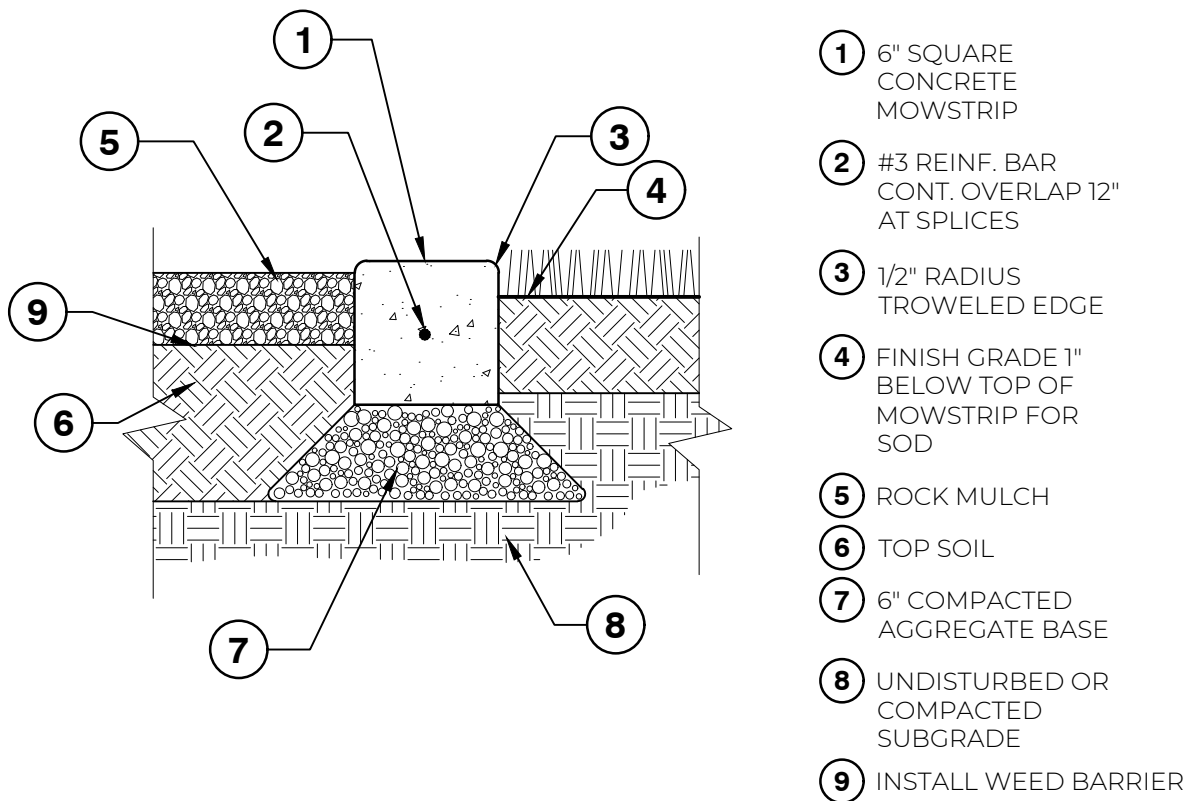


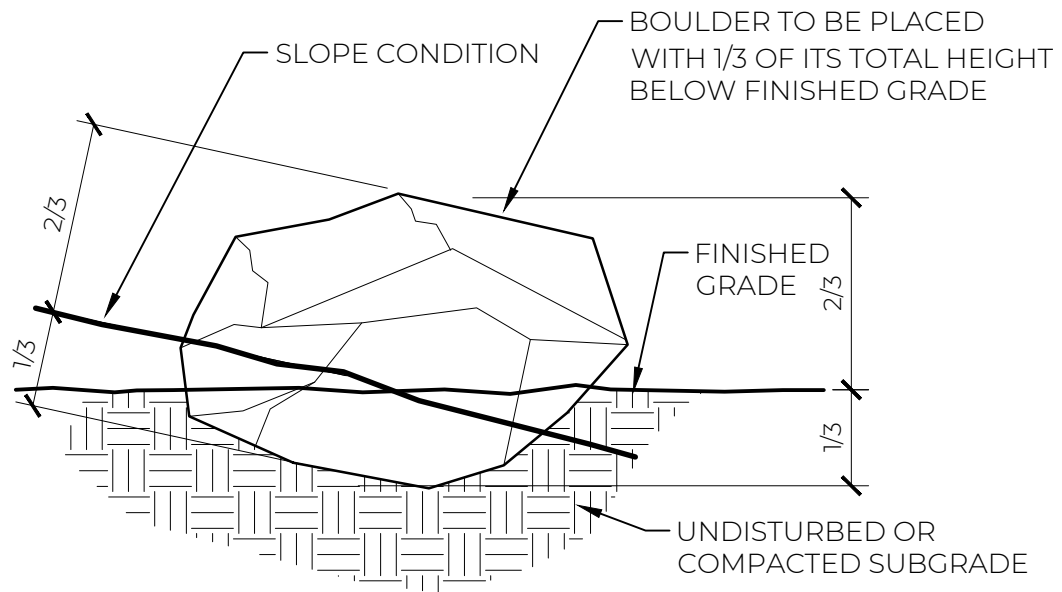


HYRUM CITY IRRIGATION & LANDSCAPE DESIGN STANDARDS & SPECIFICATIONS

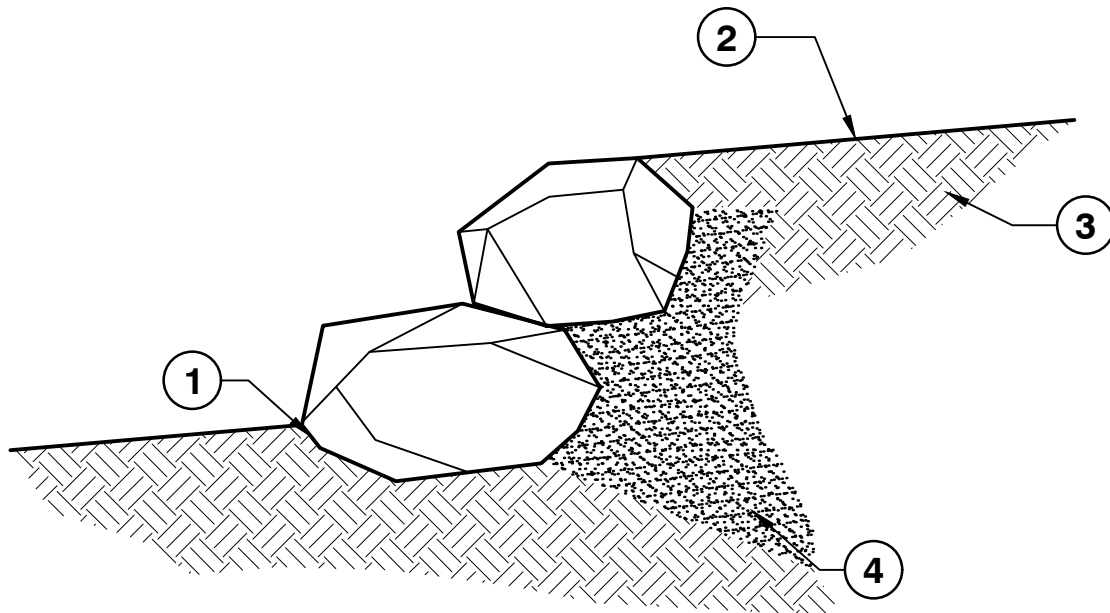
MARCH 2025



NOTE:
PROVIDE CONSTRUCTION OR CONTROL JOINTS AT 5' O.C. MAX.

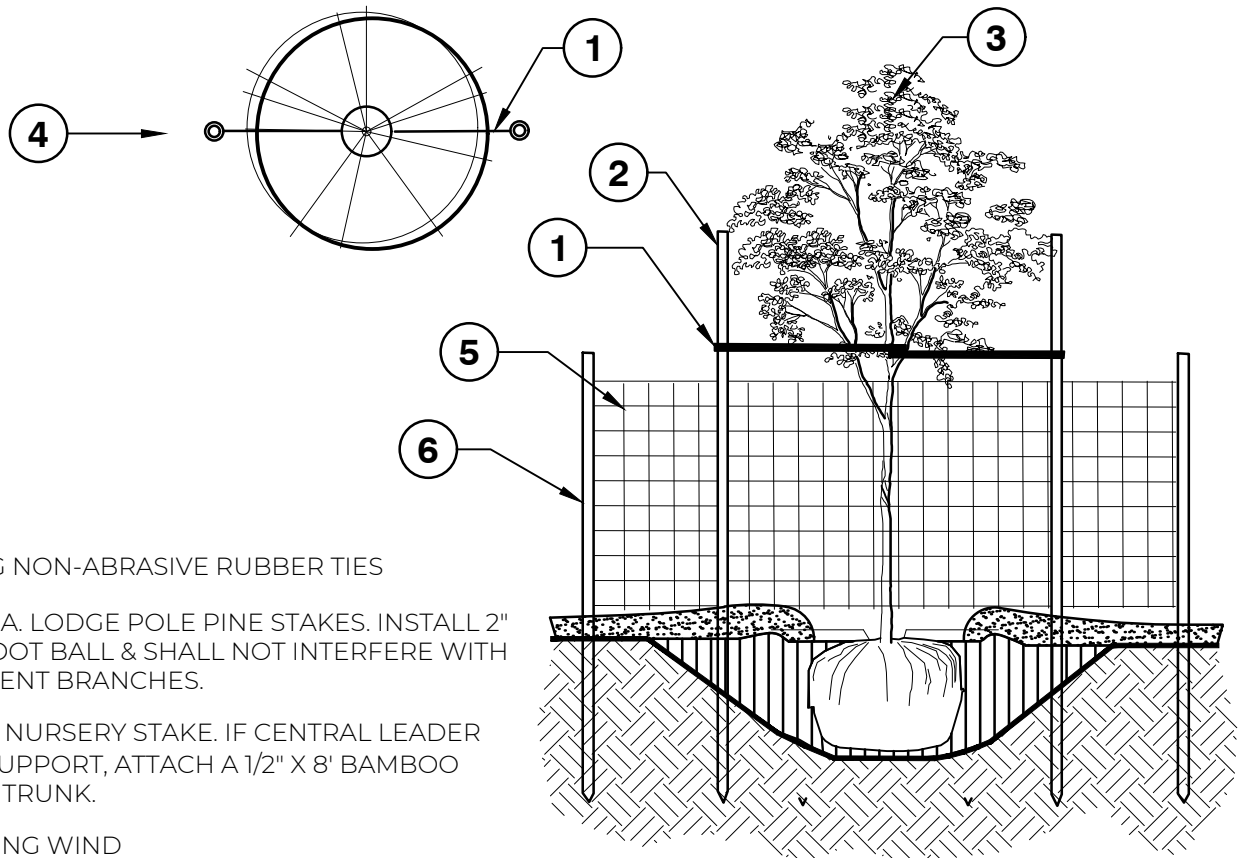


- ① MINIMUM 12" EMBEDMENT BELOW ADJACENT GRADE
- ② FINISH GRADE
- ③ COMPACTED BACKFILL
- ④ CLEAN, FREE DRAINING GRANULAR FILL 12" THICK MIN. BEHIND ROCK



NOTES:

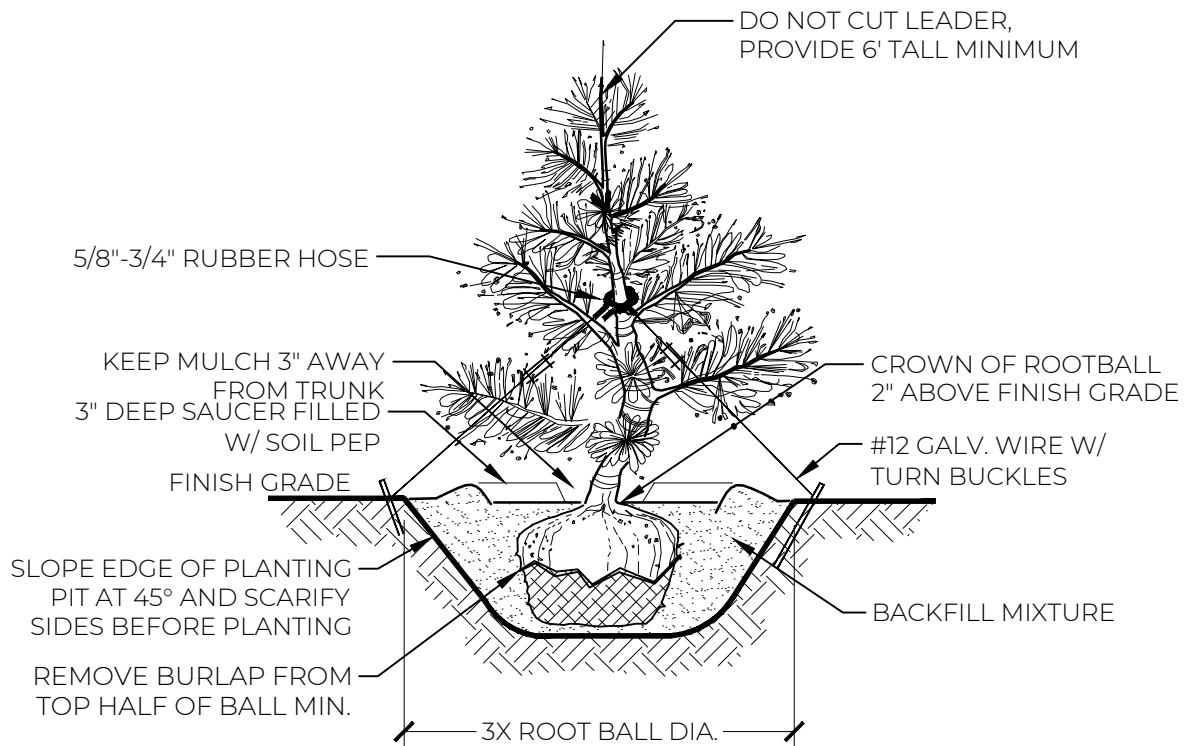
1. MAXIMUM WALL HEIGHT SHALL BE 4 FEET FROM BOTTOM OF EMBEDDED BOULDER TO TOP OF HIGHEST BOULDER.
2. ON ANY HILL WITH A SLOPE GREATER THAN 30% A STRUCTURAL ENGINEER STAMPED DESIGN IS REQUIRED.
3. WALL SHALL MEET CURRENT ADOPTED BUILDING CODE REQUIREMENTS.



