GENERAL IRRIGATION NOTES

1. The irrigation contractor shall comply thoroughly familiar with the specifications for this and related work prior to construction.

2. Install pop-up type sprinkler heads installed in lawn areas so that top of sprinkler head is flush with adjacent ground or curb.

3. Set sprinkler heads perpendicular to finish grade of area to be irrigated unless otherwise indicated on drawings.

4. Main vertical obstructions (trees, windbreaks, fences, lights, etc.) interfere with spray pattern of sprinkler heads so as to prevent proper coverage. Adjust sprinkler system by installing a ground plate, oval circle, or adjustable circle sprinkler head on each side of obstruction so as to provide proper coverage. Perform adjustments at no cost to contractor, as necessary.

5. Sprinkler system design is based on maximum operating pressure and maximum flow demand shown on irrigation drawings. At each point of connection, verify water pressure prior to construction. Actual water pressure may vary due to water pressure variations. Any difference between water pressure indicated on drawings and actual pressure reading at irrigation point-of-connection须 be contractor's authorized representative in the event, if necessary. Differences are not reported prior to start of construction, contractor assumes full responsibility for revisions.

6. Use volt electrical power outlet at the controller will be provided by general contractor. Make final hook-up from electrical outlet to automatic controller. All work to be completed in accordance with current building codes.

7. This design is diagrammatic. Piping valves, etc. may be shown within pipe areas to describe design configuration only. They shall be installed in piping areas where possible. Avoid cutting between sprinkler system, plantings, and architectural features. All valve sizes shall be placed within finished area.

8. Flush-and-adjust sprinkler heads for optimum performance and to prevent over spray onto walks, roadways, and buildings. This includes testing the least pressure on any area to test for, and conditions to the flow control valve to ensure optimum pressure for each system.

9. Do not uniformly install sprinkler systems as indicated on drawings when it is obvious in field that obstructions, operating pressures, and differences in area dimensions exist that may not have been indicated on the field. Any difference between field conditions and design conditions as indicated shall be corrected by the authorized representative, in the event this installation is not performed, contractor assumes full responsibility for revisions.

10. Install pipe materials and equipment as shown. Use fien, tar, and asphalt pipe thread on sprinkler thread joint and valve assemblies.

11. It is the contractor's responsibility to become familiar with space designations, location of walls, retaining walls, etc. Coordinate work with general contractor, and other sub-contractors for location and installation of pipe, valves, and electrical piping, structures, etc.

12. In addition to as shown on the drawings, the contractor is responsible for the installation of pipe, valves, and other components for sprinkler system. See below for complete information for all irrigation system components. This includes specialized tools required for complete disassembly of each sprinkler valve and valve.

13. The contractor shall notify irrigation consultant with any discrepancies.

DRAIN IRRIGATION NOTES

1. Provide gutter as emitter to all material placed by construction system.

2. Gutter emitter valve is designed to irrigate plant material only. Plant type in order to apply appropriate amount of water to any given area for proper plant growth and plant care. Additionally, plant material system specifications are noted with values calculated on plan.

3. Identification of plant material quantities and number of emitters for each area to be the responsibility of the contractor.

4. Gutter irrigation centers are shown diagrammatically for clarity. Actual asphalt pipes in all undrained planting areas.

5. Install perforated/strip lateral within pipe of pipe design. For interior areas, we recommend installing 2" pipe. For exterior areas, we recommend installing 6" pipe. For gardening and decorative areas, we recommend installing 4" pipe. For any additional information, consult with designer or engineer.

6. Install pop-up type lateral within pipe of pipe design. For interior areas, we recommend installing 2" pipe. For exterior areas, we recommend installing 6" pipe. For gardening and decorative areas, we recommend installing 4" pipe. For any additional information, consult with designer or engineer.

Emitter Schedule

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Notes for Curb Ramps

1. The following ramp types are general representations and may require modification to fit actual field conditions. Most applications within the City are retrofit situations where one or more constraints such as limited right of way, significant grade differences, and drainage concerns, must be taken into account in locating the curb ramp(s). Design resources are available within the City to assist the contractor in the proper selection and application of ramp type.

   Type 1 Ramp is for use in areas where the sidewalk is set back from the street, and wheelchair access from the side of the ramp is not likely to occur because the approach area is covered by lawn or gravel, or an obstacle is present.

