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Where Values Make The Difference

Site Development Plan Review Guide/Checklist for Landscape & Irrigation In Medians/Rights-of-Way

This checklist should be used as a guide in the preparation of median landscape plans and/or for right of way landscape, that will be maintained by the City, for Site Development review. This list is not exhaustive and additional requirements or deficiencies may be noted during the plan review process.

The requirements referred to on the checklist can be found within the City Zoning Code and [Technical Design Manual #8](#) available on the internet at www.chandleraz.gov

See the [Civil Engineering & Site Development Improvement Plans Submittal Form & Requirements](#) forms for all plan submittal requirements.

NOTES REQUIRED ON PLANS

1. Place these notes on the **Landscape Plans**:

- All trees within vehicular sight distance/visibility clear zones shall have a vertical canopy clearance/clear trunk to 6' above the nearest curb elevation, all shrubs in this area may not reach a mature height over 24". *TDM#8 Section C (2)(F)*
- Trees must maintain a minimum 6' setback from the face of curb (in areas effected by future turn lanes, trees may be placed no less than 4' from face of curb). *TDM#8 Section C (2)(G)*
- The landscape will be maintained by the developer or contractor for a period of ninety (90) days following a preliminary inspection and acceptance by the City. If not healthy at the end of the maintenance period, the maintenance shall be continued until the plant material is approved by the City. *TDM#8 Section B (18)*
- Contractor must submit a decomposed granite sample to City Landscape Maintenance & Design Coordinator prior to ordering. *TDM#8 Section C (4)(A)*
- All rock groundcover areas shall be sprayed with pre-emergent herbicide by a licensed applicator as part of installation as follows (a minimum of three (3) applications are required): *TDM#8 Section C (4)(B)*
 - Prior to the application of granite: ½ gallon per acre
 - After granite application: ½ gallon per acre
 - Prior to final acceptance: 1 gallon per acre
 - * The City shall be furnished with written documentation of the schedule of application dates.
- Add Note **(IN 18 pt. BOLD)** on all plan sheets: **PRIOR TO ANY LANDSCAPE OR IRRIGATION CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR/DEVELOPER SHALL NOTIFY THE CITY LANDSCAPE MAINTENANCE & DESIGN COORDINATOR AT 480-782-3428 AT LEAST 48 HOURS IN ADVANCE OF INSTALLATION WORK.**
- **INSPECTIONS**
The City's individual Use Department will inspect and approve the work at the following stages of completion. Any work completed without these inspections must be removed prior to acceptance of that phase of work. These stages are:
 - Completion of all trenching and installation of all main lines prior to back filling, including the vacuum breaker, quick couplers, electric valves and any isolation valves. The main line shall be pressure tested for thirty (30) minutes at this inspection.
 - Completion of installation of all control wires prior to backfilling.
 - Installation of all lateral valves, lines, and heads prior to backfilling.
TDM#8 Section B (24)
- Prior to any construction or utility work starting within a City right-of-way, which will affect existing City-owned and maintained landscaping or irrigation systems, there will be a meeting on site to show that the existing systems or landscaped areas are in proper repair and functioning. At the completion of the construction work there will be another meeting and inspection on site. The same areas and systems will again be reviewed. Any damage to the landscaping or to the irrigation system will be the responsibility of the general contractor or utility company and must be repaired to the satisfaction of the City within five (5) working days. If this work is not completed within the allotted time, the City will make the repairs or corrections and money will be deducted or billed to the general contractor on the project. The individuals who should be represented at these on-site meetings shall be: a representative from the contractor, a representative from the engineering firm or City responsible for the construction inspection and a representative from the City Street Department.
- Finish grade of landscape areas (top of turf or D.G.) must be graded to 1 ½" below concrete or other paved surfaces, See Section 1903(6)(c)(11), Zoning Code.
- **Add current City of Chandler [Civil Engineering Reclaimed Water Notes](#) to irrigation plan when using effluent water for irrigation.** See link: http://www.chandleraz.gov/content/UDM_ReclaimedWaterNotes.pdf

• **Add certification to the cover sheet:**

I hereby certify that no tree or boulder is designed closer than six (6) feet to the face of public street curb.