- ① 32" LONG NON-ABRASIVE RUBBER TIES
- ② 2, 1.1/2" DIA. LODGE POLE PINE STAKES. INSTALL 2" FROM ROOT BALL & SHALL NOT INTERFERE WITH PERMANENT BRANCHES.
- ③ REMOVE NURSERY STAKE. IF CENTRAL LEADER NEEDS SUPPORT, ATTACH A 1/2" X 8' BAMBOO POLE TO TRUNK.
- ④ PREVAILING WIND
- ⑤ DEER FENCING ON NON DEER RESISTANT TREES
- ⑥ 6' POST SHALL BE INSTALLED 6' FROM BASE OF TREE TO SUPPORT DEER FENCING

NOTES:

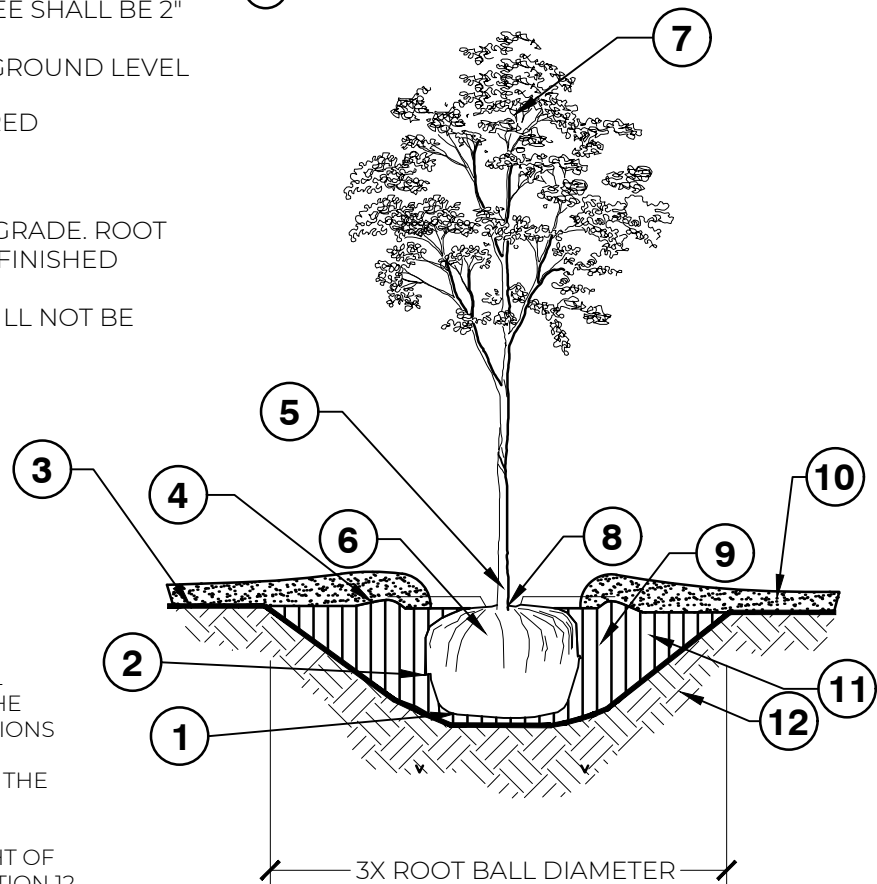
1. STAKE ALL TREES THAT ARE DETERMINED TO REQUIRE A STAKE (CITY DISCRETION) AT THE TIME OF PLANTING.
2. PLACE TWO 1 1/2 INCH - 2 INCH DIAMETER WOOD TREE STAKES 1 TO 2 FEET FROM THE CENTER AND DRIVE STAKE 24 INCHES INTO SOLID GROUND. FASTEN THE TREE TO THE UPPER END OF THE STAKE IN AT LEAST TWO LOCATIONS USING .
3. DEER FENCE SHALL BE 6 FEET TALL, BLACK POLYPROPYLENE PLASTIC WITH A MESH DIMENSION OF APPROX. 1.75" X 2". PROVIDE SUBMITTAL FOR OWNER TO APPROVE PRIOR TO INSTALLATION.



NOTES:

1. RETAIN NATURAL SHAPE OF TREE
2. DO NOT PRUNE PRIOR TO INSTALLATION.
3. ONLY TREES WITH SINGLE LEADERS WILL BE ACCEPTED.
4. STAKE GUYS W/ 2X2X24" STAKES.

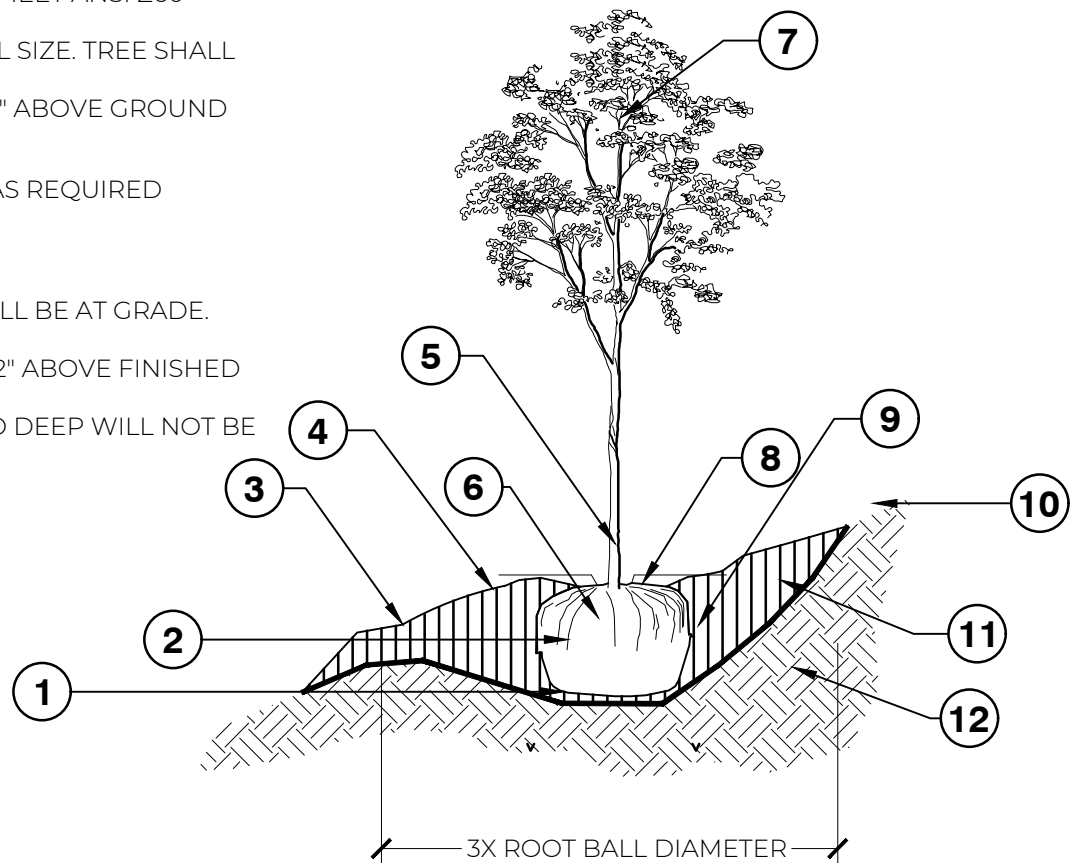
- 1 BOTTOM OF ROOT BALL TO REST ON EXISTING OR RECOMPACTED SOIL.
- 2 REMOVE CONTAINERS, WIRE, BASKETS, ETC. PRIOR TO PLANTING. COMPLETELY REMOVE TWINE AND BURLAP FROM B&B STOCK
- 3 FINISHED GRADE
- 4 ROUND TOP SOIL BERM 4" HIGH X 8" WIDE SURROUNDING PERIPHERY OF ROOT BALL.
- 5 TRUNK CALIPER SHALL MEET ANSI Z60 CURRENT EDITION FOR ROOT BALL SIZE. TREE SHALL BE 2" MIN. CALIPER, MEASURED 20" ABOVE GROUND LEVEL
- 6 ROOT BALL, MODIFIED AS REQUIRED
- 7 CENTRAL LEADER
- 8 TOP OF ROOT BALL SHALL BE AT GRADE. ROOT COLLAR SHALL NOT BE 2" ABOVE FINISHED GRADE. ANY TREE PLANTED TOO DEEP WILL NOT BE ACCEPTED.
- 9 PRIOR TO MULCHING, LIGHTLY TAMP SOIL AROUND ROOT BALL. NO NOT OVER COMPACT. POUR WATER AROUND ROOTBALL TO SETTLE BACKFILL.
- 10 4" MULCH LAYER. NO MORE THAN 1" MULCH TO COVER ROOT BALL.
- 11 DIG AND TURN SOIL TO REDUCE COMPACTION TO THE AREA AND DEPTH SHOWN. SLOPE SIDES.
- 12 EXISTING SOIL



NOTES:

1. THE SPACING & SPECIES OF TREES SHALL CONFORM TO THE REQUIREMENTS OF THE PLANNING COMMISSION. ANY SUBSTITUTIONS MUST BE APPROVED BY HYRUM CITY.
2. TREES SHOULD BE SELECTED BASED ON THE AREA'S SOIL AND CLIMATE.
3. TREES SHALL BE KEPT:
 3. OUTSIDE OF THE INTERSECTION SIGHT OF TRIANGLES AS DEFINED WITHIN SECTION 12 OF THE DEVELOPMENT CODE.
 3. NOT LESS THAN 20' FROM LAMP STANDARDS AND POWER POLES.
 3. NOT LESS THAN 10' FROM FIRE HYDRANTS.
 3. NOT LESS THAN 5' FROM SERVICE WALKS & DRIVEWAYS.
 3. NOT LESS THAN 5' FROM WATER METERS.
4. THE DEVELOPER SHALL PAY THE INSTALLATION COST OF PARKWAY TREES. PARKWAY TREES SHALL BE INSTALLED ON ALL STREETS IN CONFORMANCE TO THE STANDARD DETAILS, AS REQUIRED BY PLANNING AND ZONING.
- TREES TO BE INSPECTED BY HYRUM CITY AT DELIVERY AND/OR PRIOR TO PLANTING TO ENSURE QUALITY AND SIZE.
- TREES TO BE INSPECTED DURING PLANTING BY HYRUM CITY TO ENSURE PROPER INSTALLATION.
- TREES MAY BE ACCEPTED AFTER 30 DAYS MAINTENANCE TIME FROM INSPECTION, PROVIDED IT IS WEED FREE & OF NORMAL, ACCEPTABLE GROWTH FOR THE TIME OF YEAR.
- PLANT TREE TO ITS NORMAL DEPTH & PUDDLE WITH A RUNNING STREAM OF WATER FROM A HOSE. PREPARE PLANTING HOLE & STAKE TREE AS REQUIRED BY CITY REPRESENTATIVE.

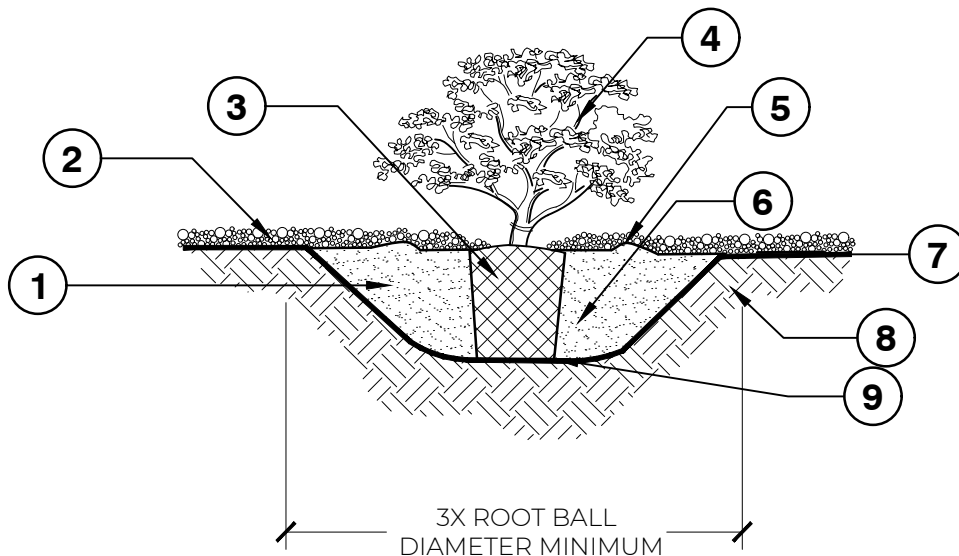
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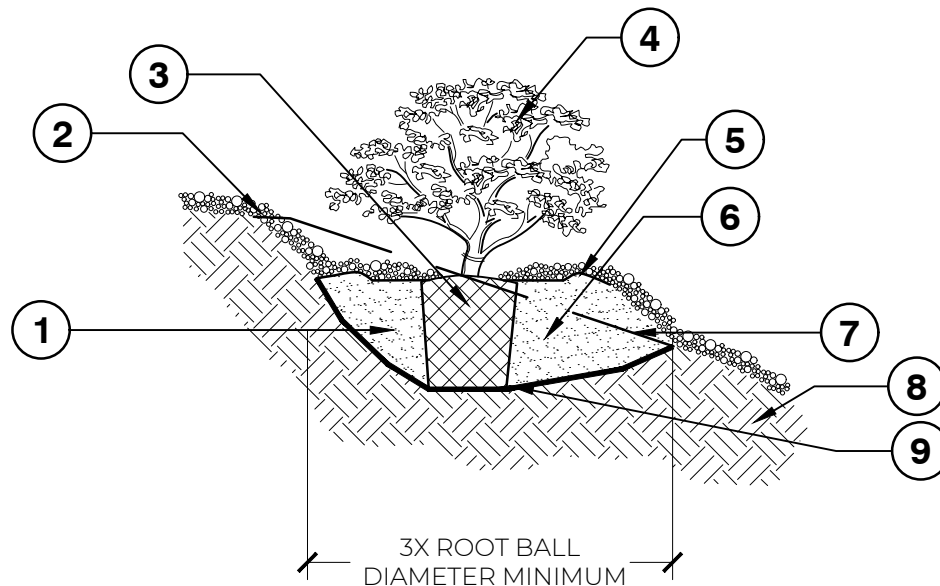
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- ② 4" LAYER OF MULCH. NO MORE THAN 1" MULCH TO COVER ROOT BALL.
- ③ ROOTBALL
- ④ SHRUB
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- ⑦ FINISHED GRADE
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- ⑨ BOTTOM OF ROOTBALL TO REST ON EXISTING OR RECOMPACTED SOIL



NOTES:

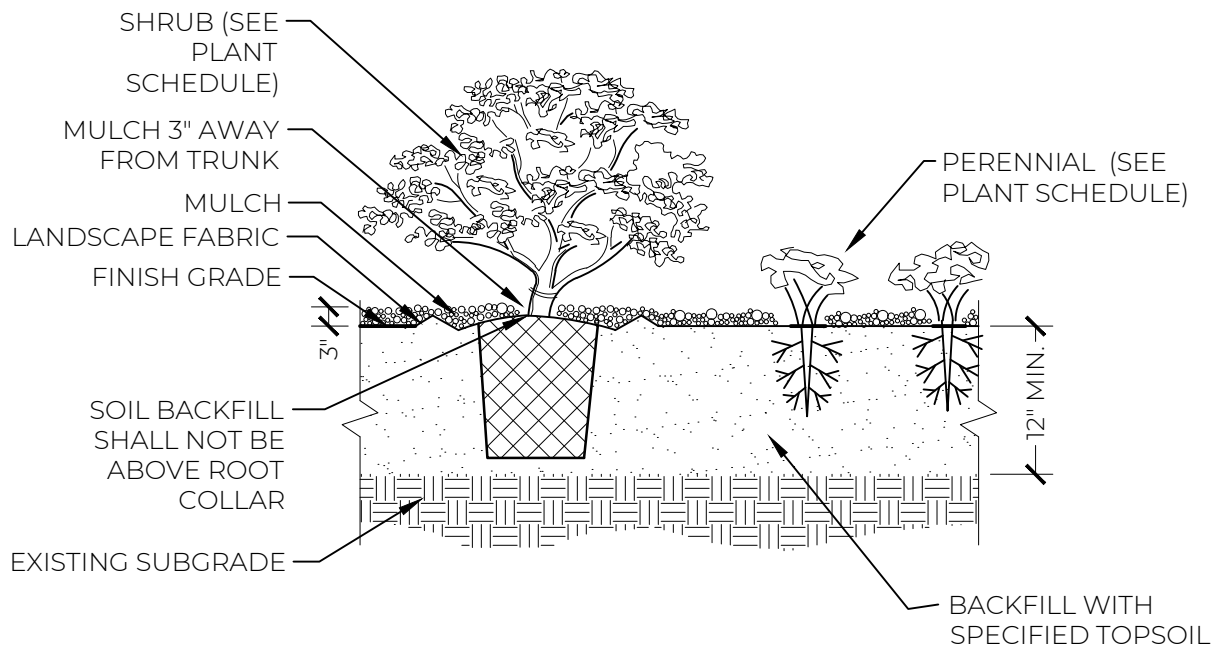
1. ALL SHRUBS SHALL BE A MINIMUM 5 GALLON SIZE UNLESS WRITTEN APPROVAL IS OBTAINED & VARIETY, SIZE, & SPACING IS STATED.
2. ALL CONTAINERS, WIRE BASKETS, ETC. SHALL BE REMOVED FROM SHRUBS PRIOR TO PLANTING. ALL B&B STOCK SHALL HAVE THE BAILING TWINE AND BURLAP REMOVED.
3. ANY SHRUBS PLANTED TOO DEEP WILL NOT BE ACCEPTED. ROOT BALL SHALL BE LEVEL WITH FINISHED GRADE. ROOT COLLAR SHALL BE 2" ABOVE FINISHED GRADE.
4. SHRUBS SHOULD BE SELECTED BASED ON THE AREA'S SOIL & CLIMATE.
5. SHRUBS MAY BE ACCEPTED AFTER 30 DAYS MAINTENANCE TIME FROM INSPECTION, PROVIDED IT IS WEED FREE & OF NORMAL, ACCEPTABLE GROWTH FOR THE TIME OF YEAR.
6. PLANT SHRUB TO ITS NORMAL DEPTH & PUDDLE WITH A RUNNING STREAM OF WATER FROM A HOSE.

