| Name                   | Size  | Height | Width | Caliper | Name                   | Size  | Height | Width | Caliper | Name                   | Size  | Height | Width | Caliper | Name                   | Size  | Height | Width | Caliper |
|-----------------------|-------|--------|-------|---------|-----------------------|-------|--------|-------|---------|-----------------------|-------|--------|-------|---------|-----------------------|-------|--------|-------|---------|-----------------------|-------|--------|-------|---------|
| BERLANDERI            | 15    | 4      | 2     | 0.5     | DESERT IRONWOOD       | 15    | 3      | 2     | 0.5     | VELVETI ARIZONA (M)   | 5     | 5.5    | 3     | 0.5     | ALEPPPO                | 15    | 6      | 3     | 0.75    |
| GUAJILLO (M)          | 24    | 5      | 4     | 1       | (OLNEYA TESOTA)       | 24    | 6      | 3     | 1.25    | (PROSOPIS VELUNTINA ) | 24    | 7      | 4     | 1       | (PINUS HALPENSIS)      | 24    | 9      | 4     | 2       |
|                       |       |        |       |         |                       | 30    | 7      | 5     | 1.5     |                       | 30    | 8      | 9     | 1.5     |                       | 30    | 11     | 6     | 2.5     |
|                       |       |        |       |         |                       | 36    | 9      | 6     | 2       |                       | 36    | 10     | 8     | 2       |                       | 36    | 14     | 7     | 3.5     |
|                       |       |        |       |         |                       | 42    | 11     | 9     | 3       |                       | 42    | 12     | 10    | 2.5     |                       | 42    | 16     | 9     | 4       |
|                       |       |        |       |         |                       | 48    | 12     | 10    | 3.5     |                       | 48    | 14     | 12    | 3       |                       | 48    | 18     | 10    | 4.5     |
| MULGA                 | 15    | 5      | 2     | 0.75    |                       | 42    | 11     | 9     | 3       |                       | 42    | 12     | 10    | 2.5     |                       | 42    | 16     | 9     | 4       |
|                       |       |        |       |         |                       | 48    | 12     | 10    | 3.5     |                       | 48    | 14     | 12    | 3       |                       | 48    | 18     | 10    | 4.5     |
|                       |       |        |       |         |                       | 50    | 15     | 7     | 3       |                       | 50    | 16     | 10    | 4.5     |                       | 50    | 20     | 13    | 6.5     |
|                       |       |        |       |         |                       | 52    | 17     | 8     | 4       |                       | 52    | 20     | 13    | 6.5     |                       | 52    | 24     | 17    | 10.5    |
|                       |       |        |       |         |                       | 54    | 18     | 13    | 10.5    |                       | 54    | 24     | 17    | 10.5    |                       | 54    | 30     | 24    | 18.5    |
|                       |       |        |       |         |                       | 56    | 20     | 13    | 10.5    |                       | 56    | 24     | 17    | 10.5    |                       | 56    | 30     | 24    | 18.5    |
|                       |       |        |       |         |                       | 58    | 22     | 15    | 12.5    |                       | 58    | 24     | 17    | 10.5    |                       | 58    | 30     | 24    | 18.5    |
|                       |       |        |       |         |                       | 60    | 24     | 17    | 10.5    |                       | 60    | 30     | 24    | 18.5    |                       | 60    | 36     | 30    | 24.5    |
|                       |       |        |       |         |                       | 62    | 26     | 20    | 15.5    |                       | 62    | 30     | 24    | 18.5    |                       | 62    | 42     | 36    | 30.5    |
|                       |       |        |       |         |                       | 64    | 28     | 22    | 20.5    |                       | 64    | 36     | 30    | 30.5    |                       | 64    | 48     | 36    | 40.5    |
|                       |       |        |       |         |                       | 66    | 30     | 24    | 22.5    |                       | 66    | 42     | 36    | 30.5    |                       | 66    | 54     | 42    | 42.5    |
|                       |       |        |       |         |                       | 68    | 32     | 26    | 25.5    |                       | 68    | 48     | 36    | 40.5    |                       | 68    | 60     | 48    | 50.5    |
|                       |       |        |       |         |                       | 70    | 34     | 28    | 30.5    |                       | 70    | 60     | 48    | 50.5    |                       | 70    | 72     | 54    | 60.5    |
|                       |       |        |       |         |                       | 72    | 36     | 30    | 33.5    |                       | 72    | 60     | 48    | 50.5    |                       | 72    | 84     | 54    | 60.5    |
|                       |       |        |       |         |                       | 74    | 38     | 32    | 39.5    |                       | 74    | 84     | 54    | 60.5    |                       | 74    | 96     | 54    | 60.5    |
|                       |       |        |       |         |                       | 76    | 40     | 34    | 44.5    |                       | 76    | 96     | 54    | 60.5    |                       | 76    | 120    | 72    | 80.5    |

See General Notes
On Page 2

Page 1 of 2
### MINIMUM TREE SIZE REQUIREMENTS

<table>
<thead>
<tr>
<th>Name</th>
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<td>36</td>
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**GENERAL NOTES:**

1. All trees shall be guaranteed for one year from the date of acceptance.
2. "M" designates a multitrunk tree. A multitrunk tree is a tree with more than one main trunk.
3. Caliper is measured at 12" above the ground for trees with caliper greater than 4". For multitrunk trees, and trees with caliper of less than 4", the caliper is measured 6" above the ground.
4. Size is listed as the box size in inches except for those trees in 15 gallon containers.

