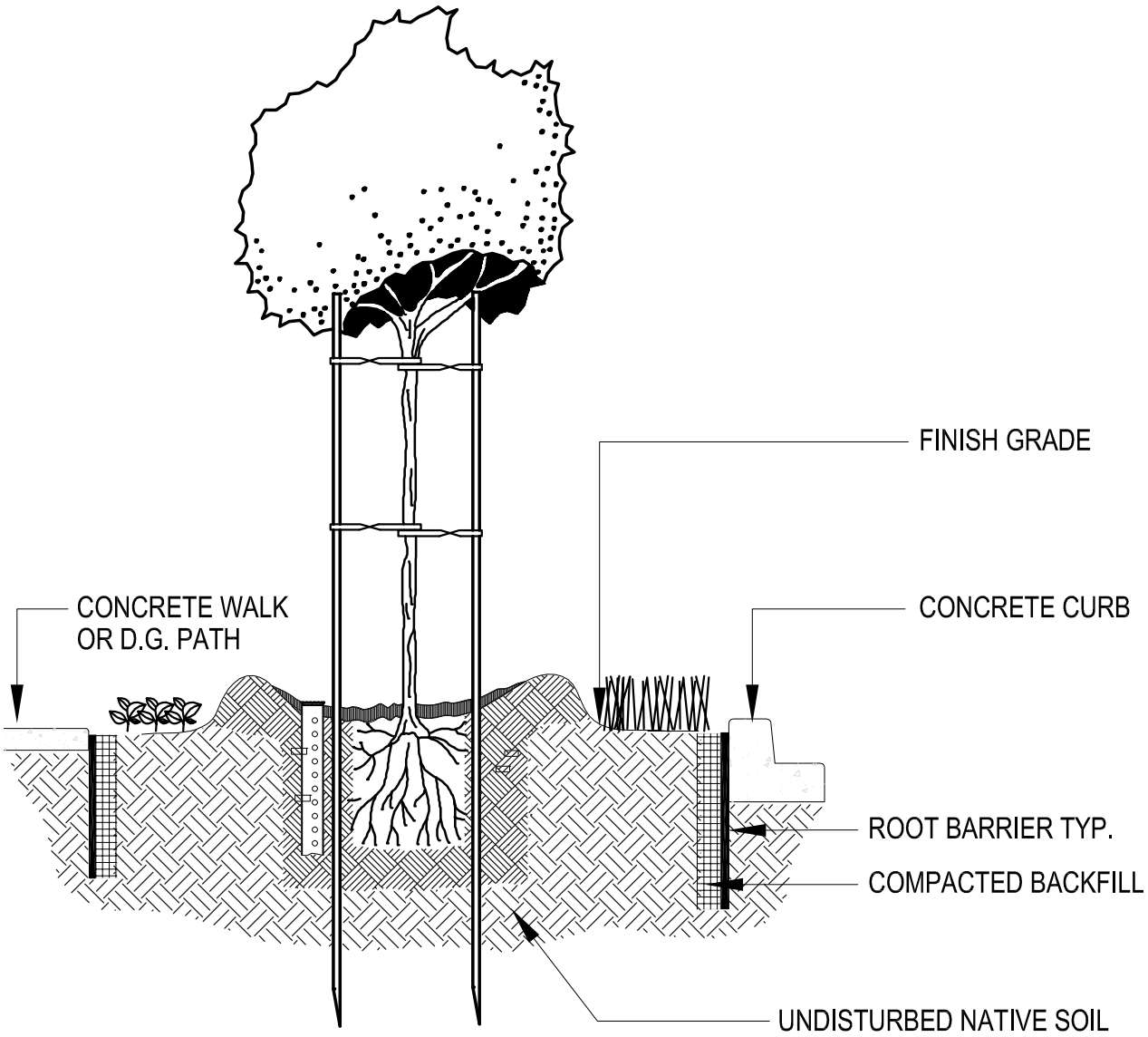
BARK MULCH

PL-07

2014



NOTES:

1. ROOT BARRIERS SHALL BE MANUFACTURED BY "DEEP ROOT" OR APPROVED EQUAL
2. ROOT BARRIERS MUST BE INSTALLED FOR ANY TREE WITHIN 8' OF ANY HARDSCAPE SURFACE OR DECOMPOSED GRANITE PATH
3. TOP OF ROOT BARRIERS MUST BE FLUSH WITH GRADE
4. PROVIDE 24" BELOW GRADE ROOT BARRIERS ADJACENT CURBS
5. PROVIDE 18" BELOW GRADE ROOT BARRIERS ADJACENT SIDEWALKS
6. PROVIDE BIO-BARRIER FOR TREES AS INDICATED IN SPECS.