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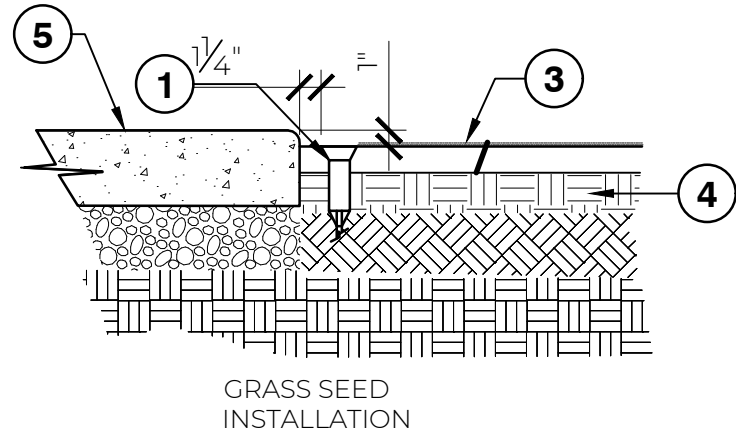
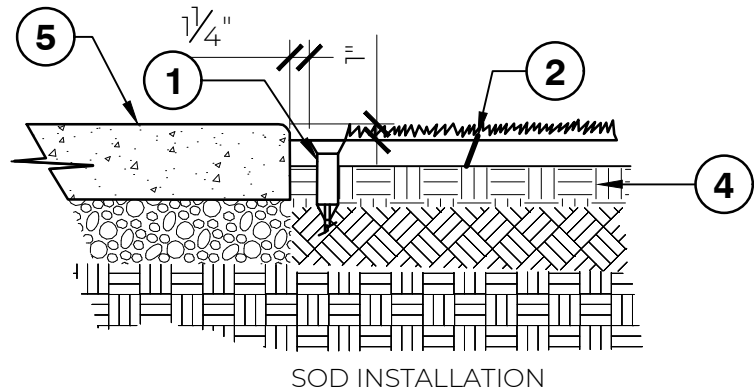
1. THIS DETAIL TO BE USED FOR SHRUBS PLANTED ON A SLOPE BETWEEN 5% (20:1) AND 50% (2:1).
2. ALL SHRUBS SHALL BE A MINIMUM 5 GALLON SIZE UNLESS WRITTEN APPROVAL IS OBTAINED & VARIETY, SIZE, & SPACING IS STATED.
3. ALL CONTAINERS, WIRE BASKETS, ETC. SHALL BE REMOVED FROM SHRUBS PRIOR TO PLANTING. ALL B&B STOCK SHALL HAVE THE BAILING TWINE AND BURLAP REMOVED.
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7. PLANT SHRUB TO ITS NORMAL DEPTH & PUDDLE WITH A RUNNING STREAM OF WATER FROM A HOSE.



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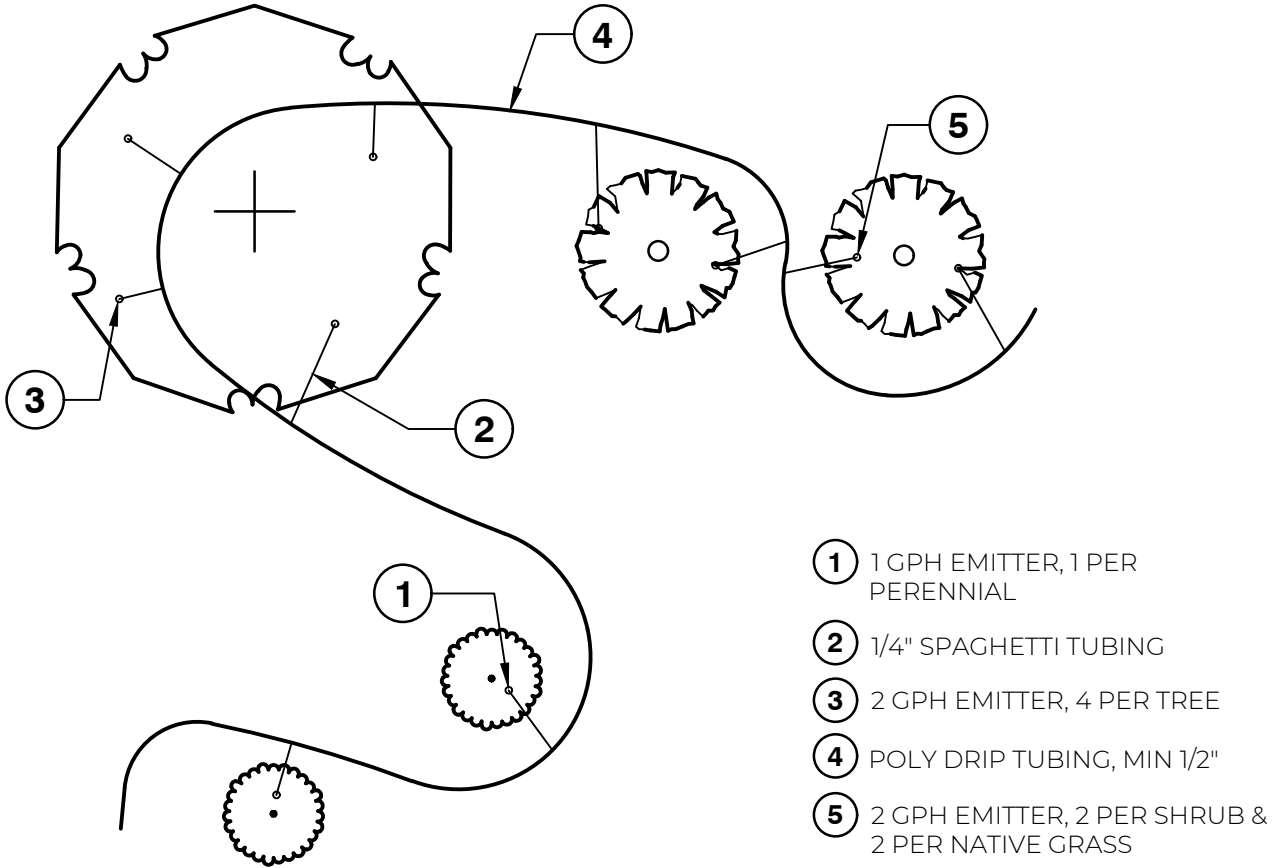
1. LANDSCAPE FABRIC TO BE INSTALLED UNDER MULCH.
2. MULCH SHALL BE WASATCH GREY CHAT, 3/8" MINUS. MULCH SHALL BE 3" THICK AS SHOWN ABOVE.
3. LANDSCAPE FABRIC TO BE CUT AWAY 6 INCHES FROM SHRUB/PERENNIALS AND 12 INCHES FROM TREES

- ① INSTALL SOD OR SEED BED 1" BELOW TOP OF ADJACENT CONCRETE SITE ELEMENT, AS SHOWN.
- ② SOD WITH TIGHT, BEVELED JOINTS
- ③ GRASS SEED BED
- ④ AMEND SOIL AS REQUIRED BY TOPSOIL TEST REPORT
- ⑤ MOWSTRIP, CURB, OR SIDEWALK

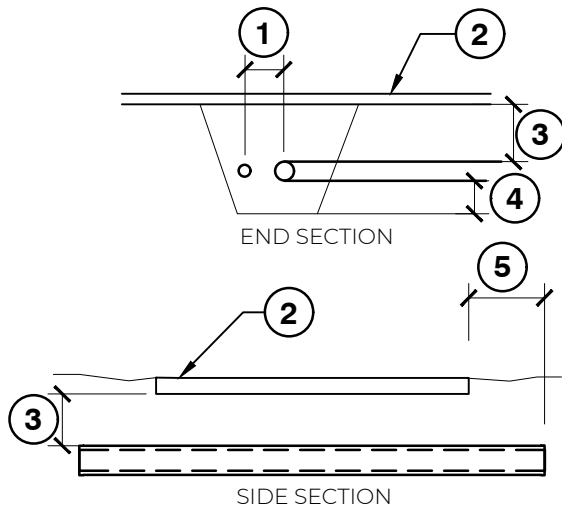


NOTES:

1. SOD MAY BE ACCEPTED 30 DAYS AFTER INSPECTION & AFTER MIN. FOUR CUTTINGS (ONCE EVERY 7 DAYS). IF SOD IMPROVEMENTS ARE NOT ACCEPTED AFTER THIS TIME PERIOD, DEVELOPER SHALL BE REQUIRED TO CONTINUE MAINTENANCE UNTIL ACCEPTED/APPROVED.
2. PREPARE LAWN AREAS AS SPECIFIED UNDER SOIL PREPARATION. SLOPE ALL AREAS TO DRAIN ACCORDING TO THE ARCHITECT'S DRAWINGS & APPROVAL FROM PUBLIC WORKS DEPARTMENT & PARKS DEPARTMENT.
3. RAKE SOD AREAS UNTIL THE SURFACE IS SMOOTH & OF UNIFORM TEXTURE PRIOR TO PLANTING THE TURF.
4. THE FINISHED GRADE OF ALL SOD AREAS SHALL BE BETWEEN 0 & $\frac{1}{4}$ INCHES BELOW SIDEWALK OR ADJACENT PAVEMENT AREAS.
5. SOD MUST BE INSTALLED DURING NORMAL GROWING SEASON. IF DORMANT SOD IS INSTALLED, IT WILL NOT BE ACCEPTED UNTIL THE FOLLOWING NORMAL GROWING SEASON.
6. LAY SOD WITH STAGGERED SEAM.
7. AFTER SOD HAS BEEN LAID, IRRIGATE & THEN ROLL SOD WITH WATER ROLLER (50 POUND MIN. WEIGHT) TO LEVEL SOD & INSURE POSITIVE CONTACT WITH SOIL.
8. SELECT GRASS ACCORDING TO INTENDED USE, LOCATION & MAINTENANCE REQUIREMENTS. DROUGHT TOLERANT GRASSES SHOULD BE UTILIZED WITHIN ALL TURF AREAS.
9. REDUCE THE SIZE OF WATER SENSITIVE LAWNS WITH ENLARGED BEDS & HARDSCAPES. ELIMINATE LAWN AREAS THAT ARE DIFFICULT TO IRRIGATE, INCLUDING LONG & NARROW OR SMALL & ODD-SHAPED AREAS.
10. APPLY COMMERCIAL GRADE FERTILIZER AS PER THE FOLLOWING SPECIFICATIONS:
 - 10.1. 46-0-0 WITH DIMENSION COATED NITROGEN (PRE-EMERGENT) FROM JANUARY 1ST TO MAY 31ST AT A RATE OF 2 POUNDS PER 1,000 SQ. FT.
 - 10.2. 25-5-6 FROM JUNE 1ST TO AUGUST 31ST AT A RATE OF 4 POUNDS PER 1,000 SQ. FT.
 - 10.3. 46-0-0 (50% SLOW RELEASE) SULPHUR COATED UREA FROM SEPTEMBER 1ST TO DECEMBER 31ST AT A RATE OF 2 POUNDS PER 1,000 SQ. FT.



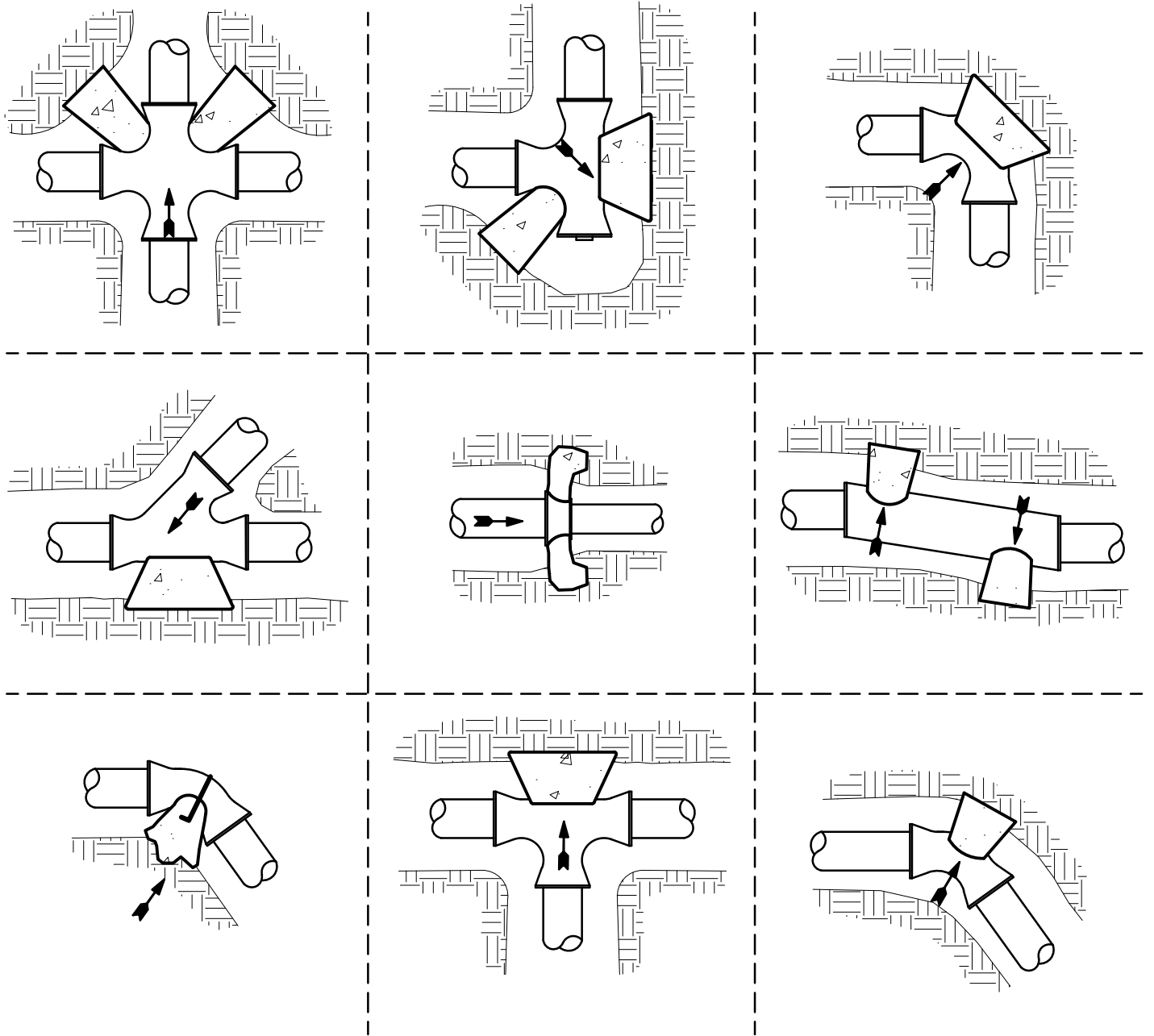
- NOTES:
1. LOCATE EMITTER ON UPHILL SIDE OF PLANT ON SLOPES. BERM SOIL FOR WATER BASIN ON EACH PLANT.
 2. ADD STAPLES EVERY 6 FEET OF LINE MINIMUM AND AT EVERY BEND.