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**MINIMUM TREE SIZE REQUIREMENTS**

**DETAIL NO.** 2600-2

City of Scottsdale Standard Details

APPROVED BY: Scottsdale Standards & Specifications Committee

REVISED 05/05/08
Tree Planting and Staking
≤36" Box Or 2" Caliper

- Prune Tree At Time Of Stake Removal
- Tie Wire With Hose Chafing Guard Per Spec.
- Lodgepole Pine Tree Stakes
- Stakes Shall Remain In Place For 2 Years Unless Removal Is Approved By Maintenance Director Or Designee.
- Set Top Of Root Ball 1" to 2" Above Finished Grade

Shrub Planting

- Do Not Place Decomposed Granite Within 2" Of Trunk
- Rake Smooth.
- Finish Grade To Be Decomposed Granite
- Provide Final Application Of Weed Control Upon Final Raking.
- Provide Final Application Of Weed Control Upon Final Raking.

Groundcovers

- Mulch Soil To A Depth Of 2", 1" In Diameter, Keep Mulch and Decomposed Granite 2" Away From Plant Base.
- Prepare Soil Per Specifications And Rototill To A Depth Of 6" Prior To Any Sprinkler Work.

Decomposed Granite

- Decomposed Granite
- Finish Grade To Be Raked Smooth.
- Provide Final Application Of Weed Control Upon Final Raking.

Notes:
- Sufficient clearance shall be maintained between shrubs and utility facilities so as to not hinder use of these facilities.

All Groundcovers To Be Planted On Center (See Plant Legend) In A Triangular Pattern.

X = O.C. Dimension As Noted On Plan
Y = 0.86 Of Dimension "X"

Note: Refer to COS Detail 2210 for finish grade height of decomposed granite and turf in relation to top of curbs & sidewalks.

City of Scottsdale

City of Scottsdale Standard Details

APPROVED BY:
Scottsdale Standards & Specifications Committee

DETAIL NO. 2620-1

LANDSCAPE DETAILS

DETAIL NO. 2620-1
1. Do Not Place Decomposed Granite Within 2" Of Planting Base.

**NOTES:**
1. Optimum transplanting season is October thru November.
2. Maintain original plant orientation. The original "North" orientation shall be marked on a rib or at a height of 5" above ground level.
3. Water thoroughly at the time of transplanting to remove air pockets and assure proper compaction. Backfill shall be free of injurious rocks and debris.
4. Do not water for 3 weeks after planting.
5. Plant in areas safe from present and future construction activities.
6. Transplant to original depth of bury.

**Plant At Depth Which Plant Was Grown.**

**Planting Mix To Be 1/3 Golf Sand And 2/3 Specified Soil Pack The Backfill Mix, Do Not Use Water To Settle Backfill Mix.**

**Planting Hole Width Shall Be 3 Times Diameter Of Roots And No Deeper Than The Extension Of The Roots.**

**Use 6" to 8" Rocks To Anchor Roots.**

**Root Prune All Shredded Or Damaged Roots And Dust Entire Root Structure With Wettable Sulphur (1.5 ML Min.) And Streptomycin Spray At Planting Site. Root Ball Minimum Size Shall Be 24" With A Minimum Root Length Of 6" On All Sides.**

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**Saguaro Planting Type A**

- Use Golf Sand Or 1/4" Minus Decomposed Granite To Backfill Planting Hole. Backfill 1/2 Of Pit, Then Compact.

- Root Prune All Shredded Or Damaged Roots And Dust Entire Root Structure With Wettable Sulphur (1.5 ML Min.) And Streptomycin Spray At Planting Site. Root Ball Minimum Size Shall Be 24" With A Minimum Root Length Of 6" On All Sides.

- **Garden Hose Reinforced With Wire (Metal).**

- **3 Tree Braces, Spaced Equally, Braces To Remain In Place For One Year Min.**

- **6 - 1 Gallon Emitter In "Hula Hoop" Distribution, Run Once A Month 24 To 48 Hours For One Year.**

- **Planting Hole Width Shall Be 3 Times Diameter Of Roots And No Deeper Than The Extension Of The Roots.**

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**Saguaro Planting Type B**

- Use Golf Sand Or 1/4" Minus Decomposed Granite To Backfill Planting Hole. Backfill 1/2 Of Pit, Then Compact.

- Root Prune All Shredded Or Damaged Roots And Dust Entire Root Structure With Wettable Sulphur (1.5 ML Min.) And Streptomycin Spray At Planting Site. Root Ball Minimum Size Shall Be 24" With A Minimum Root Length Of 6" On All Sides.

- **4" x 8"- Dense Foam And Carpet PadDED, 8" Above Natural Grade And Nailed To Brace.**

- Steel Band Fastened With 2 Large Staples Per Brace.

- **6 - 1 Gallon Emitter In "Hula Hoop" Distribution, Run Once A Month 24 To 48 Hours For One Year.**

- **Planting Hole Width Shall Be 3 Times Diameter Of Roots And No Deeper Than The Extension Of The Roots.**

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**Ocotillo Planting**

**NOTES:**

- Water weekly through the summer. Maintain original growing orientation.

**Plant At Depth Which Plant Was Grown.**

**Planting Mix To Be 1/3 Golf Sand And 2/3 Specified Soil Pack The Backfill Mix, Do Not Use Water To Settle Backfill Mix.**

**Planting Hole Width Shall Be 3 Times Diameter Of Roots And No Deeper Than The Extension Of The Roots.**

**Use 6" to 8" Rocks To Anchor Roots.**

**Root Prune All Shredded Or Damaged Roots And Dust Entire Root Structure With Wettable Sulphur (1.5 ML Min.) At Planting Site.**

**Cactus Planting**

**NOTES:**

- Water weekly through the summer. Maintain original growing orientation.

