

## Landscape Restoration Specifications

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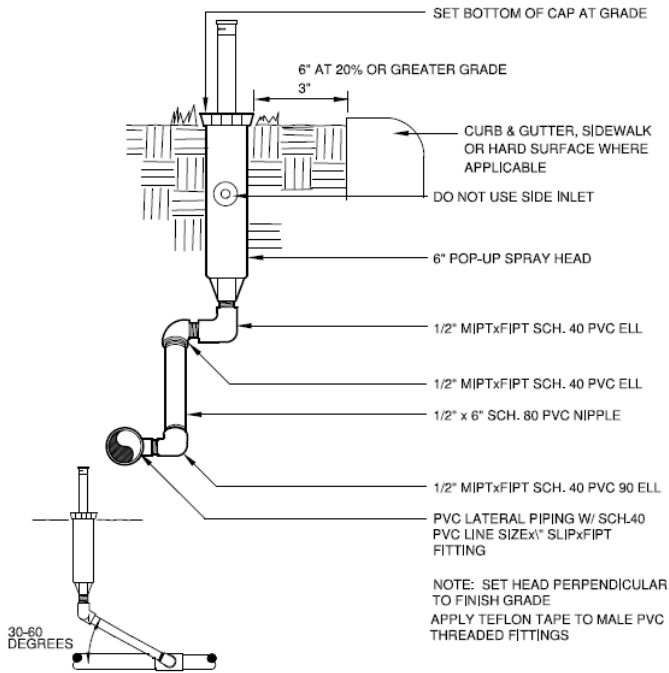
## Parks and Parkways Landscape

### 1.01 Irrigation Mainline Altering:

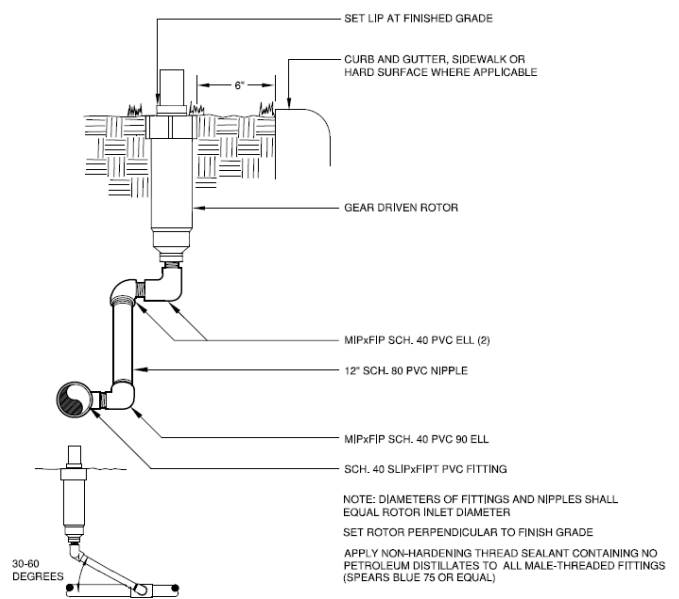
- A. Class 200 pipe is to be used for all irrigation.
- B. Irrigation wires must follow the main line below and to the side of any main altering.
- C. When splicing wires they must be label to be spliced back in the same order that they were previous to cutting.
- D. Enough wire should be added to enable wires to be lifted three feet above grade when all is restored. This is to enable easy access for troubleshooting and repair.
- E. All splices should be performed with Direct Burial wire splices:
  - 1. The DBY and DBY-6 splice kit connects a wire range of 2-5 #18 AWG through 2 #12 plus 1 #16 AWG solid or stranded copper wire.
  - 2. The DBR and DBR-6 splice kit connects a wire range of 5 #16 AWG through 3 #10 AWG solid or stranded copper wire.
- F. All wires should be coiled into a round 10" valve box or if more than 25 splices a standard rectangular valve box should be used.
- G. All irrigation wire shall be consistent with the color of existing wire and should be 14 AWG SOLID PE (UL) DIRECT BURRIAL.
- H. Mainline should only be routed around object with 45° couplers. This will reduce hammer and lose of pressure.
- I. Primer and cement must be applied to both pipe and coupler. Completely cover areas with primer and cement. Insert fully and rotate ¼ turn to smear any channels made by imperfections in the pipe. Wipe all excess from Cemented assembly. Follow all other manufacturer's instructions.
  - 1. P-70 Primer (Purple)
  - 2. 711 PVC Cement (Gray)
- J. All cemented irrigation must set for 24 hours before water charging.
- K. All work needs to be inspected by a District representative before burial.