- ① 4" MIN. CLEARANCE BETWEEN PIPES
- ② FINISH GRADE
- ③ 18" MIN, 24" MAX. PIPE COVER
- ④ 2" MIN, PIPE BEDDING
- ⑤ 6" MIN, 18" MAX. PAST EDGE

NOTES:

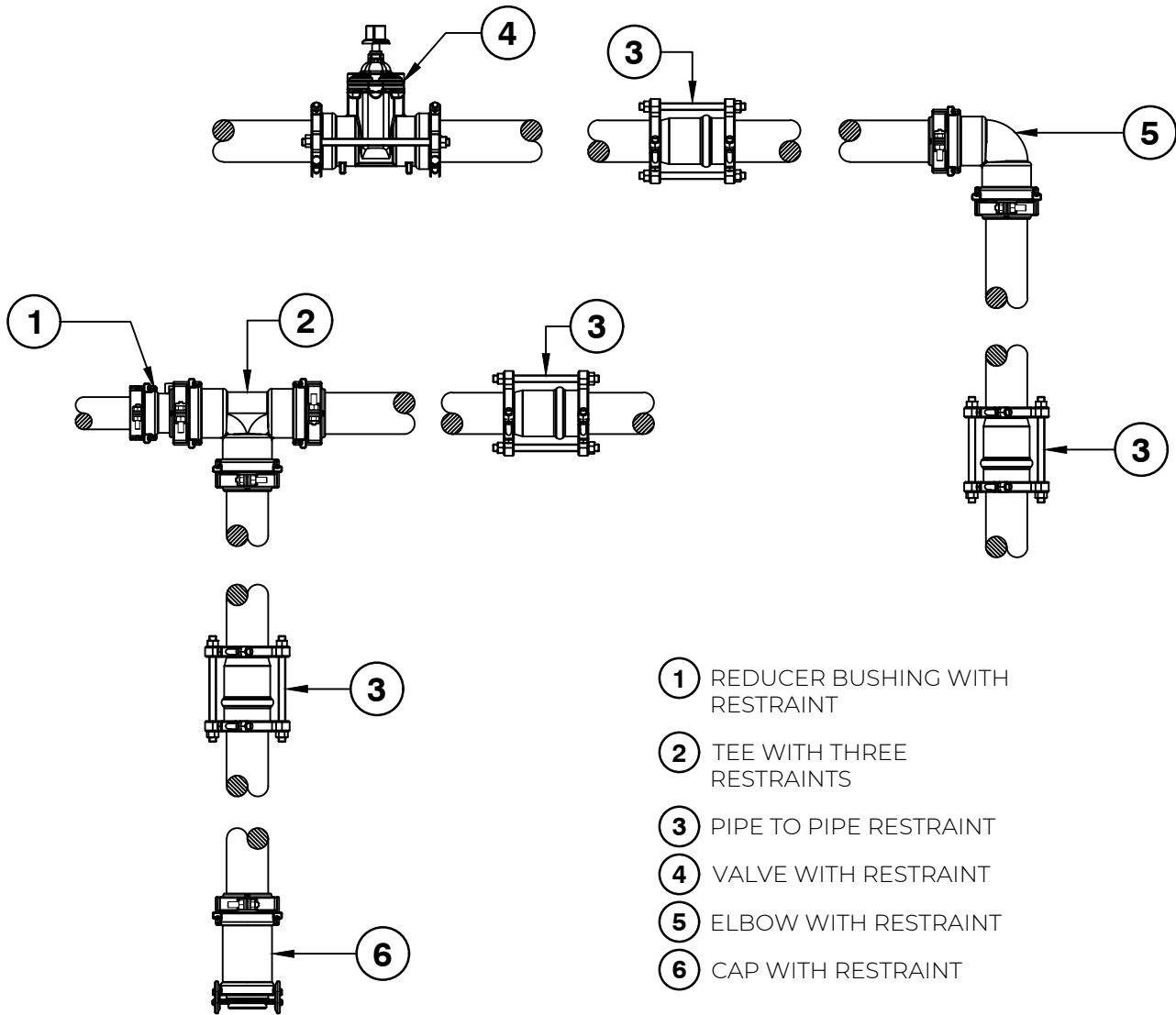
1. SLEEVES TO BE 2X PIPE SIZE WITHIN. JOINTS TO BE WATERTIGHT. MECHANICALLY TAMP TO 95% PROCTOR
2. ALL PIPE SLEEVING SHALL BE SCH. 40 PVC. PIPING UNDER ROAD TO THE WATER METER BOX MUST BE POLYETHYLENE.
3. CUTTING/BREAKING EXISTING CONCRETE IS NOT PERMITTED UNLESS NO OTHER ALTERNATIVE IS POSSIBLE. PIPING UNDER PAVING SHALL BE INSTALLED BY JACKING, BORING, OR HYDRAULIC DRIVING.
4. DESIGNER/CONTRACTOR SHALL MINIMIZE THE AMOUNT OF SLEEVING REQUIRED UNDER PAVING.
5. ALL WIRE SLEEVING SHALL BE GRAY S/40 ELECTRICAL CONDUIT. NO EXCEPTIONS.



NOTES:

1. INSTALL THRUST BLOCK ON ALL 3" AND LARGER FITTINGS.
2. PLACE 6 MIL POLY LINER BETWEEN FITTING AND CONCRETE THRUST BLOCK.
3. ALL CONCRETE THRUST BLOCKS TO BE SET AGAINST UNDISTURBED SOIL.
4. FITTINGS SHALL BE CAST IRON WITH MEGA-LUGS.

←→ DIRECTION OF THRUST (TYP.)



- ① REDUCER BUSHING WITH RESTRAINT
- ② TEE WITH THREE RESTRAINTS
- ③ PIPE TO PIPE RESTRAINT
- ④ VALVE WITH RESTRAINT
- ⑤ ELBOW WITH RESTRAINT
- ⑥ CAP WITH RESTRAINT

NOTES

1. REPRESENTATIVE SAMPLING OF FITTINGS WITH JOINT RESTRAINTS INSTALLED.
2. PIPE TO PIPE RESTRAINTS ARE SHOWN BUT ARE NOT NECESSARILY ALWAYS REQUIRED. REFER TO JOINT RESTRAINT TABLES.

DISTANCE CHART

REFER TO THE FOLLOWING TABLE THAT LISTS THE LENGTH (IN FEET) FOR EACH SIZE/TYPE FITTING WITHIN WHICH ALL JOINTS MUST BE RESTRAINED. ALL FITTINGS AND JOINT RESTRAINS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.

AS AN EXAMPLE: IF YOU ARE INSTALLING A 3" MAINLINE WITH A DIRECTIONAL CHANGE OF 90°, REFER TO CHART UNDER PIPE SIZE TO A 3" AND UNDER BENDS 90 YOU WILL SEE THE DISTANCE OF 11'. IF THERE IS ANY JOINT (VALVE, BELL, ETC.) YOU MUST INSTALL A JOINT RESTRAINT WITHIN 11' OF THE 90° MAINLINE DIRECTIONAL CHANGE.

PIPE SIZE	BENDS				REDUCERS			DEAD END	
	11°	22°	45°	90°	1 STEP	2 STEP	3 STEP	BLIND	SERV. B.
2"	1'	1'	2'	6'	--	--	--	19'	6'
2.5"	1'	2'	4'	9'	4'	--	--	23'	10'
3"	2'	3'	6'	11'	8'	10'	--	30'	15'
4"	2'	4'	9'	20'	14'	20'	31'	45'	25'
6"	3'	6'	13'	29'	30'	40'	53'	63'	40'
8"	4'	8'	15'	38'	33'	55'	63'	75'	70'
10"	5'	9'	19'	45'	36'	56'	75'	96'	90'
12"	5'	10'	21'	53'	38'	60'	83'	112'	110'

INSTALLATION CHART

REFER TO THE FOLLOWING TABLE WHICH LISTS THE NUMBER OF BOLTS, SIZE, AND TORQUE FOR EACH BOLT IN REFERENCE TO THE SIZE OF PIPE WHICH IS BEING RESTRAINED.

AS AN EXAMPLE: IF YOU HAVE A 3" PIPE, YOU WILL NEED 2 BOLTS THAT ARE $\frac{3}{8}$ " X 2.5" AND TIGHTEN THEM WITH A TORQUE WRENCH TO 20 FT-LBS.

PIPE SIZE	NUMBER OF BOLTS	BOLT SIZE	TORQUE FT-LBS.
2"	2	$\frac{3}{8}$ " X 2.5"	20
2.5"	2	$\frac{3}{8}$ " X 2.5"	20
3"	2	$\frac{3}{8}$ " X 2.5"	20
4"	2	$\frac{1}{2}$ " X 3"	50
6"	2	$\frac{1}{2}$ " X 3.5"	50
8"	4	$\frac{1}{2}$ " X 4"	50
10"	4	$\frac{5}{8}$ " X 5.5"	100
12"	4	$\frac{5}{8}$ " X 5.5"	100

THESE CHARTS ARE BASED ON USE OF LEEMCO PRODUCTS AND PROVIDED AS REFERENCE ONLY. CONTRACTOR SHALL CONTACT CORRESPONDING MANUFACTURER REPRESENTATIVE FOR PROPER CHARTS, TRAINING, AND CERTIFICATION IF OTHER PRODUCTS ARE SUBMITTED AND APPROVED. FOR USE OF LEEMCO PRODUCTS, CONTACT THE LEEMCO REPRESENTATIVE, FOR ALL QUESTIONS CONCERNING LEEMCO PRODUCTS.



HYRUM CITY
60 WEST MAIN STREET
HYRUM, UT 84319

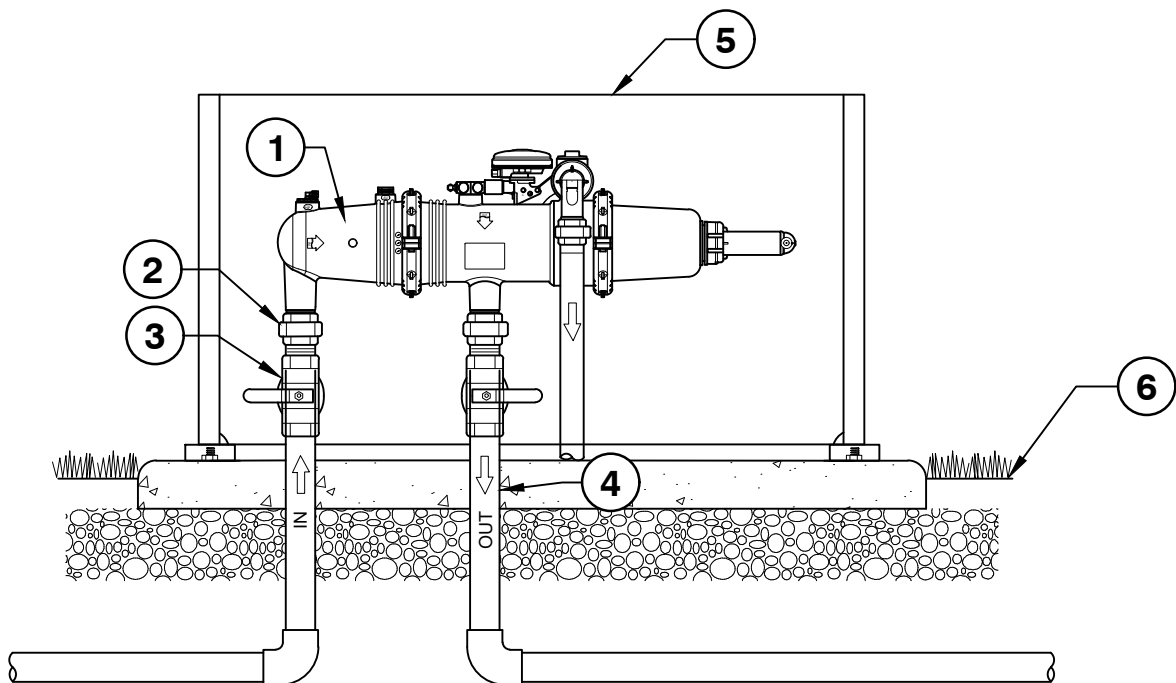
STANDARD DRAWING

JOINT RESTRAINT TABLE

DRAWN:
DESIGN:
REVISION:
DATE: 8/19/2023

SCALE
NONE

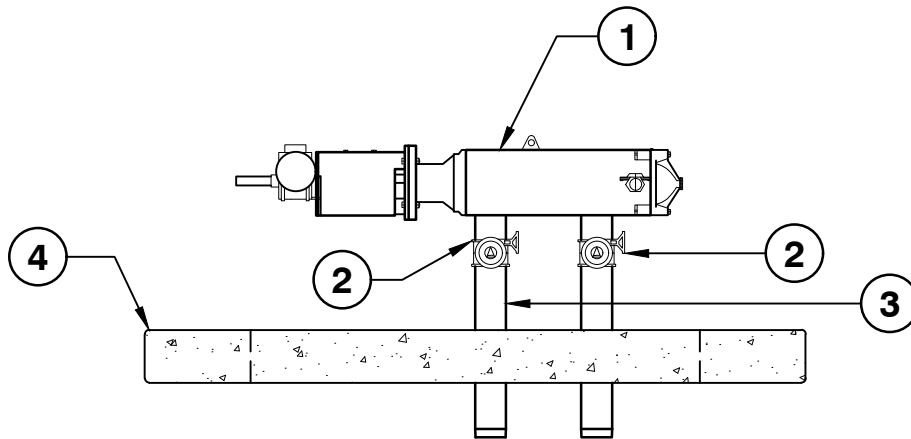
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|---|----------------------------------|---|--|
| 1 | FILTER PER PLAN | 4 | STAINLESS NIPPLES AND FITTINGS AS REQUIRED |
| 2 | STAINLESS UNIONS - SIZE PER PLAN | 5 | STRONGBOX SBBC-60ALHP |
| 3 | STAINLESS STEEL BALL VALVE | 6 | FINISH GRADE |