   Type 2 Ramp is for use where the sidewalk extends to the curb or can be easily transitioned to permit wheelchair access to the ramp from the side.

   Type 3 Ramp is for use where there is attached sidewalk on one side, detached from the other and wheelchair access can occur from only one side.

   Type 4 Ramp is for use where an existing sidewalk, including the curb, is less than 6' and widening is not feasible.

   Type 5 Ramp is for use in the Downtown area where directional pedestrian movements are appropriate.

2. Distance between the flow line (FL) and the back of the curb ramp is variable and dependent upon the ramp type, available right of way, adjacent sidewalks, and other site specific factors. In no case should the ramp slope exceed 1:12H.

3. Tactile Warnings (truncated domes) - All curb ramps shall be constructed with truncated domes as defined in the Americans With Disabilities Act Access Guidelines (ADAAG) latest revision. The truncated domes shall be installed full width of the ‘throat’ of the ramp two (2) feet deep and six (6) inches up from the flowline (back of curb extended) at the base of the ramp. A sample of the truncated domes shall be submitted to, and approved by, the Engineer prior to construction. Truncated dome sections set in a sand, or other non-cementitious bed will not be allowed unless approved by the Engineer. Surface applied truncated domes are only allowed on pre-existing curb ramps and are not allowed in new construction. Truncated dome panels shall be brick red, tile red or other equivalent color to provide color contrast with the adjoining walk surface as required by section 4.29.2 of ADAAG. Colors must be approved by the Engineer prior to construction.

4. The ADAAG requirement for color contrast shall be met with the truncated dome panel. Concrete for the ramp construction shall not have color additive. In addition to truncated domes, curb ramps shall be scored with dummy grooves 3/8” deep on 12 inch centers. The grooves shall be placed in the ramp section above the truncated domes and aligned to provide a directional cue for the street crossing.

5. Concrete shall be in accordance with Rules and Regulations as contained in the Appendix and/or project specifications.

6. Consult with the Engineer for procedures and standards to follow for ramps located in Denver Landmark Districts, abutting Denver Landmark Districts, or for districts and structures listed in the National Register of Historic Places.

7. Longitudinal street flowline grades shall be maintained through the ramp area. The grade of the gutter lip shall be modified as described in Note 9. For Type 1 ramp construction, the longitudinal grade of the curb and gutter between the ramps shall not exceed an amount that causes either ramp to fall outside slopes as defined in Note 9.

8. If possible, drainage structures shall not be placed in line with ramps. Location of the ramp shall take precedence over location of the drainage structure, except where existing structures are being utilized in the new construction.

9. Maximum slope on the curb ramp surface shall not exceed 1' per foot (6.33%), nor be less than 1/4” per foot (2%) except as allowed for alterations of existing facilities in ADAAG. The centerline length of Type 1, 2 and 3 ramps shall be no less than 5 ½ feet as measured from the flowline to the back of the ramp. This is to allow the 2 foot zone of truncated domes set ½ foot up from the flowline and a 3 foot zone of directional joints as described in notes 3 and 4 herein. The maximum ‘tip’ of the gutter in front of the ramp shall be ¾” per foot (5%). For a standard 2 foot gutter pan, the maximum gutter ‘tip’ shall be no more than 1 ½” and shall be achieved by warping the gutter lip from the standard 2” ‘tip’ over a 5 foot curb and gutter section adjacent to the ramp. At the discretion of the Engineer, the lower gutter lip may be continued around the full curb return radius.

10. Directional ramps are the preferred standard for new ramp construction.

11. Site specific conditions may change the requirements of ramp size.

12. The transition between vertical and roll over curb walk should occur in a maximum of 10’.

13. Additional removal and replacement of sidewalks may be required.

14. Midblock ramps must be approved by Development Engineering Services.

15. An asphalt patch (not shown in the details) is normally required in street areas adjacent to new curb ramp installations.

16. For Type 1 Ramp, The area between the ramps at the corners will be filled in with 4” thick gray concrete.

![Typical Cross Section View of Ramp](image)

(See 7.5 for Truncated Dome placement)

DATE: 5/05

CITY & COUNTY OF DENVER

PUBLIC WORKS

CURB RAMP NOTES AND TYPICAL SECTION

STD. DWG NO. 7.0