**Plant At Depth Which Plant Was Grown.**

**Planting Mix To Be 1/3 Golf Sand And 2/3 Specified Soil Pack The Backfill Mix, Do Not Use Water To Settle Backfill Mix.**

**Planting Hole Width Shall Be 3 Times Diameter Of Roots And No Deeper Than The Extension Of The Roots.**

**Use 6" to 8" Rocks To Anchor Roots.**

**Root Prune All Shredded Or Damaged Roots And Dust Entire Root Structure With Wettable Sulphur (1.5 ML Min.) At Planting Site.**
Salvaged Tree Planting

- Bury 3' in ground and cut off stake 10' long lodgepole pine tree stakes.
- Guard per specs as required.
- Tie wire with hose chafing guard per specs.
- Backfill with native soil. (No rocks of rootball before removing box side panels.)
- Compact backfill as needed to prevent breaking rootball.
- Planting hole shall be 3/4 the depth removal is approved by maintenance director or designee.
- Set top of rootball 1" to 2" above finished grade.
- Planting hole shall be 3 times diameter of rootball and no deeper than the extension of the roots.
- Plant at depth which plant was grown. Adjusting root ball depth to align finished height will not be allowed.
- Backfill with native soil (no rocks greater than 3") backfill 3/4 the depth of rootball before removing box side panels and compact backfill as needed to prevent breaking rootball.
- Do not place decomposed granite within 2" of trunk.
- Do not place decomposed granite within 2" of trunk.
- Provide smooth transition to surrounding finish grade.
- Provide water basin within 2" of trunk.
- Do not pack backfill.
- Basketball 6-8 fronds, tie with natural fiber twine.
- (Remove trees prior to buckling 60-90 days).
- Planting hole width shall be 3 times diameter of roots and no deeper than the extension of the roots.
- Widen top 6-8 fronds, tie with natural fiber twine.
- Parshall sand backfill. Settle backfill with water, do not pack backfill.
- 4" perforated PVC, 2 per tree. Wrap PVC with soil screen fabric.
- 2" x 4" blocking nailed to brace, tie to trunk with 1" vinyl tie.
- 3) 2" x 6" braces, spaced equally and nailed to wooden stakes in the ground.
- Tie wire with hose chafing guard per specs as required.
- 12 gauge double strand galvanized and annealed wire. Tie wire to inside of stakes. Turn in or crimp ends to prevent injury.
- Tie wire with hose chafing guard per specs as required.
- 12 gauge double strand galvanized and annealed wire. Tie wire to the inside of stakes. Turn in or crimp ends to prevent injury.
- Existing slope
- Tree or shrub trunk
- Provide watering basin
- Note:
- Tree staking - plan view
- Tree & shrub on slope planting
- Palm planting and bracing detail
- Salvaged tree planting
- Tree & shrub on slope planting

City of Scottsdale
Standard Details

APPROVED BY: Scottsdale Standards & Specifications Committee

LANDSCAPE DETAILS

DETAIL NO. 2620-3

REVISED 5/22/15
Tree Protection

Root Protection
Vary per tree size
Extends from dripline to dripline

Branch Protection
Protect lower branches of tree canopy. Provide construction fencing or equal at dripline (min.)

Trunk Protection
Required if wheeled construction equipment involved within 20' or less.

Place Signs:
KEEP OUT TREE PROTECTION AREA
Every 50' Attached To Fencing

NOTES:
1. All trees to be protected within the construction area shall be identified with white survey tape wrapped around the trunk. Grouping of more than one tree within the tree protection zone may occur.
2. To prevent tree root smothering, soil stockpiles, supplies, equipment or any other material shall not be placed or stored within a tree drip line or within 25 feet of a tree trunk, whichever is greater.
3. Trenches shall be hand dug within the drip line in areas where roots two inches in diameter and greater are present, or when in close proximity to low branching trees. Whenever possible, roots two inches or greater in diameter shall be tunneled or bored under and shall be covered to prevent dehydration.
4. Tree roots shall not be cut unless cutting is unavoidable. When root cutting is unavoidable, a clean sharp cut with an approved pruning saw shall be made to avoid shredding or smashing. Root cuts should be made back to a lateral root. Whenever possible, tree roots should be cut between late fall and bud opening, when root energy supplies are high and conditions are least favorable for disease-causing agents. Exposed roots shall be covered immediately to prevent dehydration. Roots shall be covered with soil or burlap and kept moist. Backfill material around damaged roots shall be a light mulch/sand mixture to promote root recovery.
5. Watering of protected trees in which roots were cut shall be provided by the contractor. Watering schedule to be established by City arborist.
6. Horizontal boring rather than trenching should be used for utility placement within drip line of tree whenever possible.
7. Fencing material shall encircle any tree whose outer drip line edge is within 25 feet of any construction activities.
8. Fencing material shall be orange construction fence a minimum of 4 feet in height.
9. Fencing material shall be set at the drip line or 25 feet from tree trunk, whichever is greater, and maintained in an upright position throughout the duration of construction activities.
10. Any grade changes or retaining wall/tree well installation within the drip line shall be approved by City arborist.

Note:
No materials shall be stored within the tree protection areas.

New 4/16/09
NOTES:

1. ALL VERTICAL SURFACES TO BE FORMED.
2. VERTICAL SURFACES DOWN FROM 2" BELOW UNDISTURBED SOIL MAY BE PLACED AGAINST NEAT CUT IF APPROVED BY THE ENGINEER AND CONCRETE WILL NOT EXTEND MORE THAN 1" BEYOND THEORETICAL FACE.
3. ALL EXPOSED SURFACES TO BE STRIPPED GREEN AND TROWEL FINISHED.
4. CONCRETE CURBS CONFORM TO SECT. 340.
5. MAXIMUM SPACING OF CONTRACTION JOINTS IS 10' MAXIMUM.
6. EXPANSION JOINTS PER SECT. 340, 50' MAXIMUM SPACING.
7. CONCRETE TO BE CLASS 'B' PER SECT. 725.
8. HEADER SHALL HAVE AN 18" DEPTH IF HEADER IS SUBJECT TO SCOUR WHEN CONTAINING RIP-RAP AREAS.
9. TOP OF HEADER TO BE FLUSH WITH TOP OF ANY ADJACENT CONCRETE SURFACES.
10. ENSURE A SMOOTH AND EVEN TRANSITION WHERE CONCRETE HEADER TERMINATES AT SIDEWALK OR WALL.
11. COLOR TO MATCH ADJACENT SIDEWALKS OR STANDARD CONCRETE COLOR IF NOT ADJACENT TO OTHER PAVING.
1. POWER SOURCE FOR CONTROLLER TO BE HARD WIRED FROM CIRCUIT BREAKER MOUNTED INSIDE CABINET TO A NON-GFI OUTLET, CONTROLLER TO BE PLUGGED INTO OUTLET
2. LOCATION OF POWER SOURCE TO BE NOTED ON CIRCUIT BREAKER PANEL
3. CONTROLLER TO BE LOCATED IN AREA WITH POSITIVE DRAINAGE
4. INSTALL ONLY ONE CONTROL VALVE WIRE PER CONTROLLER OUTPUT
5. VHF AND UHF RADIOS TO BE TUNED TO C.O.S. FREQUENCIES. CONTACT IRRIGATION DEPARTMENT FOR INFORMATION (480-312-2189)
6. ANTENNA TYPE, MAST & MOUNTING INSTALLATION TO BE APPROVED BY CITY OF SCOTTSDALE IRRIGATION DEPARTMENT
7. POWER SOURCE TO BE PROVIDED BY CONTRACTOR FOLLOWING NEC REQUIREMENTS, INSTALLATION TO BE INSPECTED AND APPROVED BY C.O.S. INSPECTOR, INSTALL METAL ADDRESS LABELS TO OUTSIDE DOOR OF IRRIGATION CONTROLLER CABS INSIDE CABINET TO A NON-GFI OUTLET. CONTROLLER TO BE PLUGGED INTO OUTLET

NOTES:
NOTES:

1. POWER SOURCE FOR CONTROLLER TO BE HARD WIRED FROM CIRCUIT BREAKER MOUNTED INSIDE CABINET TO A NON-GFI OUTLET. CONTROLLER TO BE PLUGGED INTO OUTLET.

2. LOCATION OF POWER SOURCE TO BE NOTED ON CIRCUIT BREAKER PANEL.

3. REMOTE CONTROL VALVES FOR D.C. SCORPIO APPLICATIONS MUST HAVE D.C. LATCHING SOLENOIDS AND APPROVED SOLAR PANEL FOR POWER SOURCE.

4. MIDLAND NARROW BAND RADIO # 2845 G TO BE INSTALLED WITH SCORPIO CONTROLLER.

5. CONTROLLER TO BE LOCATED IN AREA WITH POSITIVE DRAINAGE.

6. INSTALL ONLY ONE CONTROL VALVE WIRE PER CONTROLLER OUTPUT.

7. UHF RADIO TO BE TUNED TO C.O.S. FREQUENCIES. CONTACT IRRIGATION DEPARTMENT FOR INFORMATION (480-312-2189).

8. POWER SOURCE TO BE PROVIDED BY CONTRACTOR FOLLOWING NEC REQUIREMENTS. INSTALLATION TO BE INSPECTED AND APPROVED BY COS INSPECTOR. INSTALL METAL ADDRESS LABELS TO OUTSIDE DOOR OF IRRIGATION CONTROLLER CABINETS FOR ALL CONTROLLERS RECEIVING NON-METERED POWER SUPPLY.
SCORPIO UHF ANTENNA (UHF NORTHPOINT
LOPRO ANTENNA, NP 4000, 450-470 MHz
OR APPROVED EQUAL)

LAMAX LOCKABLE
STAINLESS STEEL CABINET
(OR APPROVED EQUAL)

1/2-INCH E.M.T. CONDUIT
FOR 110V POWER SUPPLY

8-FOOT COPPER CLAD
GROUND ROD – WITH 10
GAUGE NON-INSULATED
GROUND WIRE CONNECTED
TO GROUND TERMINAL
BLOCK

FINISH GRADE

DEPTH PER
ELECTRICAL
CODE

3 POINT LATCH WITH
LOCKABLE HANDLE

2-INCH MALE ADAPTER
WITH LOCK RING

2-INCH SCH 40 P.V.C. SLEEVE
WITH 2" SWEEP FOR CONTROL WIRES
TO MAINLINE TRENCH, SECURE TO WALL
WITH CONDUIT STRAP TOP AND
BOTTOM.

VENTS WITH BAFFLE

24" TO MAINLINE TRENCH
(INSTALL WIRES IN CONDUIT
IF NOT IN MAINLINE TRENCH)

NOTES:

1. POWER SOURCE FOR CONTROLLER TO BE HARD WIRED FROM CIRCUIT BREAKER MOUNTED INSIDE CABINET TO A NON-GFI OUTLET. CONTROLLER TO BE PLUGGED INTO OUTLET.
2. LOCATION OF POWER SOURCE TO BE NOTED ON CIRCUIT BREAKER PANEL.
3. REMOTE CONTROL VALVES FOR D.C. SCORPIO APPLICATIONS MUST HAVE D.C. LATCHING SOLENOIDS AND APPROVED SOLAR PANEL FOR POWER SOURCE.
4. MIDLAND NARROW BAND RADIO #2845 C TO BE INSTALLED WITH SCORPIO CONTROLLER.
5. INSTALL ONLY ONE CONTROL VALVE WIRE PER CONTROLLER OUTPUT.
6. UHF RADIO TO BE TUNED TO C.O.S. FREQUENCIES. CONTACT IRRIGATION DEPARTMENT FOR INFORMATION (480-312-2189).
7. POWER SOURCE TO BE PROVIDED BY CONTRACTOR FOLLOWING NEC REQUIREMENTS. INSTALLATION TO BE INSPECTED AND APPROVED BY COS INSPECTOR. INSTALL METAL ADDRESS LABELS TO OUTSIDE DOOR OF IRRIGATION CONTROLLER CABINETS FOR ALL CONTROLLERS RECEIVING NON-METERED POWER SUPPLY.
1. POWER SOURCE FOR CONTROLLER TO BE HARD WIRED FROM CIRCUIT BREAKER MOUNTED INSIDE CABINET TO A NON-GFI OUTLET. CONTROLLER TO BE PLUGGED INTO OUTLET.