NOTES:

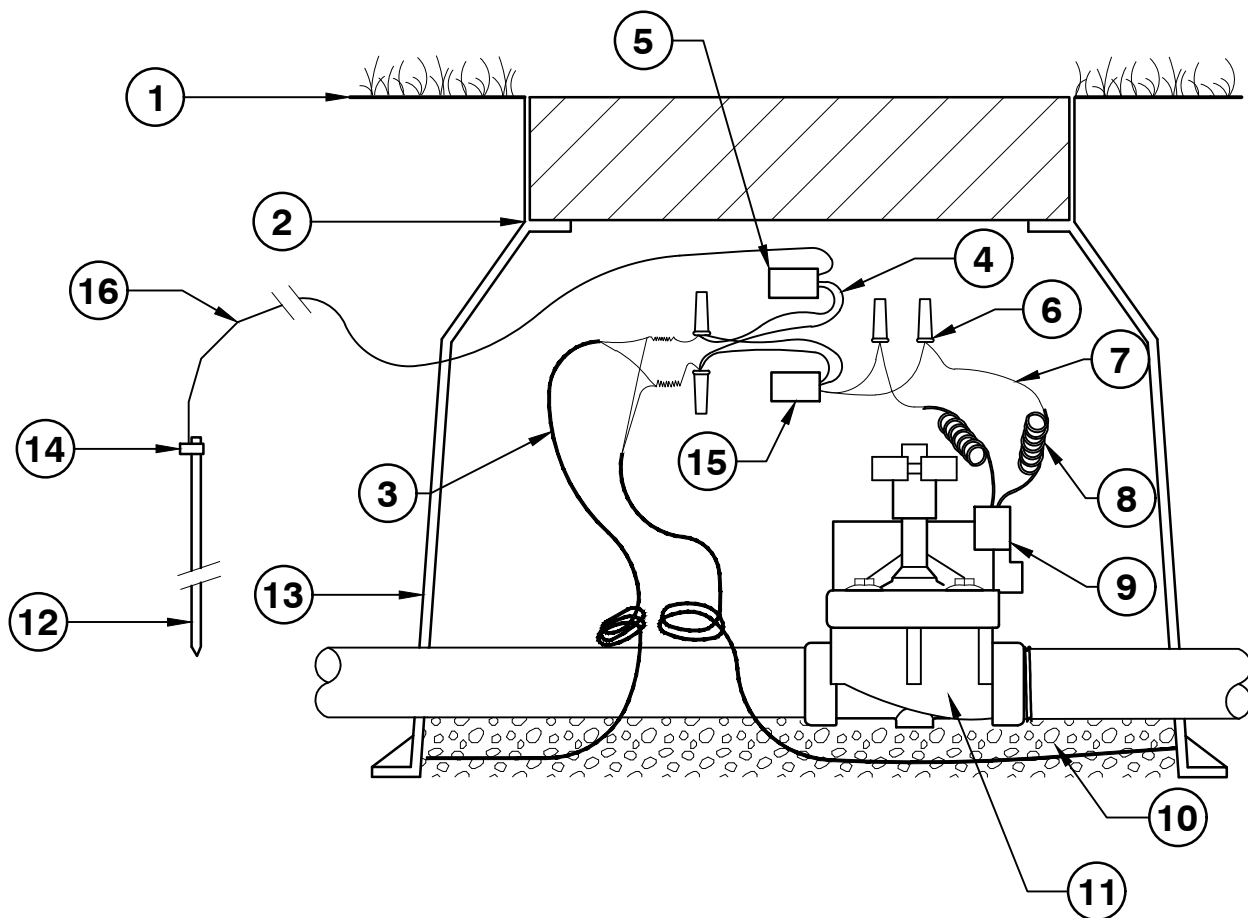
1. MINI SIGMA PER PLAN.
2. STRONG BOX MOUNTED TO CONCRETE PAD. PAD SIZE SHALL BE 6 INCHES WIDER AND LONGER THAT STRONG BOX.
3. GRAVEL INSIDE MOWSTRIP SHALL BE RECESSED FROM THE TOP SO FILTER FITS INSIDE THE STRONG BOX.
4. INTERIOR GRAVEL SHALL BE WASHED SMOOTH GRAVEL $\frac{3}{4}$ " MINUS IN SIZE 16" DEEP.
5. WRAP PIT WITH DEWITT PRO 5 LANDSCAPE FABRIC PRIOR TO FILLING PIT WITH WASHED GRAVEL.

- ① AMIAD SAF AUTOMATIC FLUSH ELECTRIC FILTER.
PROVIDE 120 VAC
POWER.
- ② BUTTERFLY VALVES
- ③ ALL FITTINGS AND SPOOLS TO BE DUCTILE IRON
- ④ 6" THICK POURED CONCRETE PAD. MUST EXTEND 24"
LARGER THAN
SHADOW OF FILTER.

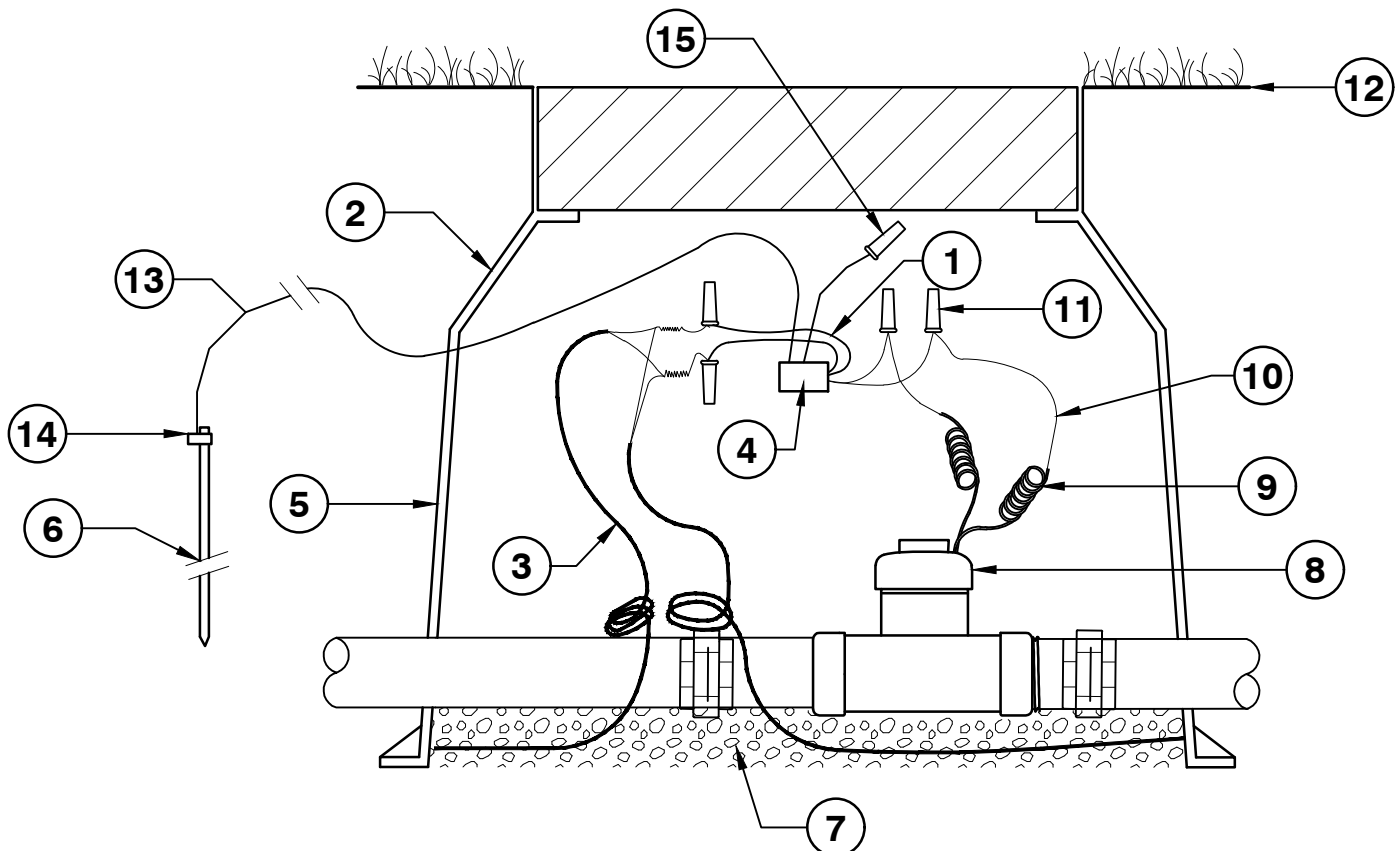


NOTE:
ALL SPRINKLER SYSTEMS SHALL BE EQUIPPED WITH AN
APPROVED SYSTEM FILTER, UNLESS OTHERWISE
REQUIRED/APPROVED BY THE CITY PARKS DEPARTMENT.

- | | |
|---|--|
| ① FINISH GRADE | ⑨ SOLENOID |
| ② VALVE BOX | ⑩ GRAVEL |
| ③ 2-WIRE COMMUNICATION PATH *IN CONDUIT* | ⑪ ELECTRICAL VALVE (SEE SUPPORTING DETAILS) |
| ④ BLUE WIRES TO 2-WIRE COMMUNICATION PATH | ⑫ 5/8" DIA. X 8' COPPER CLAD GROUND ROD DRIVEN INTO GROUND WITH TOP OF ROD A MIN. OF 6" BELOW GRADE. 100 OHMS OR LESS. LOCATE PER WEATHERTRAK REQ'S. |
| ⑤ WT2W-LSP SURGE ARRESTOR (YELLOW CASE) | ⑬ EXTENSION (LENGTH AS REQUIRED) |
| ⑥ 3M DBR/Y-6 SPLICE | ⑭ CAD WELD CONNECTION |
| ⑦ WHITE WIRES TO SOLENOID | ⑮ WT2W-SVD-11 DECODER (BLUE CASE) |
| ⑧ EXPANSION COILS | ⑯ GROUND WIRE OF WT2W-LSP CONNECTED TO GROUND ROD |



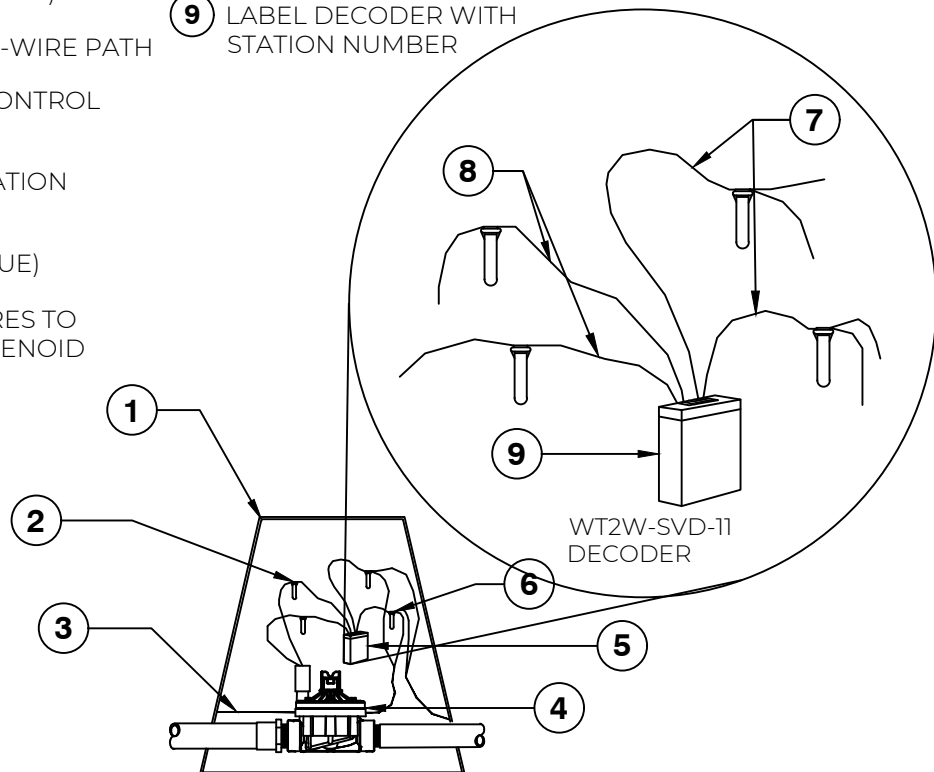
- ① BLUE WIRES TO 2-WIRE COMMUNICATION PATH
- ② VALVE BOX
- ③ 2-WIRE PATH *ALL WIRE IN CONDUIT*
- ④ WT2W-FD (FLOW DECODER)
- ⑤ EXTENSION (LENGTH AS REQUIRED)
- ⑥ 5/8" DIA. X8 COPPER GROUND ROD DRIVEN INTO GROUND WITH TOP OF ROD A MIN. OF 6" BELOW GRADE. 100 OHMS OR LESS
- ⑦ GRAVEL
- ⑧ FLOW SENSOR/HYDROMETER
- ⑨ EXPANSION COILS
- ⑩ RED AND BLACK WIRES TO FLOW SENSOR
- ⑪ 3M DBR/Y-6 SPLICE
- ⑫ FINISH GRADE
- ⑬ GREEN/YELLOW STRIPED WIRES TO GROUNDING ROD
- ⑭ CAD WELD CONNECTION
- ⑮ SINGLE GREEN WIRE-OPTIONAL LED POWER. CAP WHEN NOT IN USE



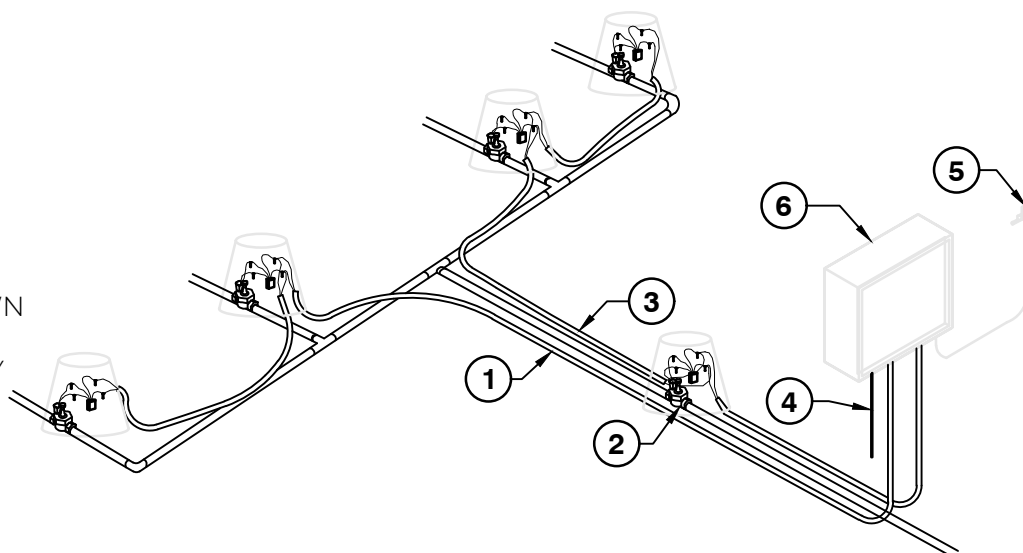
NOTES:

1. FLOW SENSOR SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
2. ALL FLOW SENSORS SHALL BE WEATHERTRAK PRODUCT.

- ① VALVE BOX
- ② SPLICE (WHITE)
- ③ CONDUIT 2-WIRE PATH
- ④ STATION CONTROL VALVE
- ⑤ 2-WIRE STATION DECODER
- ⑥ SPLICE (BLUE)
- ⑦ WHITE WIRES TO VALVE SOLENOID
- ⑧ BLUE WIRES CONNECT TO 2-WIRE PATH
- ⑨ LABEL DECODER WITH STATION NUMBER



- ① WIRE PATH #1
 ② MASTER VALVE
 ③ WIRE PATH #2
 ④ 120 VAC POWER
 ⑤ RAIN SENSOR
 ⑥ CONTROLL SHOWN AS REFERENCE ONLY



NUMBER OF SIMULTANEOUS VALVES	VALVES EVENLY DISTRIBUTED ALONG 2-WIRE (FT)		
	AWG 18	AWG 16	AWG 14
1	7.000	11.000	17.800
2	6.400	10.200	16.300
3	5.500	8.800	14.100
4	4.900	7.800	12.500
5	4.400	7.000	11.200
6	4.000	6.300	10.100
7	3.600	5.800	9.200
7	3.300	5.300	8.500

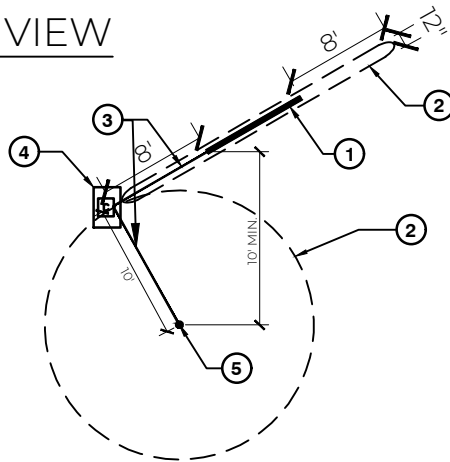
WORST CASE 2-WIRE PATH LENGTH LIMITS WITH ALL DECODERS AT END OF 2-WIRE PATH	
NUMBER OF ACTIVE VALVES ON 2-WIRE PATH	MAXIMUM WIRE LENGTH (FT) ASSUMING #16½ WIRE
1	6,200
2	5,600
3	4,900
4	4,300

NOTES:

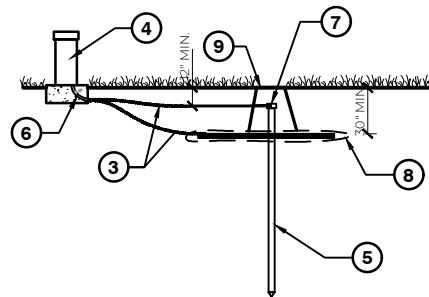
- ALL WIRE SPLICING SHALL BE MADE WITH APPROVED CONNECTIONS.
- MAKE ALL WIRE SPLICES IN VALVE BOXES.
- LEAVE A MINIMUM OF 12" EXTRA WIRE AT ALL SPLICE POINTS.
- MAXIMUM DISTANCE FROM DECODER TO VALVE=150 FEET.
- MAXIMUM WIRE LENGTH=10,200 FEET.
- WIRE LENGTHS INCLUDE MASTER VALVE AND #16½ WIRE.
- INCLUDE PAIGE WIRE DECODER CABLE FUSE DEVICES (DCFD's) AT ALL INTERSECTIONS.
- REFER TO OTHER DETAILS FOR SURGE PROTECTION.

- | | |
|--|---|
| ① COPPER GROUND PLATE
(4" X 96" X .0625") | ⑥ PVC SWEEP ELL, 1-1/2" OR
LARGER |
| ② ELECTRICAL SPHERE OF
INFLUENCE BOUNDARIES | ⑦ 'CADWELD' CONNECTION |
| ③ #6 AWG BARE COPPER
WIRE | ⑧ 'POWER SET' EARTH
CONTACT MATERIAL |
| ④ IRRIGATION CONTROLLER | ⑨ 10" ROUND VALVE BOX |
| ⑤ 5/8" X 10' UL LISTED COPPER
CLAD GROUND ROD | |

TOP VIEW



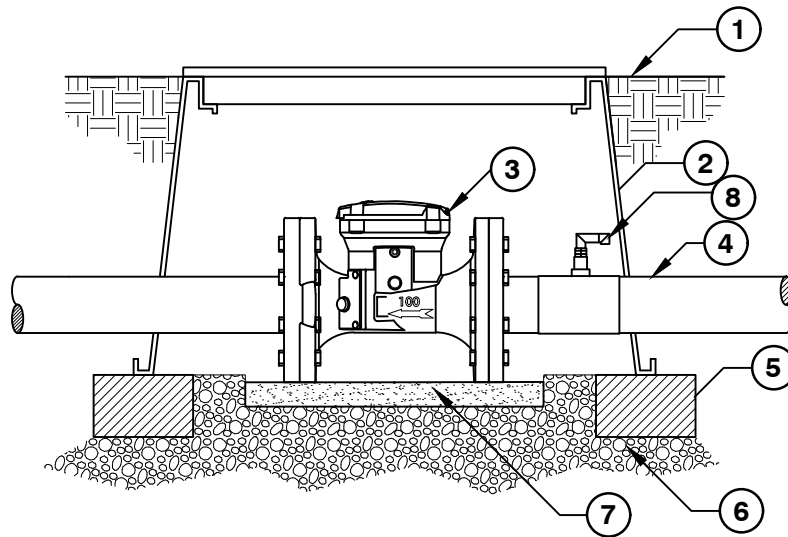
SIDE VIEW



NOTES:

- DO NOT INSTALL ANY OTHER WIRES OR CABLE WITHIN THE SPHERE OF INFLUENCE AREA.
- PLACE 100 LB POWER SET SOIL AMENDMENT WITH EACH PLATE PER MANUFACTURER'S RECOMMENDATIONS.

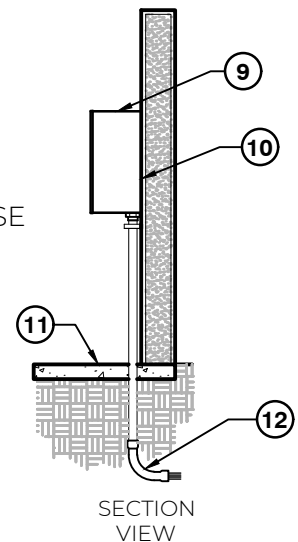
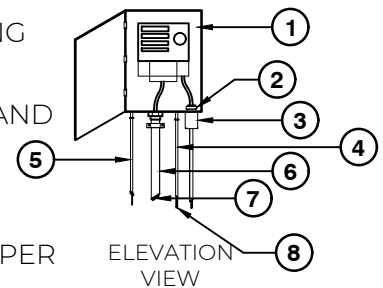
- | | |
|-----------------------|-----------------------|
| ① GRADE LEVEL | ⑤ BRICK SUPPORT |
| ② 14" X 19" VALVE BOX | ⑥ 1/2" CRUSHED GRAVEL |
| ③ 4" HYDROMETER | ⑦ CONCRETE PAVER |
| ④ 4" PVC PIPE | ⑧ AIR/VACUUM VENT |



NOTES TO DESIGNER:

1. AT LEAST TWO (2) PIPE DIAMETERS ARE REQUIRED BOTH UP AND DOWN STREAM BETWEEN FLOWHD AND ANY FITTINGS.
2. AT LEAST FIVE (5) PIPE DIAMETERS BETWEEN A PUMP AND THE FLOWHD.
3. INSTALL A COMBINATION AIR/VACUUM OR CONTINUOUS ACTING AIR VENT RIGHT BEFORE THE FLOWHD (SEE INSTALLATION INSTRUCTIONS).

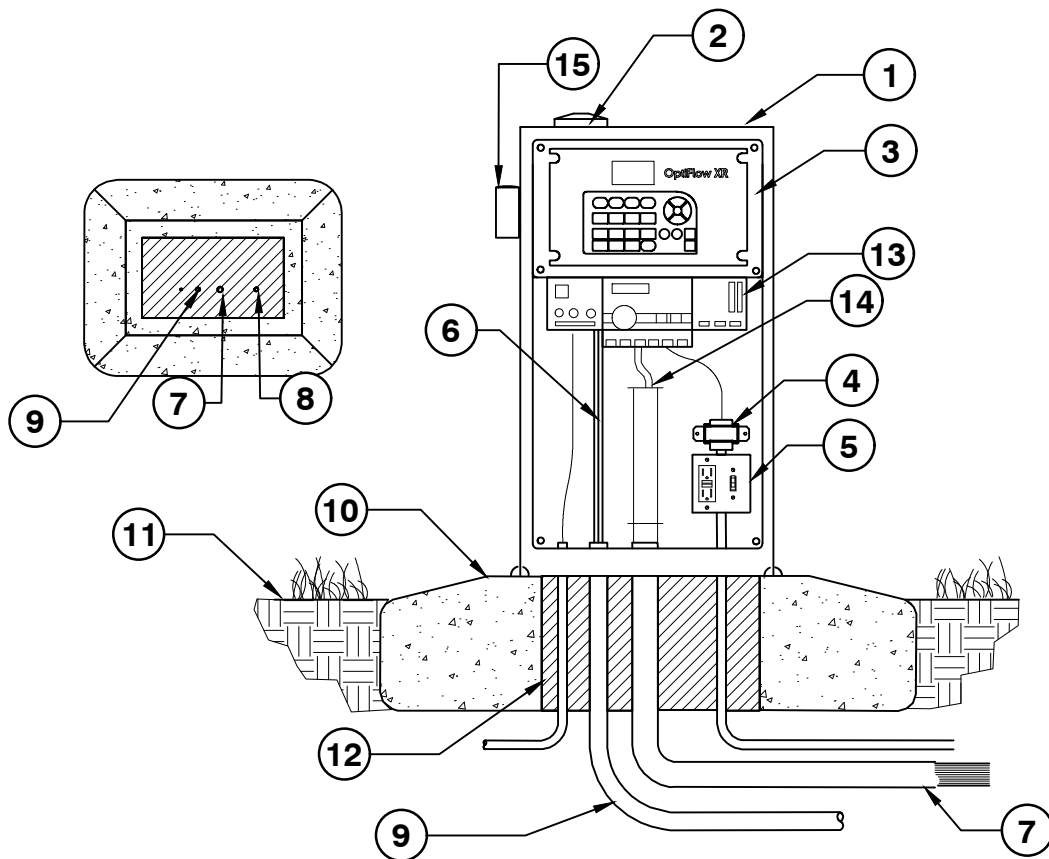
- ① WEATHERTRAK CONTROLLER, MODELS: WTPRO3-C-12/24/48-SWM-CH1 CONVENTIONAL OR WTPRO3-C-2W48-SWM-CH1, 2-WIRE OR CONVENTIONAL, WITHIN STAINLESS STEEL WALL MOUNT ENCLOSURE ASSEMBLY W/ KEY-LOCK. SEE LEGEND FOR SIZE AND OTHER REQUIREMENTS.
- ② WIRELESS RAIN SENSOR (IF SPECIFIED)
- ③ 'J' BOX FOR 110/120 VAC CONNECTION TO CONTROLLER TRANSFORMER.
- ④ 1" SCH. 40 PVC SWEEP ELL AND CONDUIT FOR FLOW SENSOR AND MASTER VALVE WIRE OR HYDROMETER WIRE.
- ⑤ #6 AWG COPPER GROUND WIRE IN CONDUIT. CONNECT TO BUILDING GROUND AS REQUIRED AND PER ASIC GUIDELINES.
- ⑥ 2" PVC SCH. 40 GRAY ELECTRICAL CONDUIT. USE FOR BOTH 2-WIRE AND CONVENTIONAL WIRE OPTIONS.
- ⑦ CONVENTIONAL VALVE OR DECODER WIRES
- ⑧ FLOW SENSOR CABLE AND MASTER VALVE, OR HYDROMETER WIRE PER SPECIFICATIONS.
- ⑨ LOW PROFILE ANTENNA (IF SPECIFIED)
- ⑩ INTERIOR WALL SURFACE, ANCHOR CONTROLLER TO WALL PER MANUFACTURER'S SPECS.
- ⑪ FINISH GRADE INSIDE OF BUILDING
- ⑫ 2" PVC SHC. 40 GRAY ELECTRICAL LONG SWEEP ELL AND CONDUIT. USE FOR BOTH WIRE AND CONVENTIONAL WIRE OPTIONS.



NOTES:

1. CONTRACTOR SHALL COORDINATE WITH PARKS DEPARTMENT FOR ALL CONTROLLER DESIGNS.
2. ALL IRRIGATION CONTROLLERS SHALL BE EQUIPPED WITH A RAIN SENSOR, EVAPOTRANSPIRATION (ET) SENSOR, MASTER VALVE, AND FLOW SENSOR AS APPROVED BY THE HYRUM CITY PARKS DEPARTMENT.
3. CONTROLLERS SHALL BE MOUNTED ON A STABLE WALL, POWER RACK, OR FORMED AND CONSTRUCTED CONCRETE BASE PEDESTAL MOUNT OVER 6" OF COMPACTED GRAVEL. SUBGRADE SHALL BE COMPACTED TO 95%. BOX SHALL BE VANDAL RESISTANT AND WEATHER PROOF AND SHALL NOT BE MOUNTED TO METER BASE.
4. CONTRACTOR/DEVELOPER IS RESPONSIBLE FOR 110 VOLT ELEC. SERVICE. THIS SHALL BE INSPECTED AND APPROVED BY CITY PARKS DEPARTMENT.
5. ALL 100 VOLT WIRES TO BE SUFFICIENTLY SIZED AND CONDUIT BURIED MIN. 24" DEEP.
6. ALL LOCAL, STATE, AND NATIONAL CODES SHALL TAKE PRECEDENCE IN THE FURNISHING AND CONNECTING A 110 VOLT ELECTRICAL SERVICE TO THE CONTROLLER.