Registered Landscape Architect

Date

DESIGN STANDARDS

2. Provide separate offsite landscape, irrigation and hardscape plans. Minimum scale is 1"=30' and to be submitted on 24" X 36" plan sheets. Include a vicinity map and sheet index on the cover sheet. See Section 1903(4), Zoning Code.
3. Show medians on civil plans. *TDM#8 Section C (2)(A)*
4. Show the location of existing and proposed plant materials on Landscape Plan. See Section 35-1903 (4)(c), Zoning Code.
5. Include plant schedule specifying graphic symbol, botanical and common names, planting size, number of plants and on-center spacing on each landscape sheet. See Section 35-1903(4)(d), Zoning Code.
6. Note the minimum caliper sizes and tree heights on the plant legend. All trees shall comply with the latest amended edition of the "[Arizona Nursery Association – Recommended Tree Specifications](http://www.azlca.com/uploads/documents/b-09_ana_tree-specs-revisions-33.pdf)" per ANA See Section 1903(6)(a), Zoning Code. See link: http://www.azlca.com/uploads/documents/b-09_ana_tree-specs-revisions-33.pdf
7. Include location of overhead and underground utilities, streetlights, signage, etc. Contact the appropriate utility for acceptable plant material species and location. *TDM#8 Section C (2)(B)*
8. All plant material must be selected from the [Arizona Department of Water Resources Low Water Use Plant List](#). Not all plant materials are appropriate for use within the public right-of-way. Palm trees, and lantana are prohibited. *TDM#8 Section C (1)(D)(1)*
9. No boulders greater than 8" in diameter are allowed in median. *TDM#8 Section C (1)(D)(2)*
10. In medians, provide a minimum tree density in landscape areas 8'-15' wide of one (1) tree per 30' of plantable median length. Medians greater than 15' wide will require increased tree densities. *TDM#8 Section C (1)(E)(1)(a)*
11. In back-of-curb frontage landscape right-of-way areas up to 20' wide, provide one (1) tree per thirty (30) linear feet. For areas wider than 20', increase the tree density by one (1) tree per eight hundred (800) square feet of increased area. *TDM#8 Section C (1)(F)*
12. Maximum spacing between trees is 100'. *TDM#8 Section C (1)(F)(2)*
13. Shrubs and groundcover must provide 50% coverage at maturity. *TDM#8 Section C (1)(G)*
14. Provide a minimum of two (2) and a maximum of five (5) tree species and a minimum of three (3) and a maximum of twelve (12) shrub/groundcover species per design area. *TDM#8 Section C (1)(H)*
15. Include contour lines showing gentle mounds and swales with 4:1 maximum slopes. In medians less than 8' in width, limit grade variations to 6" and less. *TDM#8 Section C (2)(D)*
NOTE: The height of the mounds must be considered when determining compliance with the following sight distance requirements. (Standard Detail C-246)
16. Refer to section C, 2-F, of the "Guidelines for Landscaping and Irrigation of Right-of-Ways, Retention Basins, and Park Development" for requirements for sight distance/visibility clear zones. *TDM#8*
 - Trees within vehicular sign distance visibility clear zones shall be horizontally spaced and/or offset to prevent creation of a "picket fence" effect.
 - 75% of any moving vehicle profile must be visible at all times from the origin point of sign distance. (30' minimum spacing for single trunk trees on 90' street alignment and 50' for multi-trunk trees).
17. Plant materials that have thorns or sharp protrusions must be restricted to areas separated 3' from pedestrian surface or bicycle lanes. *TDM#8 Section C (2)(G)*
18. In back of curb frontage landscape right-of-way areas, maintain a minimum 1' setback from curb and walkways to shrubs and groundcover at maturity. For medians, maintain 2' setback from curb. *TDM#8 Section C (2)(G)*