### 2.01 Head Placement

- A. When sprinkler heads need to be moved or repaired, consult District representative.
- B. Sprinkler head model and nozzle must be consistent with the other sprinkler heads on that lateral line. **All** will be PRS and SAM, (Pressure Regulating Sprinkler and Seal - A- Matic). The most common sprinkler heads may be:
  - 1. 5505 PRS SAM (3/4 " inlet) Rotor
  - 2. 7005 PRS SAM (1" inlet) Rotor
  - 3. I- 20 36V or I-20 ADV Rotor
  - 4. 1806 PRS SAM Pop-up
- C. The nozzle must be consistent with others on the same zone, however, they must also be match precipitation rates if arc differs in degrees covered.
- D. Position head to irrigate from one head to another, (head to head), and contact the District for inspection before planting or sod installation.
- E. Position sprinkler heads three inches away from sidewalk and curb edge to prevent damage from plows and lawn edger's.



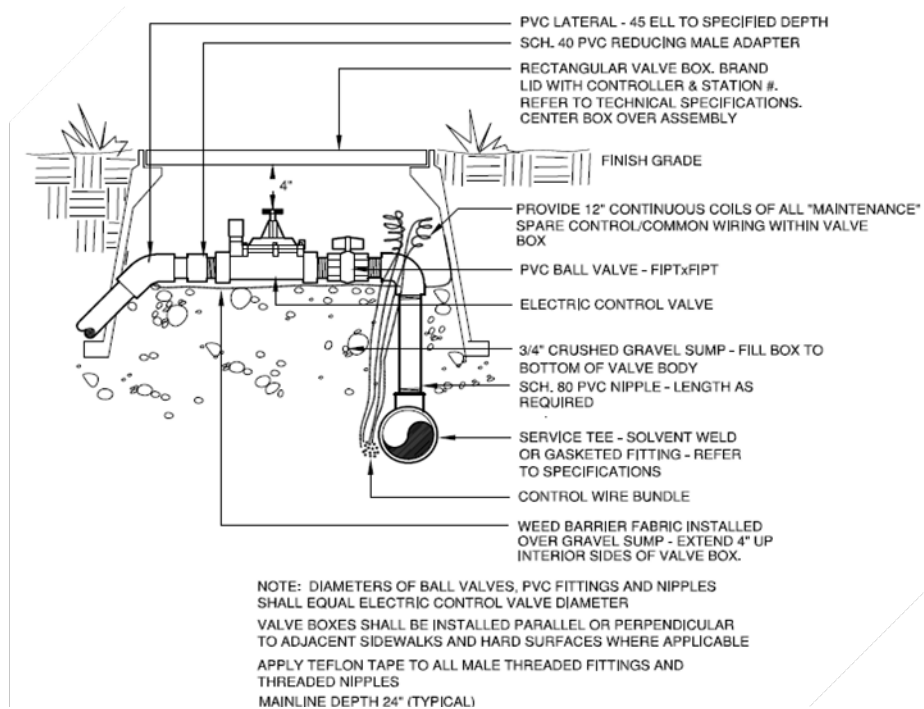
**Pop-up Spray Head**



**Rotor Spray Head**

### 3.01 Electric Valve Replacement or Repair

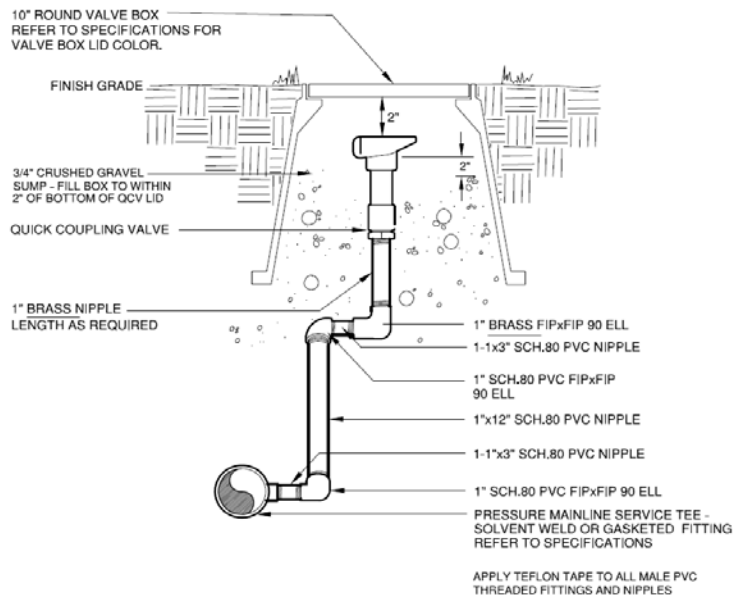
- A. Maintain four to six inches clearance of valve components to bottom of valve box lid.
- B. No part of the valve box should be touching any irrigation components, (lateral pipe, mainline, etc.).