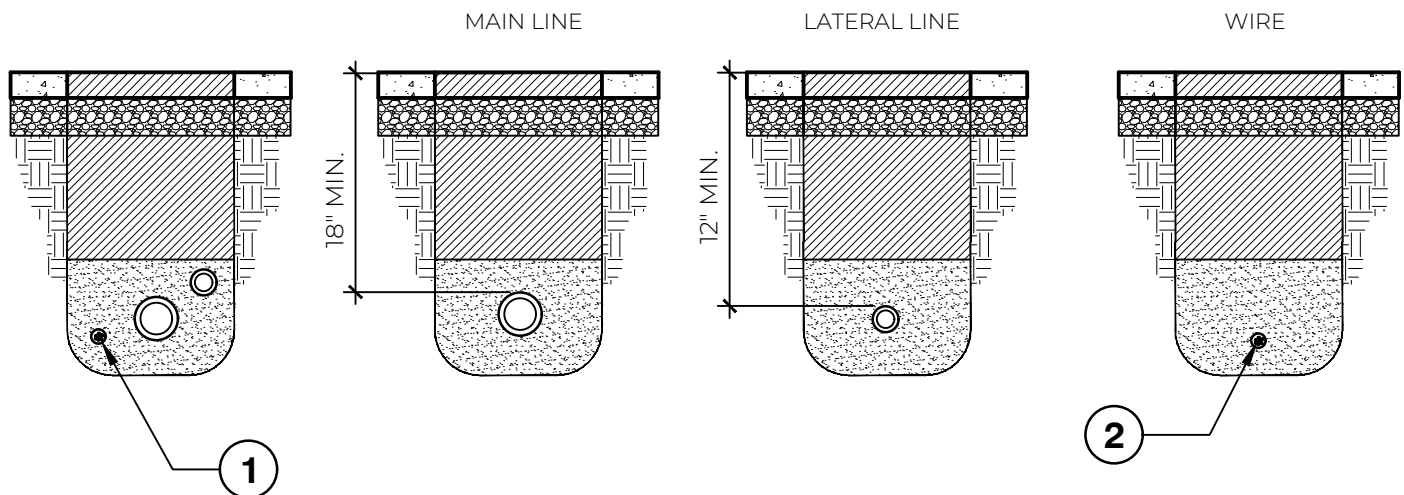
- ① STAINLESS STEEL AUTOMATIC CONTROLLER ENCLOSURE ASSEMBLY. SEE IRRIGATION LEGEND FOR MAKE AND MODEL.
- ② LOW PROFILE ANTENNA
- ③ WEATHERTRAK OPTIFLOW XR 2-WIRE CONTROLLER. SEE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ④ CONTROLLER TRANSFORMER.
- ⑤ GFI ON/OFF POWER SWITCH RECEPTACLE. (OPTIONAL)
- ⑥ OPTIONAL CONVENTIONAL FLOW SENSOR CABLE AND MASTER VALVE WIRES PER SPECIFICATIONS.
- ⑦ 3" PVC SWEEP ELL AND CONDUIT FOR CONTROL WIRES.
- ⑧ 1" PVC SWEEP ELL AND CONDUIT FOR 120 VAC FROM METERED POWER SUPPLY.
- ⑨ 2" PVC SWEEP ELL AND CONDUIT FOR OPTIONAL CONVENTIONALLY WIRED FLOW SENSOR AND MASTER VALVE WIRES.
- ⑩ POURED CONCRETE BASE. SLOPE TO DRAIN
- ⑪ FINISH GRADE. 2" BELOW TOP OF CONCRETE BASE.
- ⑫ FILL VOIDS WITH CONCRETE SLURRY MIX.
- ⑬ UNIVERSAL RADIO REMOTE INTERFACE. (TYPICAL)
- ⑭ NEATLY BUNDLE WIRES AND SECURE WITH WIRE TIRES. (TYPICAL)
- ⑮ RAIN SENSOR WITHIN VIT RAIN SENSOR ENCLOSURE (PT# RGVRS) PER SPEC.



NOTE: MINIMUM CONCRETE BASE REQUIREMENTS. CONTRACTOR SHALL VERIFY NUMBER AND SIZE OF CONDUITS REQUIRED FOR EACH ENCLOSURE INSTALLATION. USE ENCLOSURE MANUFACTURER'S TEMPLATE FOR PROPER LAG BOLT PLACEMENT. PROVIDE A MINIMUM 2" OF CONCRETE FROM LAG BOLT TO OPENING IN CONCRETE BASE FOR CONDUITS.

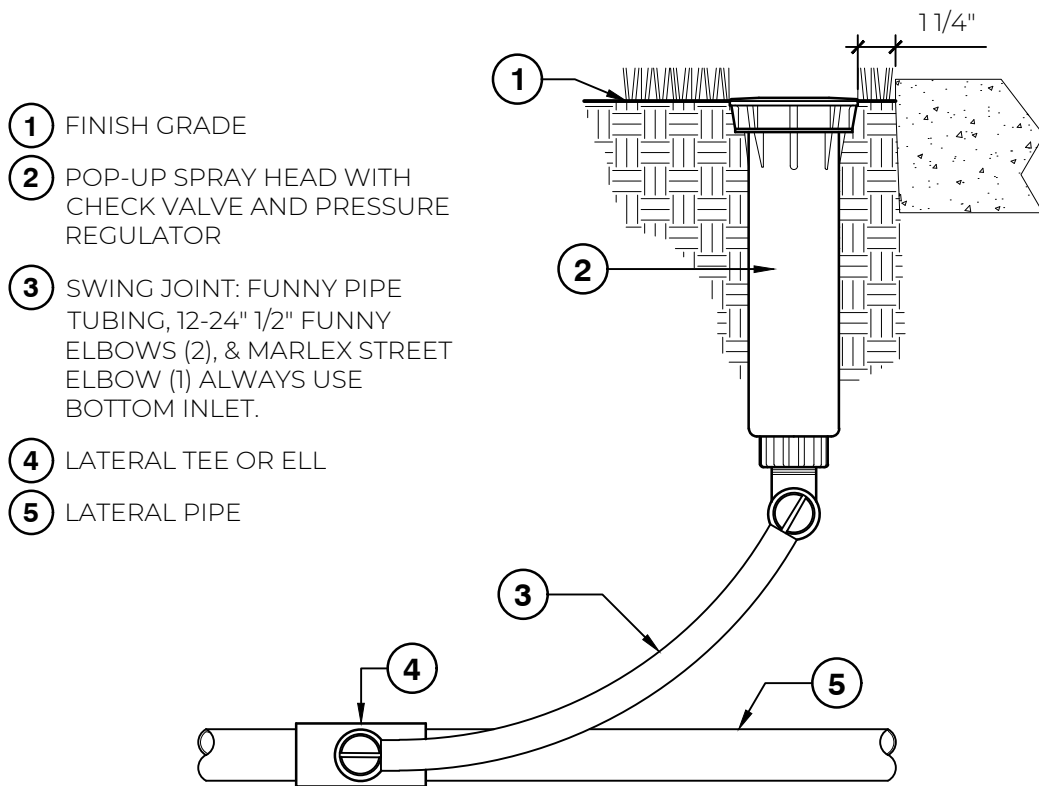
① RUN WIRING BENEATH AND BESIDE MAINLINE

② ALL WIRE SHALL BE IN CONDUIT



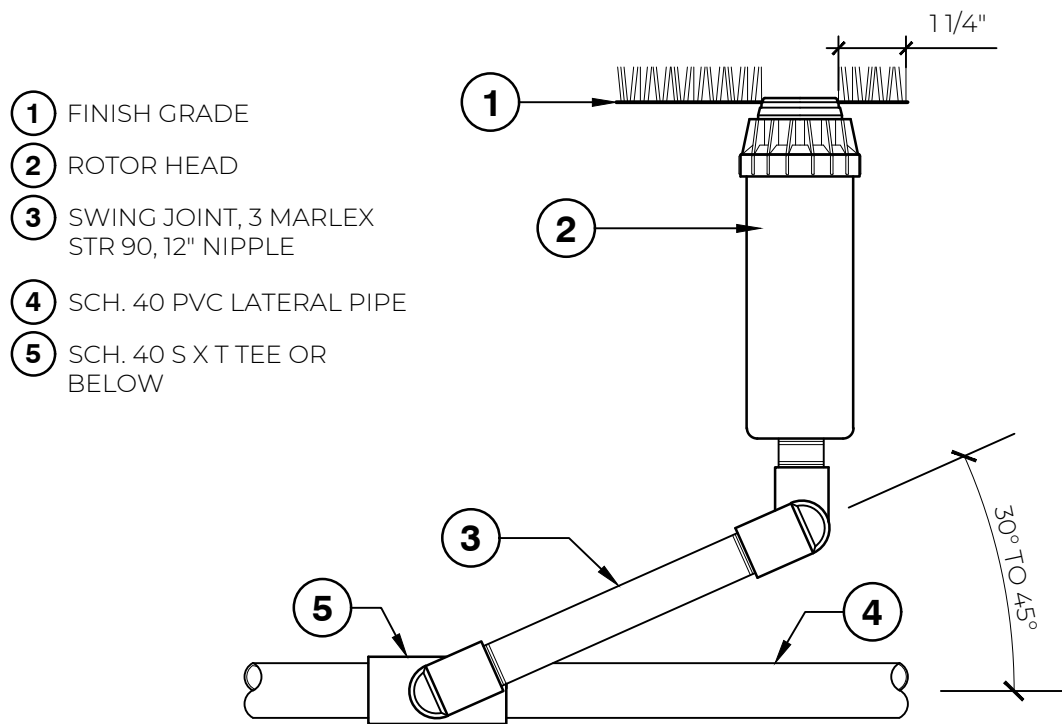
NOTES:

1. SLEEVES SHALL BE TWICE THE DIAMETER OF THE PIPE WITHIN OR WIRE THAT IT CARRIES.
2. PIPE AND WIRE SHALL BE PLACED IN SEPARATE SLEEVES.
3. TRENCHES SHALL BE EXCAVATED 2" BELOW NORMAL TO ALLOW FOR PROPER BEDDING. SELECTED FILL SHALL BE USED IF SOIL CONDITIONS ARE ROCKY.
4. MAIN LINE SHALL HAVE 18-24" COVER TO TOP OF PIPE, LATERAL LINE SHALL HAVE 12" MIN. COVER TO TOP OF PIPE. 4" OF SCREENED FILL SHALL COVER THE PIPE. THE TOP 6" OF COVER SHALL CONTAIN NO ROCKS/AGGREGATES LARGER THAN 2".
5. TRENCH FILL SHALL BE THOROUGHLY COMPACTED AND LEVELED WITH ADJACENT SOIL.
6. PLASTIC PIPE SHALL BE EXTRUDED FROM PVC 1120-1220 COMPOUND AND LABELED AS SUCH. ALL PVC PIPE SHALL BE SCH. 40. ALL MAINLINE FITTINGS SHALL BE SCH. 80.
7. ALL WIRING SHALL BE ENCLOSED IN CONDUIT: CONTROL WIRE, 2-WIRE, POWER WIRE.



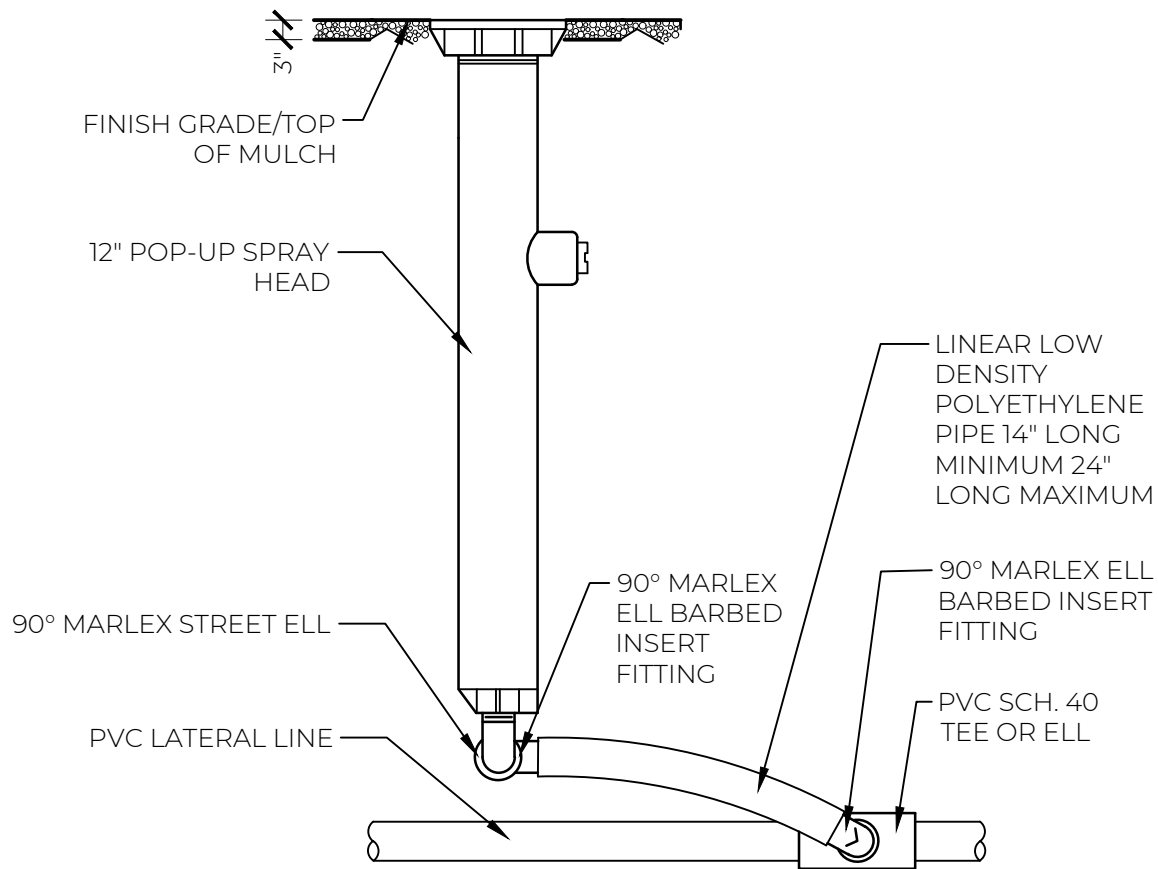
NOTES:

1. ALL SPRINKLER HEADS THAT BE SET TO GRADE & PERPENDICULAR TO THE FINISHED GRADES UNLESS OTHERWISE SPECIFIED. HEADS ADJACENT TO CURBS & WALKS SHALL BE $\frac{1}{2}$ TO 1 INCH AWAY FROM THE CURB OR WALKWAY. ALL NOZZLES SHALL BE TIGHTENED & ADJUSTED FOR THE PROPER RADIUS, ARC, & GALLONAGE.
2. SPRAY POP-UP HEADS SHALL HAVE A DOUBLE SWING JOINT RISER CONSTRUCTED OF FUNNY PIPE, BARBED FITTINGS, & MARLEX STREET ELLS ON THE HEAD SIDE.