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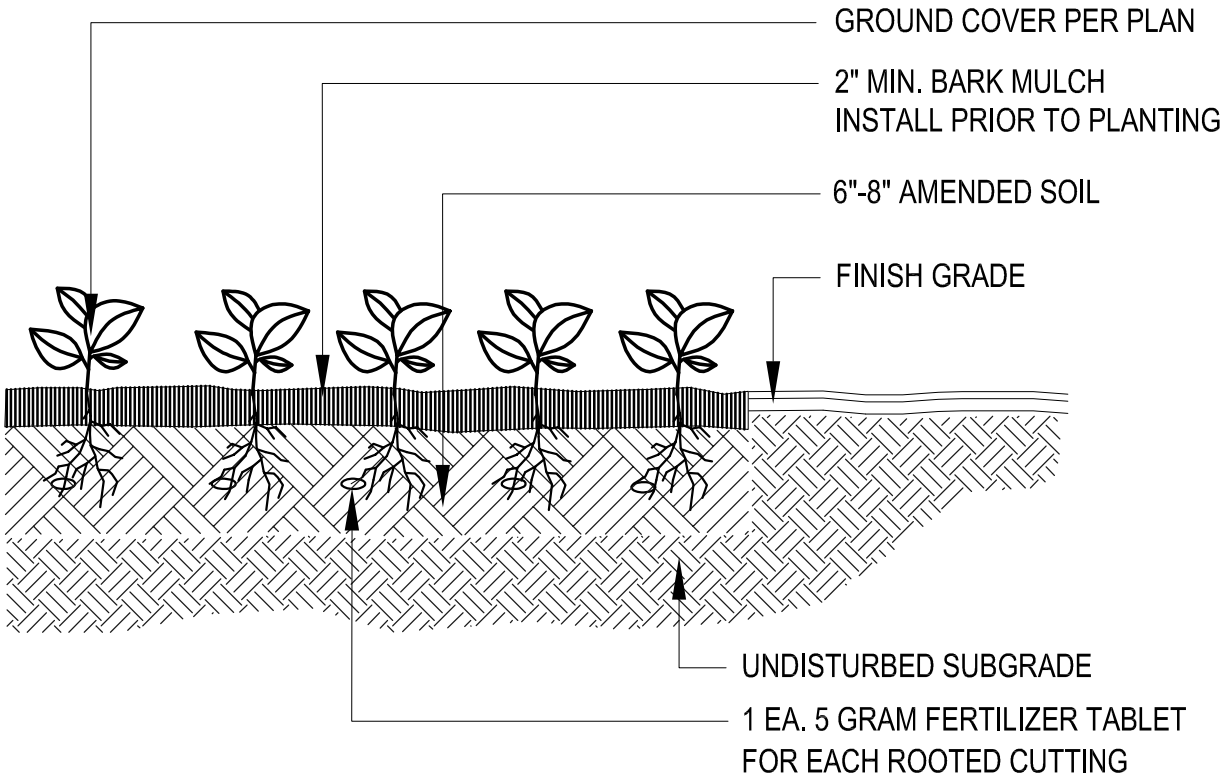
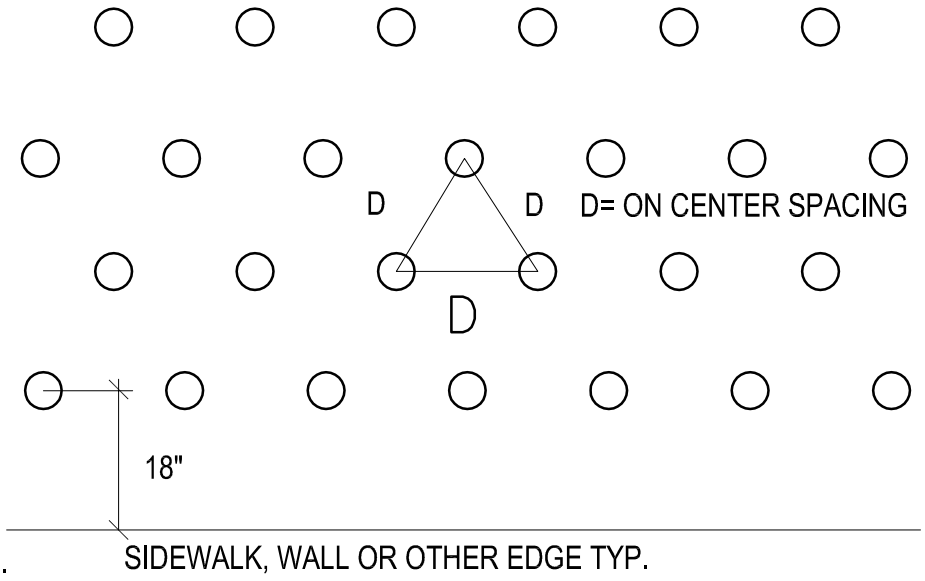
ROOT BARRIER