2. LOCATION OF POWER SOURCE TO BE NOTED ON CIRCUIT BREAKER PANEL.

3. INSTALL ONLY ONE CONTROL VALVE WIRE PER CONTROLLER OUTPUT.

4. VHF AND UHF RADIOS TO BE TUNED TO C.O.S. FREQUENCIES. CONTACT IRRIGATION DEPARTMENT FOR INFORMATION (480-312-2189)

5. POWER SOURCE TO BE PROVIDED BY CONTRACTOR FOLLOWING NEC REQUIREMENTS. INSTALLATION TO BE INSPECTED AND APPROVED BY COS INSPECTOR. INSTALL METAL ADDRESS LABELS TO OUTSIDE DOOR OF IRRIGATION CONTROLLER CABINETS FOR ALL CONTROLLERS RECEIVING NON-METERED POWER SUPPLY.

6. ANTENNA TYPE, MAST AND MOUNTING INSTALLATION TO BE APPROVED BY COS IRRIGATION DEPARTMENT.
NOTES:
1. INSTALL WIRE OF APPROPRIATE GAUGE, CONNECTORS, SEALANT, AND ADAPTORS PER MANUFACTURERS INSTRUCTIONS.
2. D.C. LATCHING SOLENOIDS ON REMOTE CONTROL VALVES TO BE COMPATIBLE WITH CONTROLLER.
3. MASTER VALVE TO BE INSTALLED AND WIRED TO CONTROLLER. RAINBIRD GB/PESB VALVE, SAME SIZE AS MAINLINE INSTALLED PER COS DETAIL #2654 (REMOTE CONTROL VALVE) WITH DC LATCHING SOLENOID COMPATIBLE WITH CONTROLLER.
4. PROGRAMMING/ACCESS KEY TO BE SUPPLIED WITH CONTROLLER.
5. INSTALL MANUFACTURERS STAINLESS STEEL ENCLOSURE FOR CONTROLLER.
6. PROVIDE 12" EXPANSION COIL FOR EACH WIRE SPLICE INSIDE SPLICE BOX WHEN SPLICES ARE REQUIRED BY MANUFACTURER.
7. THE CONTROLLER SHALL BE SECURED INSIDE THE MANUFACTURES STAINLESS STEEL ENCLOSURE IF NOT INSTALLED INSIDE THE BACKFLOW PREVENTOR ENCLOSURE.

SOLAR CONTROLLER

REVISED 05/02/08

DIG/LEIT 4000 X OR XR SERIES CONTROLLER

SEE NOTE 7.

CARSON / BROOKS 10-INCH ROUND VALVE BOX WITH LOCKING "T" STYLE COVER. (SUPPLY WITH STAINLESS STEEL BOLTS)

EPOXY FILLED TWO PIECE CYLINDER WIRE CONNECTOR

BRICK PAVER (1 OF 3)

12"x12"x12" CONCRETE BASE

MANUFACTURERS SWEEP ELL

MOUNTING TUBE

DIG/LEIT 4000 X OR XR SERIES CONTROLLER

SEE NOTE 7.

CARSON / BROOKS 10-INCH ROUND VALVE BOX WITH LOCKING "T" STYLE COVER. (SUPPLY WITH STAINLESS STEEL BOLTS)

EPOXY FILLED TWO PIECE CYLINDER WIRE CONNECTOR

BRICK PAVER (1 OF 3)

12"x12"x12" CONCRETE BASE

MANUFACTURERS SWEEP ELL

DIG/LEIT 4000 X OR XR SERIES CONTROLLER

SEE NOTE 7.

CARSON / BROOKS 10-INCH ROUND VALVE BOX WITH LOCKING "T" STYLE COVER. (SUPPLY WITH STAINLESS STEEL BOLTS)

EPOXY FILLED TWO PIECE CYLINDER WIRE CONNECTOR

BRICK PAVER (1 OF 3)

12"x12"x12" CONCRETE BASE

MANUFACTURERS SWEEP ELL

DIG/LEIT 4000 X OR XR SERIES CONTROLLER

SEE NOTE 7.

CARSON / BROOKS 10-INCH ROUND VALVE BOX WITH LOCKING "T" STYLE COVER. (SUPPLY WITH STAINLESS STEEL BOLTS)

EPOXY FILLED TWO PIECE CYLINDER WIRE CONNECTOR

BRICK PAVER (1 OF 3)

12"x12"x12" CONCRETE BASE

MANUFACTURERS SWEEP ELL

DIG/LEIT 4000 X OR XR SERIES CONTROLLER

SEE NOTE 7.
NOTES:
1. Install #14 ga. irrigation control wire.
2. Install one control wire per push button. Control wire to be different color from all other irrigation control wires.
3. Common wire (#12 ga) for push buttons shall be a separate common wire and not part of the irrigation control valve common wire.
4. Push button common wire to have color stripe matching push button control wire. The common wire may be shared by other push buttons.
5. Attach push button enclosure to galvanized post with two self-tapping hex head screws.
6. For other configurations/applications, contact Irrigation Dept 480-312-2189.
7. Label control wires inside enclosure and at controller to differentiate their functionality.
TREE EMITTER - MULTI OUTLET
15 GALLON TO 42" BOX TREES
(SEE EMISSOR SCHEDULE)