- C. Valve must be brass Rainbird consistent with pipe size.

## 4.01 Quick Coupling Valve Repair

- A. Swing arm must be included in a quick coupler repair.
- B. Four inch clearance from top of coupler valve to bottom of 10" round valve box.



## 5.01 Soil Amendment for Sod and Planting

- A. Three yards of planters mix per 1000 square feet of landscape should be added to the top of the landscape profile and then tilled in 6 inches. Sprinkler heads and valve boxes should be flagged and avoided during tilling.

## 6.01 Sod Installation

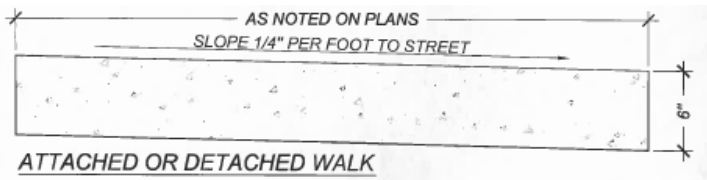
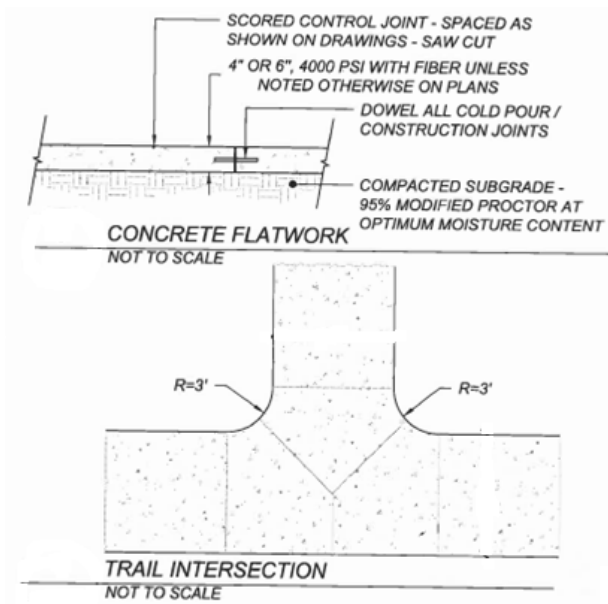
- A. Cut perimeter for sod to lay at grade.
- B. Use Texas Hybrid grass when possible; contact District representative with any delays or scarcity of type.
- C. **NO** laying sod on Fridays or before a Metro District Holiday.
- D. Metro District must be notified 48 hours prior to sod installation. Irrigation identification, approval and programming will be done in this time.

## 7.01 Backfill Procedures

- A. Be conscious of any repaired irrigation. Pushing the soil in at once will break laterals and mainlines. Fill holes in lifts around pipes and work the soil beneath irrigation. Irrigation lines need to be supported and covered by soil, without rocks, before bulk filling. Rocks will rub and create holes during water cycles and winter freeze and thaw, ("turn over").
- B. Set valve boxes on solid tamped soil, follow clearance issues under Electric Valve Replacement or Repair

## 8.01 Concrete Flatwork

- A. All concrete removal and replacement shall comply with Douglas County concrete specifications. All removals shall be sawed full depth or removed to the nearest joint. All sidewalk and trail replacement shall be 6" minimum thickness unless specified otherwise by HRMD. Concrete must be from an approved Douglas County mix unless otherwise allowed by HRMD. Expansion shall be installed at the lower end of all replaced sections.



## Upland Reclaiming Specifications (Open Space)

### 9.01 Reclamation Standards

- C. Metro District staff will not place unreasonable demands on the expected outcome of the reclamation.
- D. All work, contracted or otherwise to be completed by licensed and bonded organizations with knowledge applicable to each job.
- E. A successful stand of native grass is defined as at least four desirable seedlings per sq. ft., and free of erosion and weed infestation.