PL-08

2014





NOTES:

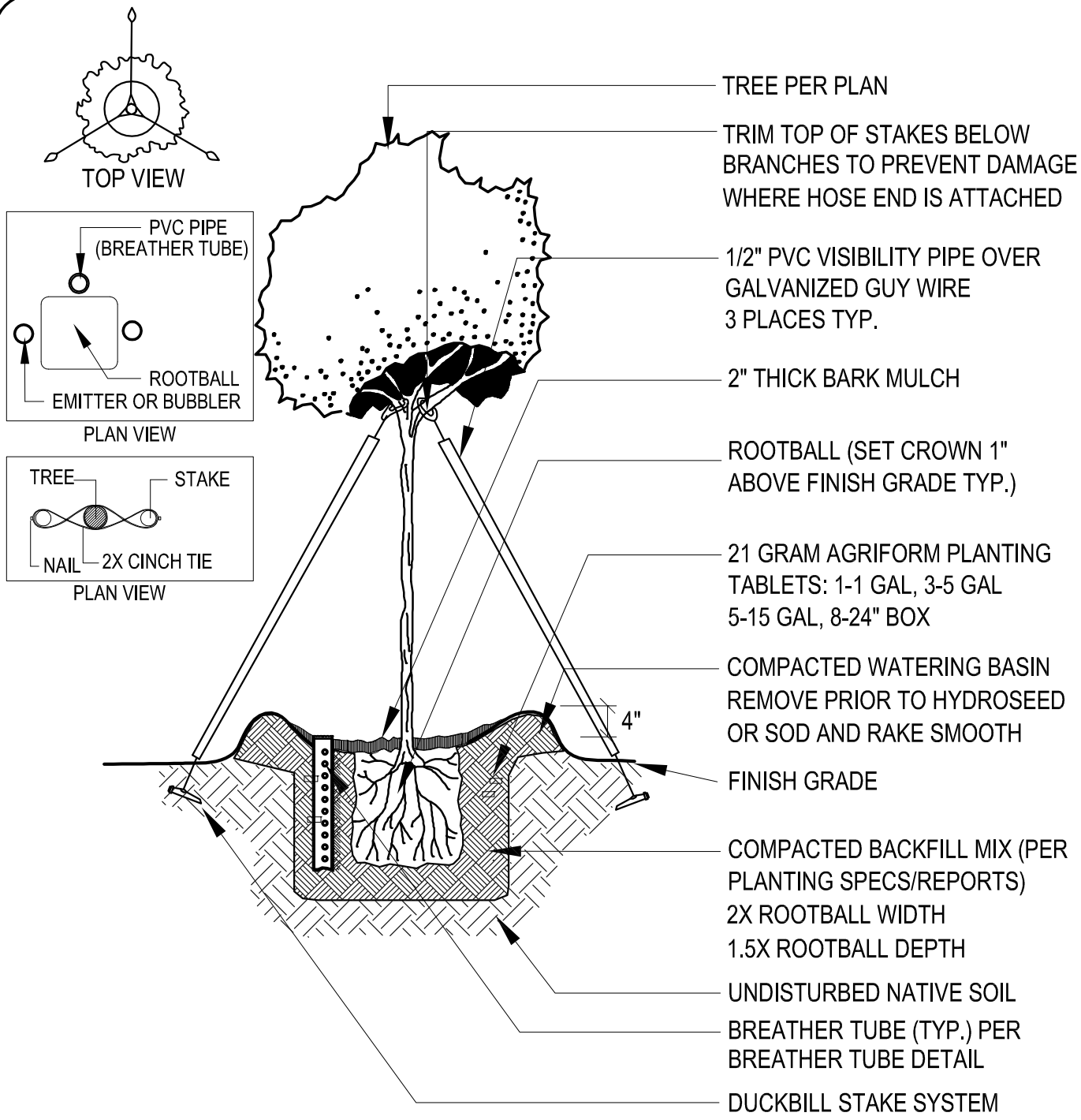
1. ALL ROOTED CUTTINGS SHALL BE PLANTED 12" O.C. OR CLOSER
2. ALL 1 GAL. PLANTS FOR DRIP SHALL BE PLANTED 36" O.C. OR CLOSER