TREE EMITTER - MULTI OUTLET
48" BOX TO 60" BOX TREES
(SEE EMISSOR SCHEDULE)

TREE EMITTER - MULTI OUTLET
66" BOX TO 84" BOX TREES
(SEE EMISSOR SCHEDULE)

TREE EMITTER - MULTI OUTLET
96" BOX TREES
(SEE EMISSOR SCHEDULE)

EMISSION SCHEDULE

<table>
<thead>
<tr>
<th>Tree Size</th>
<th>Number Of Multi Outlet Emitters</th>
<th>Outlet Quantity = Emitter CFH Total</th>
<th>1st Set Of Emission Points</th>
<th>2nd Set Of Emission Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Gal</td>
<td>1-2 GPH=12 GPH</td>
<td>3 @ 12&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>24&quot; Box</td>
<td>1-2 GPH=12 GPH</td>
<td>4 @ 18&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>30&quot; Box</td>
<td>1-2 GPH=12 GPH</td>
<td>6 @ 21&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>36&quot; Box</td>
<td>1-2 GPH=12 GPH</td>
<td>6 @ 24&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>42&quot; Box</td>
<td>1-2 GPH=12 GPH</td>
<td>6 @ 27&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>48&quot; Box</td>
<td>2-2 GPH=24 GPH</td>
<td>6 @ 12&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>54&quot; Box</td>
<td>2-2 GPH=24 GPH</td>
<td>6 @ 15&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>60&quot; Box</td>
<td>2-2 GPH=24 GPH</td>
<td>6 @ 18&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>66&quot; Box</td>
<td>3-2 GPH=36 GPH</td>
<td>6 @ 24&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>72&quot; Box</td>
<td>7-2 GPH=48 GPH</td>
<td>6 @ 24&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
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<tr>
<td>84&quot; Box</td>
<td>7-2 GPH=48 GPH</td>
<td>6 @ 24&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
<tr>
<td>≥ 90&quot; Box</td>
<td>4-2 GPH=48 GPH</td>
<td>8 @ 33&quot;</td>
<td>22.5'</td>
<td>22.5'</td>
</tr>
</tbody>
</table>
NOTES:
1. BEDDING SHALL BE PLACED AND LEVELED PRIOR TO INSTALLATION OF BURY ITEM.
2. BACKFILL SHALL BE PLACED IN MAXIMUM 6" LIFTS.
3. SLEEVE ALL PIPE AND WIRE SEPARATELY. SLEEVE 2 X DIAM. OF PIPE (MIN. 2"), ONE PIPE PER SLEEVE, SLEEVES TO BE PREVACED AND SOLVENT WELDED.
4. ALL PIPE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS WITH PIPE LABELING FACING UP FOR INSPECTION PURPOSES. PROVIDE A MINIMUM OF 2" CLEARANCE TO SIDE OF TRENCH AND BETWEEN PIPES.
5. ALL 120 V. WIRE SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
6. TAPE AND BUNDLE IRRIGATION CONTROL WIRES EVERY 10'. PROVIDE LOOSE 20" LOOP AT ALL CHANGES OF DIRECTION OVER 30°.
7. ALL REMOTE CONTROL VALVE WIRES NOT INSTALLED WITH MAINLINE PIPE SHALL BE INSTALLED IN A MINIMUM 1" SCHEDULE 40 GREY ELECTRICAL CONDUIT OR AS APPROVED.
8. "NON-POTABLE" WARNING TAPE TO BE INSTALLED ON ALL PRESSURIZED MAINLINES 12" ABOVE THE PIPE.
9. INSTALL ONE ADDITIONAL SLEEVE SIZE TO MATCH THE LARGEST REQUIRED SLEEVE WITH ENDS TAPED FOR FUTURE USE.
10. SLEEVES TO EXTEND A MINIMUM OF 12" PAST HARDSCAPE PLANTERS, CURBS, SIDEWALKS, ETC. SLEEVES TO BE STAGGERED/OFFSET SO THAT SLEEVE USE IS NOT OBSTRUCTED BY OTHER PIPES.
11. WHERE PRESSURE SUPPLY PIPING IS INSTALLED WITHOUT CONTROL WIRING, A 14 GA. TRACKING WIRE SHALL BE INSTALLED.
NOTES

1. MINIMUM THRUST BLOCK AREAS ARE BASED ON A SOIL BEARING CAPACITY OF 3000 LBS/SF

2. THRUST BLOCK SHALL EXTEND INTO UNDISTURBED SOIL.

3. THRUST BLOCK SHALL BE MAG SECT. 725-CLASS C.

4. MAINLINE PIPING 4" AND LARGER SHALL HAVE MEGA/LUG JOINT RESTRAINTS INSTALLED AT ALL FLOW DIRECTION CHANGES (CONCRETE THRUST BLOCK NOT REQUIRED IF BELL END HARNESS JOINT RESTRAINTS ARE INSTALLED PER MAG 303-1 AND 303-2).
LIST OF MATERIALS

1. ROTOR SPRINKLER HEAD
2. STREET ELL (1 OF 3) SCH 40 PVC
3. PVC LATERAL PIPE
4. SCH 80 NIPPLE TBE

NOTES

1. SWING JOINT TO BE THE SAME SIZE AS SPRINKLER HEAD INLET.
2. NO PRE-FAB SWING JOINTS
3. NO MARLEX FITTINGS
LIST OF MATERIALS

1. 4" POP-UP SPRAY SPRINKLER HEAD
2. STREET ELL (1 OF 3) SCH 40 PVC
3. PVC LATERAL PIPE
4. SCH 80 NIPPLE TUBE

NOTES:

1. SWING JOINT TO BE THE SAME SIZE AS SPRINKLER HEAD INLET.
2. NO PRE-FAB SWING JOINTS
3. NO MARLEX FITTINGS
LIST OF MATERIALS
1. 12" POP-UP SPRAY SPRINKLER HEAD
2. STREET ELL (1 OF 3) SCH 40 PVC
3. PVC LATERAL PIPE
4. SCH 80 NIPPLE TBE

SWING JOINT ASSEMBLY ELEVATION
SCALE: NTS

SWING JOINT ASSEMBLY PLAN
SCALE: NTS

NOTES
1. SWING JOINT TO BE THE SAME SIZE AS SPRINKLER HEAD INLET
2. SWING JOINT SHALL BE CONNECTED TO BOTTOM OUTLET
3. NO PRE-FAB SWING JOINTS
4. NO MARLEX FITTINGS
CARSON/BROOKS 10" ROUND VALVE BOX WITH LOCKING "T" STYLE COVER (SUPPLY WITH STAINLESS STEEL BOLTS). INSTALL H-20 TRAFFIC-RATED BOX IN HIGH TRAFFIC AREAS AS DETERMINED BY C.O.S.

FINISH GRADE

QUICK COUPLING VALVE (44K/1" KEY OPERABLE)

1" X 1/4" X 24" ANGLE IRON WITH STAINLESS STEEL U-BOLT

BRICK PAVER (TYP. 3)

6" MIN. DEPTH PEA GRAVEL

PVC MAINLINE PIPE

NOTES:
1. EACH QUICK COUPLER SHALL BE IN A SEPARATE VALVE BOX.
2. SWING JOINT SHALL BE THE SAME SIZE AS QUICK COUPLER VALVE.
3. NO PRE-FAB SWING JOINTS.
4. U-BOLT TO BE SECURED WITH LOCK WASHERS AND BACK-UP LOCKING NUT.
NOTE
1. BALL VALVE SHALL MATCH NOMINAL SIZE OF MAINLINE PIPE

1-1/2" & SMALLER MAINLINE ISOLATION BALL VALVE ASSEMBLY

CARSON/BROOKS STANDARD BOX WITH LOCKING "T" STYLE COVER (SUPPLY WITH STAINLESS STEEL BOLTS)
INSTALL H-20 TRAFFIC RATED BOX IN HIGH TRAFFIC AREAS AS DETERMINED BY THE CITY OF SCOTTSDALE
1. Gate valve shall match nominal size of mainline pipe.

2. Protect valve body with 10mil plastic prior to installation of rebar & support block.

NOTE:

1. Gate valve shall match nominal size of mainline pipe.

2. Protect valve body with 10mil plastic prior to installation of rebar & support block.

2" & Larger Mainline Isolation Gate Valve Assembly

SCHEDULE: NTS

- 2" Square Operation Nut
- Resilient Seated Ductile Iron Epoxy Coated Gate Valve
- Brick Paver (Typ. 3)
- PVC Mainline Pipe
- #4 Rebar, "U" Shape
- 8" Thick Concrete Support Block

Carson/Brooks 10" Round Valve Box with Locking "T" Style Cover (Supply with Stainless Steel Bolts). Install H-20 Traffic-Rated Box in high traffic areas as determined by C.O.S.
- CARSON/BROOKS VALVE BOX WITH LOCKING "T" STYLE COVER (SUPPLY WITH STAINLESS STEEL BOLTS). INSTALL H-20 TRAFFIC RATED BOX IN HIGH TRAFFIC AREAS AS DETERMINED BY COS.
- EPOXY FILLED TWO PIECE CYLINDER VALVE CONNECTOR (TYP. 1 OF 2).
- ID TAG.
- FINISH GRADE.
- 2" MINIMUM CLEARANCE BETWEEN BOTTOM OF UD AND VALVE FLOW STEM.
- ELECTRIC REMOTE CONTROL VALVE INSTALL HUNTER IBV SERIES VALVE.

NOTES:
1. PROVIDE 30" SLACK WIRE IN 3/4" COILS FOR EACH WIRE ENTERING VALVE BOX.
2. INSTALL VALVE I.D. TAG WITH CONTROLLER IDENTIFICATION AND STATION NUMBER WHEN CORRESPONDS TO THE PLANS.
3. MAINTAIN 2" MIN.-4" MAX. DISTANCE BETWEEN TOP OF CONTROL VALVE AND BOTTOM OF BOX UD.
4. INSTALL D.C. LATCHING SOLENOIDS W/ D.C. CONTROLLERS.
5. FOR BRASS CONTROL VALVES, INSTALL 3" BRASS NIPPLE BETWEEN BALL VALVE AND CONTROL VALVE.

REMOTE CONTROL VALVE AND SOLAR CONTROLLER MASTER VALVE ASSEMBLY
**TYPICAL IRRIGATION WIRE CONNECTION**

**NOTES:**

1. FOR WIRE SIZES NO. 14, 12 AND 10, ALL CONNECTIONS IN VALVE BOXES ONLY.

2. INSTALL SPEARS DS-100 DRI-SPLICE CONNECTORS WITH DS-300 SEALANT.

**STEPS:**

**STEP 1:**
- Slip base socket over end of wires.
- Strip wires approx. 5/8" from ends - twist ends together.
- Apply sealer to outside of sealing plug - fill cavity with sealer.

**STEP 2:**
- Put crimp sleeve over wire ends - crimp sleeve and cut off excess wire.
- Pull base socket over wire end as far as possible.

**STEP 3:**
- Push sealing plug into base socket.
- Push wires to end of base socket to assure complete sealing of connection.

**STEP 4:**
- Dri-Spline type wire connector.
**NOTE:**

1. ALL WIRE SLEEVES TO BE SHC. 40 PVC AND SHALL BE INSTALLED WITH A MINIMUM OFFSET AT THE JOINTS TO PERMIT EASY INSTALLATION AND REMOVAL OF CONTROL AND COMMON WIRES. ALL WIRES SHALL BE INSTALLED IN SLEEVES UNDER THE PAVED AREAS. SLEEVES SHALL EXTEND AT LEAST 12” BEYOND THE EDGES OF THE PAVEMENT. SIZE OF SLEEVES SHALL BE AS SHOWN.