19. Place trees to provide an 8' clearance above sidewalk and 13' 6" clearance above vehicular traffic route. *TDM#8 Section C (2)(G)*
20. For medians that include additional width for future lanes, show the location of the future curb. Provide an overall median design that will allow for the future removal of the outer edges while maintaining a total design for the permanent portion of the median to remain. Major components of the irrigation system should not be installed in temporary median areas. Place trees within the permanent area. *TDM#8 Section C (2)(H)*
21. Specify 2 ½" minimum depth of decomposed granite of uniform depth after settlement. Granite to be Desert Gold 1 ¼" Screened. Note on plans. *TDM#8 Section C (4)(A)*
22. Note type of erosion control being used in drainage ways.
23. Specify decorative concrete or concrete pavers in median per Standard Detail C-225. Coordinate type of material required at specific locations with City Landscape Maintenance & Design Coordinator. For pavers, specify Citystone II, Old town Blend color. Specify pavers or concrete extended to point median becomes 6' wide, back of curb to back of curb. *TDM#8 Section C (4)(c)*
24. The irrigation system must be designed with trees on separate valves. ONLY rigid type P.V.C. materials may be used. Specify two (2) multi-port drip emitters per tree. Specify one (1) single-port per plant or one (1) multi-port per six (6) plants for shrubs and groundcover. Maximum length of emitter distribution tubing is 5. Emitter tubing must be buried 4" below finish grade. *TDM#8 Section C (5)*
25. Plastic P.V.C. lines below paving shall be installed within separate schedule 40 sleeves. For P.V.C. lines 1"-2 ½", the sleeve shall be two (2) nominal sizes larger. For P.V.C. lines 3" and larger, the sleeve shall be one (1) size larger. *TDM#8 Section B (28)(C)*
26. Specify all new median construction to utilize "purple" equipment and pipe designed for future reclaimed water use.
27. Include a copy of the current "[Civil Engineering Reclaimed Water Notes](http://www.chandleraz.gov/content/UDM_ReclaimedWaterNotes.pdf)" on the irrigation plans when using effluent water. See link: http://www.chandleraz.gov/content/UDM_ReclaimedWaterNotes.pdf
28. Type K hard copper shall be used for all mainline piping above grade and extending a minimum of 18" and a maximum of 24" below finish grade. *TDM#8 Section B (28)(B)*
29. Place irrigation meter, *backflow prevention unit (if applicable- See Standard Details C-404) and enclosure, metered service (if applicable) and controller in center of median 6' behind face of curb. Backflow unit to be placed within a Guard Shack enclosure. Provide detail on plans. *If using reclaimed source for irrigation, a backflow is not required unless determined by the Engineer of record or if any chemicals are planned to be injected into the system. *TDM#8 Section D (4) & TDM#1&2 Section 4 (J)(VII)*
30. **If Booster Pump is required:**
The recommended pump is manufactured by Barrett Engineered Pumps (619-232-7867) and is locally serviced. The pump would be installed in a marine grade aluminum enclosure measuring approximately 30"long, 29.5" high and 16.25" wide. The enclosure is available in powder coat colors as an option. The pump base is gravel ballasted instead of concrete.
- Technically, the pump is a 1 HP multi-stage centrifugal design that would produce 65 psi at a flow of 15 GPM. (Greater HP pumps may be required or Lower HP pumps may be approved depending on system design)
 - The pump would operate upon receiving a signal from the irrigation controller.
 - The pump station has a flow switch that would shut the pump off in the event of no-flow conditions.
31. Electric is required to be supplied to the median.
32. The irrigation controller is to be a IBOC Plus series battery operated clock if no booster pump is used. A standard electric irrigation controller is to be used in conjunction with the booster pump. Note on plans. *TDM#8 Section B (35)*
33. Provide Hunter electric ICV valves with latching solenoids. Note valve type on plans. Provide one valve for trees and one for shrubs. *TDM#8 Section B (36)*
34. Provide a Brass shut off ball valve prior to each electric valve. Note on plans. *TDM#8 Section B (36)*
35. Include details on plans per [Series C-800 of the Standard Details and Specifications](http://www.chandleraz.gov/content/UDM_800Landscape.pdf) booklet. See link: http://www.chandleraz.gov/content/UDM_800Landscape.pdf

36. Any required information or documents missing upon first submittal that are provided in subsequent review submittals shall be treated as a first review and may generate additional reviewer comments.
37. Coordinate all plan revisions and base information; ensure that all revisions and updates are reflected on Civil, Landscape and any other plans that are part of the project submittal packages. All redlines plans and documents are to be returned with corrected plans at the next subsequent submittal with a response letter indicating method(s) of compliance.

Site Development Plan Review staff is responsible for reviewing building plans, civil improvement plans and landscape, irrigation and hardscape plans to ensure compliance with Zoning Code requirements as well as the standards set forth in the approved Project Development Plan (PDP) and any stipulation(s) specified by City Council.

Site Development reviews are conducted simultaneously with other various City departments (e.g. Building Architectural/Structural, Traffic, Civil, Addressing, etc.) during the Building Safety and Civil Engineering plan review submittal/permitting process.

- Landscape, irrigation and hardscape plans (for all types of development) are to be a separate submittal package and included with the Civil & Site Improvement Plans submittal. See the [Civil Engineering & Site Development Improvement Plans Submittal Form & Requirements](#) form for submittal requirements.
- Modifications to existing landscape (other than a single family residence) also require Site Development review, approval and inspections and are to use the same form for plan review submittals.
- Median and R/W landscape are to be a separate plan set than the onsite landscape plans, with separate cover sheet, notes and requirements.