### 10.01 Site Preparation

- F. All site preparation methods should be done across the slope to prevent soil erosion from storm water sheeting.
- G. Soil scarification at a depth of six inches in the form of discing, tillage or chiseling will be completed prior to seeding.
- H. All sites must be free from non-natural materials such as old water lines, litter and building materials.

### 11.01 Reclamation Procedure

- I. Native seed mix as specified by the Metro Districts will be used.
- J. For slopes at or greater than 3:1, seeding by hand or broadcast spreader may be done with the approval from the Metro Districts, broadcast seeding rates must double the drill seeding rates.
- K. Application of a soil amendment will be determined by the District. If needed, apply one cubic yard of top soil for every 1000 square feet, or 43 cubic yards per acre. Apply top soil before discing occurs.
- L. Seed must be planted with a drill that is specifically designed to accommodate variability in size and physical characteristics of native rangeland grass seeds.
- M. Drill depth bands should be placed ¼” to ½” below the soils surface and spaced no greater than seven inches apart.
- N. Packer wheels will be used to ensure soil to seed contact.
- O. After seed has been drilled, straw mulch will be blown onto site and then crimped into the soil.
- P. Crimping (at a minimum 2 to 3 inch depth) should take place with a rate of 3,000 lbs of straw per acre using certified weed free straw.

### 12.01 Erosion Control Blankets - BioNet

- Q. Blankets will be applied on slopes equal to or greater than 3:1 after seed and weed free straw mulch application.
- R. Blanket Description: Double net straw blanket. Made from woven jute netting and is 100% biodegradable (i.e. S150 BN).
- S. A minimum overlap of four inches is required between rolls.
- T. Top slope edge of blanket must be staked (anchored) into 4-6 inch depth trench and backfilled.
- U. Stakes will be spaced 2-3 feet apart. Stakes are to be anchored along the edge and center of blanket.

### 13.01 Seed Specifications

- V. Dry/Upland site seed mix has been calculated to provide the best results in reclamation of dry sites ranging from clay to sandy soils. Drill seed rates of 33.5 lbs of pure live seed (PLS) per acre. Purity and germination tests for all seed should be less than one year old.

Species	Variety	% of Mix	Rates (PLS)
Western Wheatgrass	Arriba	12	4.0
Thick Spick Wheatgrass	Critana	18	6.0
Sideoats Grama	Native	12	4.0
Blue Grama	Native	25	8.5
Little Bluestem	Native	16	5.4
Prairie Sandreed	Goshen	12	4.0
Sand Dropseed	Native	5	1.6
<b>Total</b>		<b>100</b>	<b>33.5 lbs</b>

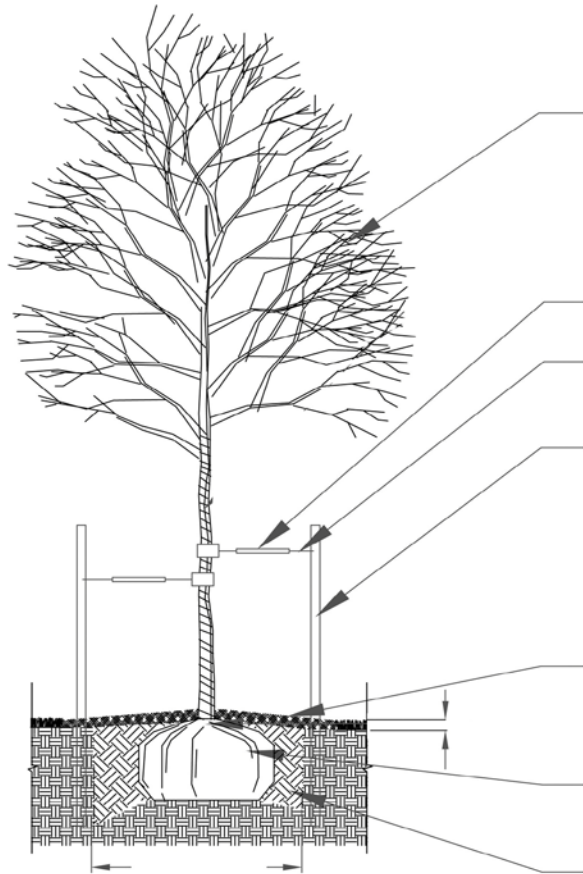
- W. Seed Species that may be used in substitution for either mix. These species and their corresponding rates must be reviewed by the Metro Districts prior to application.