<table>
<thead>
<tr>
<th>WIRE SIZE (AWG)</th>
<th>2”</th>
<th>2-1/2”</th>
<th>3”</th>
<th>WIRE SIZE (AWG)</th>
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</thead>
<tbody>
<tr>
<td>14</td>
<td>25</td>
<td>40</td>
<td>56</td>
<td>14</td>
</tr>
<tr>
<td>12</td>
<td>20</td>
<td>33</td>
<td>50</td>
<td>12</td>
</tr>
</tbody>
</table>

REVISED: 4/25/07

APPROVED BY: Scottsdale Standards & Specifications Committee
TRAIL ACCESS GATES

TYPE I GATE w/ NOTCHED LOG

POST FOOTING DETAIL

NOTCHED LOG DETAIL

NOTES:
1. All Concrete Shall Be Class "B".
3. Treated Wood Per MAG Section 779.

APPROVED BY:
Scottsdale Standards & Specifications Committee

City of Scottsdale
Standard Details

DETAIL NO. 2680-1

TRAIL ACCESS GATES

DETAIL NO. 2680-1
**Type II Gate**

- B: 8'
- A: 8'
- x: 12”
- Optional Type I Gate

**Type III Gate**

- B: 8'
- A: 8'
- x: 12”
- Optional Type I Gate

**Type IV Gate**

- B: 8'
- A: 8'
- x: 12”
- Optional Type I Gate

**Buried Stone Detail**

- 2/3 φ Stone
- 1/3 φ
- 8” to 12” φ

**Typical Rail Elevation**

- Type II Gate
- Type III Gate
- Type IV Gate

**Type II and III Gate Dimensions**

<table>
<thead>
<tr>
<th>Gate Barrier</th>
<th>A (7')</th>
<th>B (4')</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>7'</td>
<td>4'</td>
</tr>
<tr>
<td>Buried Rocks</td>
<td>4'</td>
<td>4'</td>
</tr>
</tbody>
</table>

**Note:**

Gate barriers for Type II, III and IV gates shall be buried stones or Type I gate as shown on plan.
NOTES:
1. Provide water bars at a minimum 100' interval where trail grade is equal to or greater than 6% and at all locations as shown on plans.
2. Treated wood per MAG Section 779.
**TRAIL SAFETY BARRIERS**

**Standard Details**

**City of Scottsdale**

**DETAIL NO.**

**POST AND RAIL**

**2682**

**City of Scottsdale Standard Details**

**APPROVED BY:**

Scottsdale Standards & Specifications Committee

**TRAIL SAFETY BARRIERS**

**CONCRETE FOOTING DETAIL**

**POST CONNECTION DETAIL**

**ELEVATION**

**PLAN**

**NOTES:**

2. Treated Wood Posts Per MAG Section 779.

**STEEL RAIL**

**See Post Connection Detail**

**See Footing Detail**

Cope Pipe Ends Prior To Welding (Typical)

Grind Smooth (Typical)

**Optional Additional Horizontal Rail – 2 Max. – Spaced Equally.**

**Dig 12"Ø Post Hole, Backfill With Native Material And Compact To Secure Post**

**2"Ø Steel Pipe (Typ) 8' Max.**

**Material And Compact Backfill With Native Dig 12"Ø Post Hole, To Secure Post**

**Bevel As Shown**

**1"**

**Typ.**

**2"Ø Steel Pipe (Typ)**

**2"x 4" Split Rail**

**Toe Nail Both Sides**

**4"Ø Treated Wood Post**

**1"**

**2"x 4"**

**3'-0"**

**4'-8"**

**14"**

**14"**

**14"**

**14"**
1. Signs shall conform to C.O.S. Supplemental Specifications, Section 402.3.

2. Signs to be mounted on square perforated tubing per C.O.S. Std Det 2131 within C.O.S. Right-of-Way. Treated wood post may be used for trail markers located outside C.O.S. Right-of-Way.

3. Legends shall be reflectorized white vinyl sheeting on a green or brown vinyl background unless otherwise approved by the City of Scottsdale.

4. For signs located within Scenic Corridors, all sign backs shall be finished with a non-reflective dark color such as "Western Reserve 8716N Frazee" or similar, unless signs will be installed back to back on the same post.

   4"x4" Treated Wood Sign Post Per MAG Section 779

   Hand Compacted Backfill

   Fasten With (2) 1/2"x 2" Log Screw With (2) Flat Washers or (2) 1/2"x 4 1/2" Bolts With (4) Flat Washers, Burr Threads And Nuts With Center Punch.


   Square Perforated Tubing Sign Post Per C.O.S. Std Det 2131

   See COS Std. Detal 2684 for Trail Marker Sign

   4"x4" Treated Wood Sign Post Per Per MAG Section 779

   Hand Compacted Backfill

   See Wood Post Sign Mounting Detal (Typ.)

   TRAIL MARKER

   WOOD POST SIGN MOUNTING DETAIL

   TRAIL CROSSING SIGN

   TRAIL SIGNS
NOTES:

1. Signs shall conform to COS Spec. Sect. 402.3.

2. The sign substrate shall be treated aluminum with a thickness of 0.080".

3. The sign face shall have ASTM Type IV reflectorized sheeting with a brown screen printed or translucent acrylic EC overlay film reflective legend. Brown color shall be Pantone PMS 483 or closest equivalent. "NO MOTORIZED VEHICLES" portion shall be red text on white background except motor vehicle image shall be black.

4. Electronic version of sign graphics available upon request.

5. See COS Std. Detail 2683 for post and mounting details.