HESPERIA
Recreation & Park District

GROUNDCOVER PLANTING

PL-09

2014



NOTE:

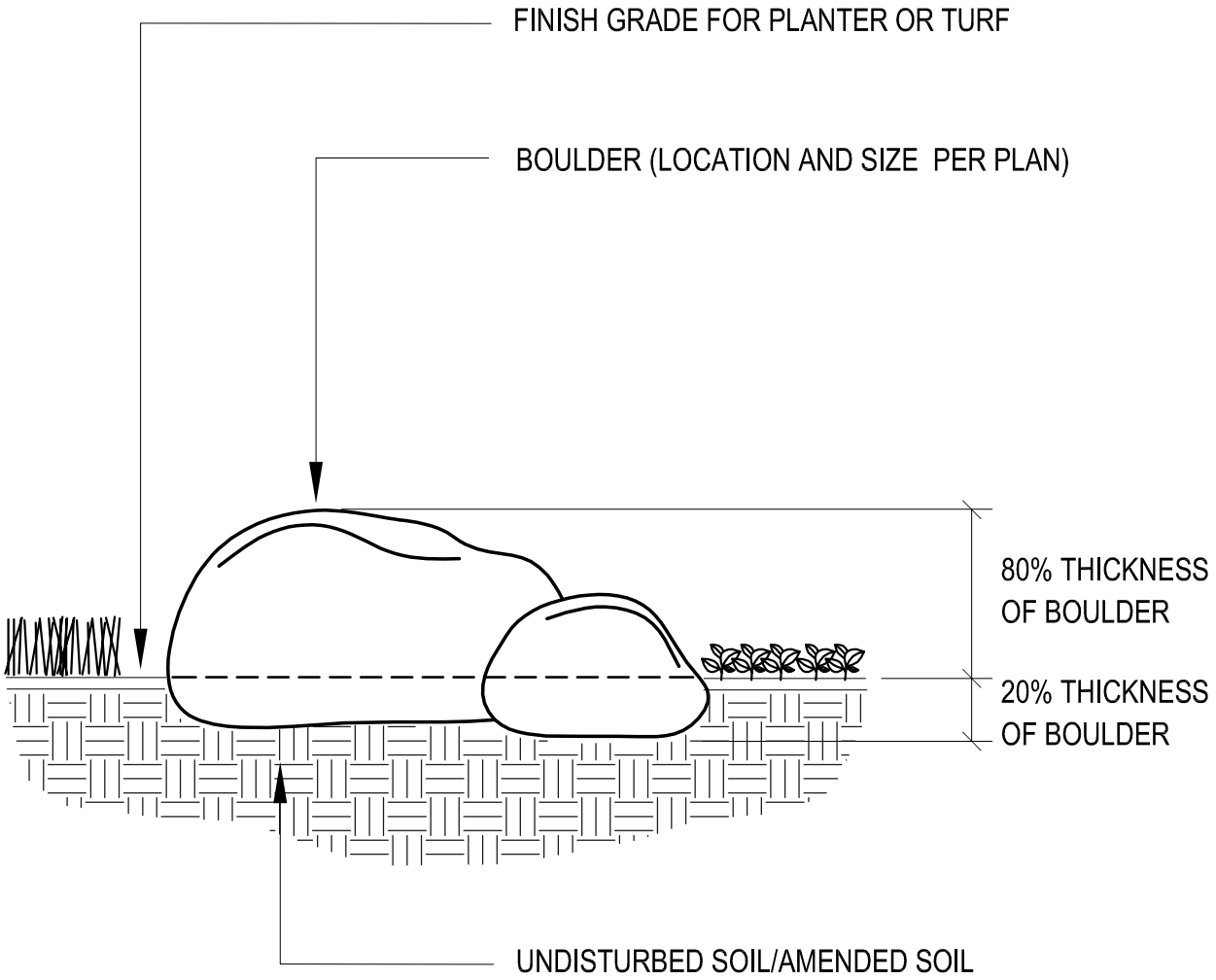
1. ALL TREES 48" BOX AND LARGER MUST BE GUYED PER THIS DETAIL

HESPERIA
Recreation & Park District

TREE GUYING

PL-10

2014



NOTES:

1. BOULDER SIZE AND TYPE SHALL BE APPROVED PRIOR TO PURCHASE OF MATERIAL
2. ALL BOULDER LOCATIONS SHALL BE APPROVED BY THE DISTRICT

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BOULDER PLACEMENT

PL-11

2014