Species	Variety	Site Type	Season
Sand Bluestem	Garden	Wet	Warm
Prairie Junegrass	None	Wet	Cool
Canada Wildrye	None	Wet	Cool

### 14.01 Revegetation Terms

- X. Seeding rates are specified in terms of “pounds of pure live seed (PLS) per acre or unit area. In a mix, each species contributes to the mix, expressed as a percent of the rate for a pure stand of that specific species. The number of seeds per pound varies by species, so percentages by weight are mis-leading.
- Y. If a species is not available, an increase or substitution of another species may occur only with Metro District approval.
- Z. All questions concerning the above information should be directed to Metro Districts Open Space at (303) 791-2710.

## 15.01 Tree Planting Standards



### DECIDUOUS

PRUNE ONLY DEAD AND BROKEN LIMBS.

2" WIDE CANVAS STRAPS WITH GROMMETS.

14 GAUGE GALV. WIRE WITH 1/2" WHITE PVC ON EACH WIRE – 12" LENGTH.

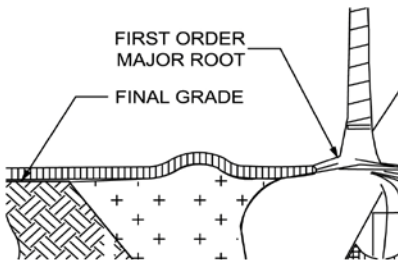
6' T-POSTS – USE 2 PER TREE. INSTALL PARALLEL TO SIDEWALK, STREET, OR INLINE WITH TRAFFIC FLOW AND OUTSIDE PIT EXCAVATION.

3" #1 POLE PEELINGS, KEEP 6" FROM TRUNK.

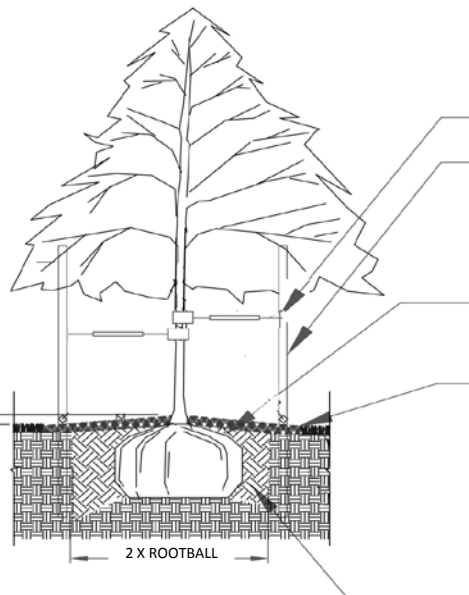
PLANT TREE SO THAT FIRST ORDER MAJOR ROOT IS 1" - 2" ABOVE FINAL GRADE.

REMOVE ALL TWINE, ROPE, BURLAP AND WIRE FROM ENTIRE ROOT BALL AND TRUNK.

AMENDED SOIL AROUND ROOTBALL, SETTLE SOIL WITH WATER TO FILL AIR POCKETS.



PLANT TREE SO THAT FIRST ORDER MAJOR ROOT IS 1" - 2" ABOVE FINAL



### EVERGREEN

PRUNE ONLY DEAD AND BROKEN LIMBS.

14 GAUGE GALV. WIRE WITH 1/2" WHITE PVC ON EACH WIRE – 12" LENGTH  
6' T-POSTS – USE 2 PER TREE. INSTALL PARALLEL TO SIDE WALK, STREET, OR INLINE WITH TRAFFIC FLOW, AND OUTSIDE OF PIT EXCAVATION.

REMOVE ALL TWINE, ROPE, BURLAP AND WIRE FROM ENTIRE ROOT BALL AND TRUNK.

3" #1 POLE PEELINGS, KEEP 6" FROM TRUNK

AMENDED SOIL AROUND ROOTBALL, SETTLE SOIL WITH WATER TO FILL AIR POCKETS.

### Notes:

1. Provide 6" high water ring in bubbler irrigated areas.
2. Broken or crumbling root balls will be rejected.
3. Amended soil should be a 3:1 mixture of native soil and peat moss.