NOTES:

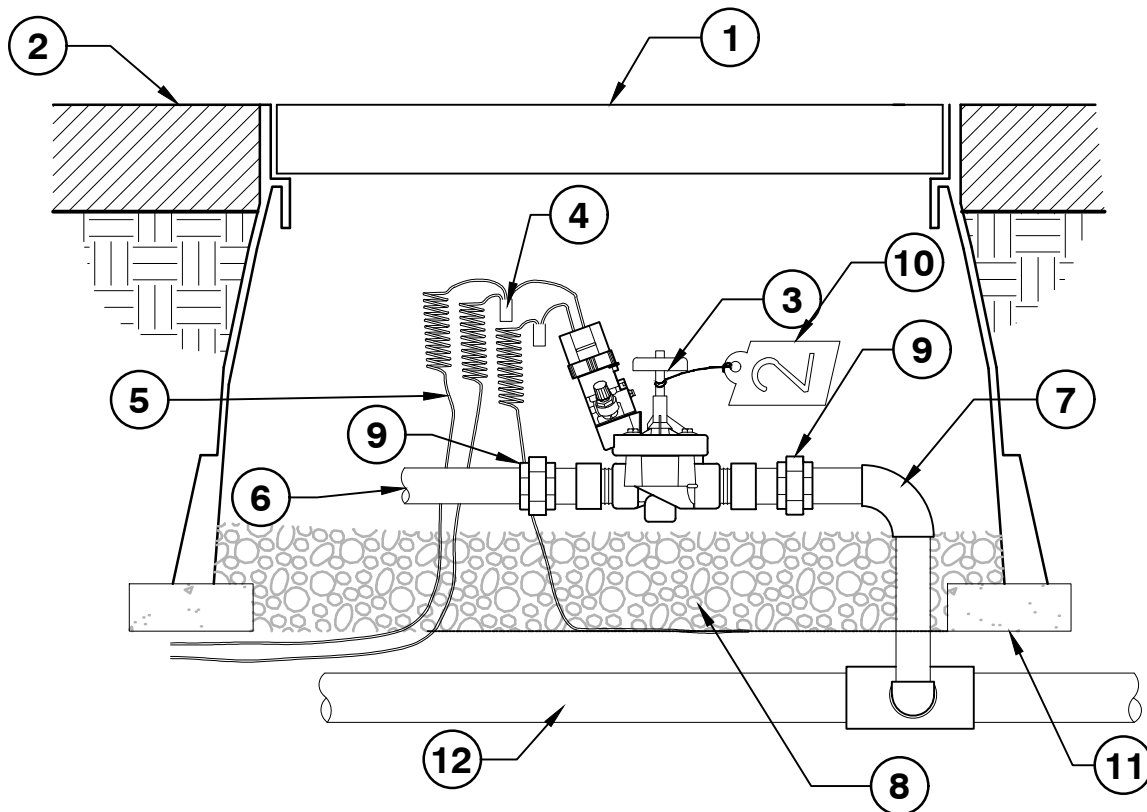
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2. ALL ROTOR POP-UP SPRINKLERS SHALL HAVE AN ADJUSTABLE RISER ASSEMBLY (DOUBLE SWING JOINT).
3. 1 - 1/4" MIN. DISTANCE FROM EDGE WHERE OCCURS.



NOTES:

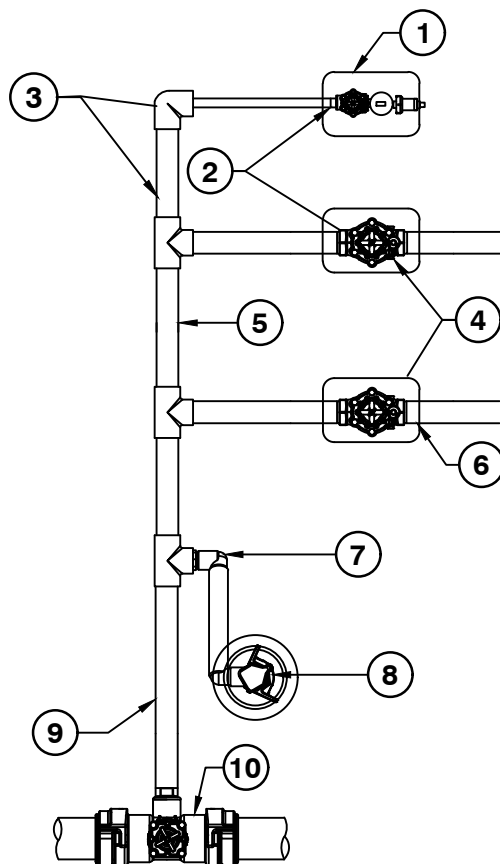
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2. SPRAY POP-UP HEADS SHALL HAVE A DOUBLE SWING JOINT RISER CONSTRUCTED OF FUNNY PIPE, BARBED FITTINGS, & MARLEX STREET ELLS ON THE HEAD SIDE.

- | | |
|-----------------------------|--|
| ① STANDARD VALVE BOX | ⑦ SCH. 80 FITTINGS |
| ② FINISH GRADE | ⑧ 3/4" MINUS WASHED GRAVEL |
| ③ REMOTE CONTROL VALVE | ⑨ ACTION MANIFOLD FITTINGS (2 EACH) 18011-X, 18012-X |
| ④ PAIGE WIRE CONNECTORS (2) | ⑩ VALVE #TAG |
| ⑤ 14 AWG PE WIRE | ⑪ BRICK |
| ⑥ SCH. 40 PIPE & FITTINGS | ⑫ MAIN LINE PER PLAN |



NOTES:

1. VALVES SHALL BE AS SPECIFIED ON DRAWINGS AND APPROVAL BY THE PARKS DEPARTMENT.
2. VALVES SHALL BE INSTALLED IN A 17 INCH X 11.75 INCH VALVE BOX (NOTE THIS IS THE MINIMUM SIZE),
3. NO MORE THAN ONE VALVE PER BOX AND VALVES MUST BE POSITIONED SUCH THAT THE TOPS OF THE VALVE CAN BE REMOVED WITHOUT REMOVING THE VALVE BOX.

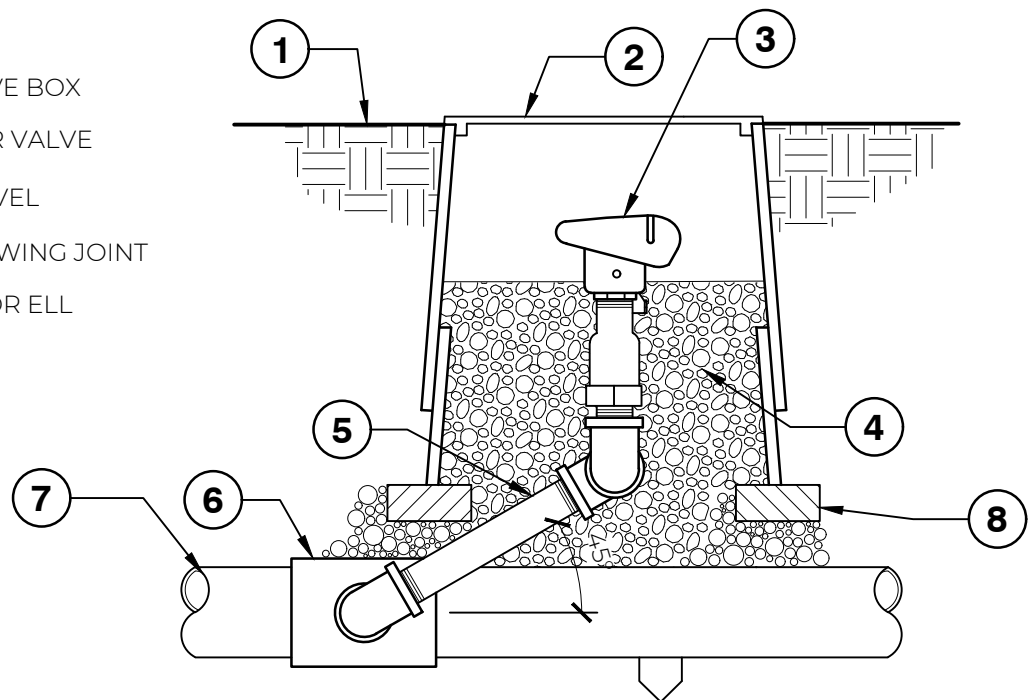


- ① DRIP ZONE, JUMBO VALVE BOX
- ② ACTION MANIFOLD FITTINGS
- ③ **S/80 FITTINGS
- ④ RCV IN CARSON STANDARD 1419 VALVE BOX
- ⑤ **S/40 MANIFOLD MAIN LINE
- ⑥ S/40 COUPLER OR BELL END
- ⑦ UNITIZED SWING JOINT (LASCO)
- ⑧ QUICK COUPLER IN 10" BOX
- ⑨ **S/80 TOE NIPPLE
- ⑩ DUCTILE IRON LATERAL TEE AND LATERAL VALVE

NOTES:

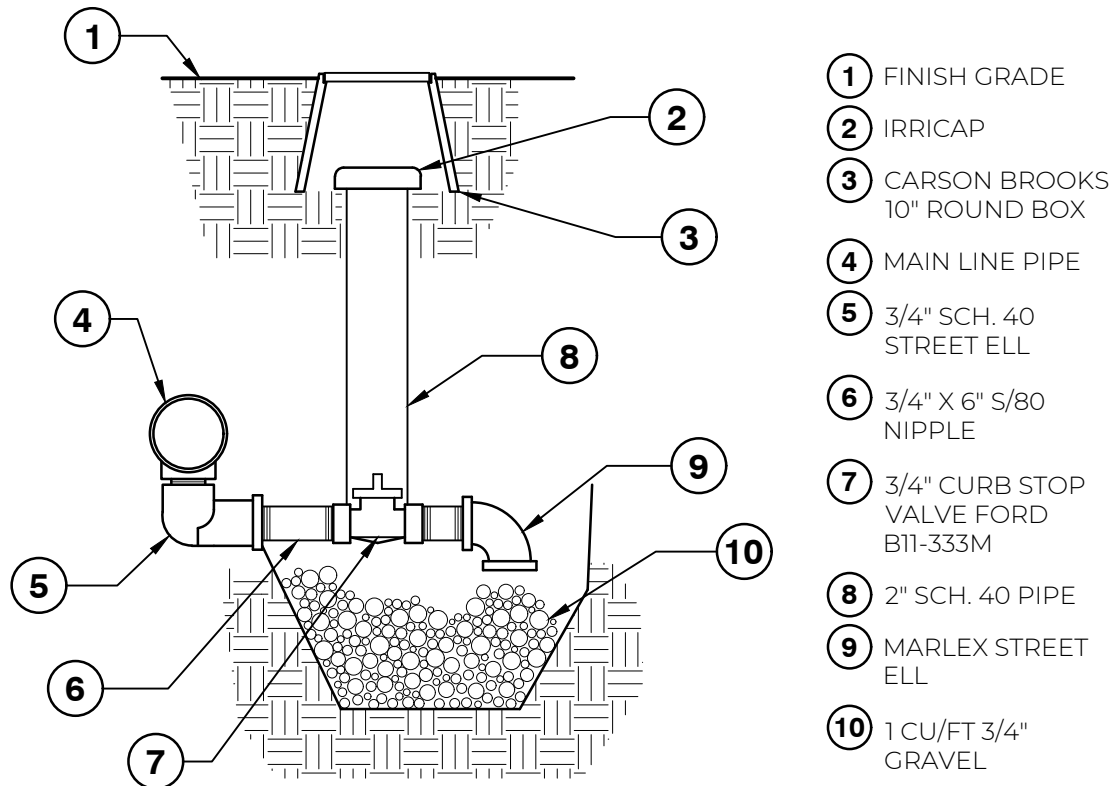
1. **INDICATES COMPONENT SHALL BE SAME SIZE AS LARGEST LATERAL ON THIS MANIFOLD.
2. DOWNSTREAM OF BALL VALVE: MANIFOLD FITTINGS SHALL BE SCH. 80, PVC PIPE SHALL BE SCH. 40.
3. QUICK COUPLERS ARE NOT REQUIRED AT EVERY MANIFOLD. SEE PLAN FOR LOCATIONS.
4. ALL CONTROL VALVE MANIFOLDS SHALL INCLUDE BALL VALVE AND UNION FITTING ON INLET AND OUTLET SIDES OF VALVE.

- ① FINISH GRADE
- ② 10" ROUND VALVE BOX
- ③ QUICK COUPLER VALVE
- ④ 3/4" MINUS GRAVEL
- ⑤ FACTORY MFG SWING JOINT
- ⑥ MAIN LINE TEE OR ELL
- ⑦ MAIN LINE PIPE
- ⑧ BRICK



NOTES:

1. A QUICK COUPLING VALVE SHALL BE INSTALLED ON ALL MAIN LINES IMMEDIATELY AFTER THE BACKFLOW PREVENTION DEVICE. IN ADDITION, A QUICK COUPLING VALVE SHALL BE INSTALLED AT VALVE BOX CLUSTERS PER PLANS (SEE VALVE MANIFOLD DETAILS). ALL QUICK COUPLER VALVES SHALL BE INSTALLED IN A 10" ROUND VALVE BOX.
2. ALL QUICK COUPLING VALVE KEYS SHALL HAVE A HOSE SWIVEL ATTACHED TO THE KEY. ONE KEY TO BE TURNED OVER TO THE CITY PARKS DEPARTMENT AT COMPLETION OF THE PROJECT.



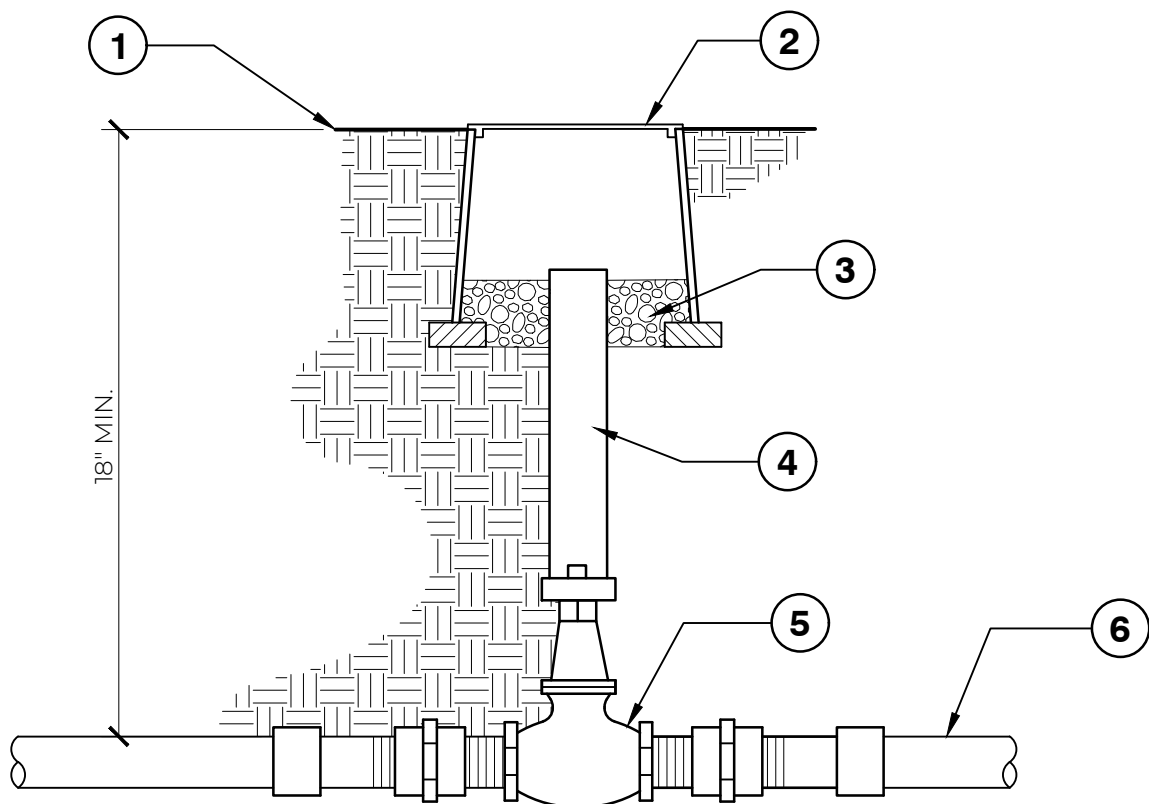
NOTE:

1. ADD MANUAL DRAIN LINE TO LOW SPOT ON IRRIGATION MAINLINE.

STANDARD DRAWING

MANUAL MAIN LINE DRAIN VALVE - 2" & UNDER

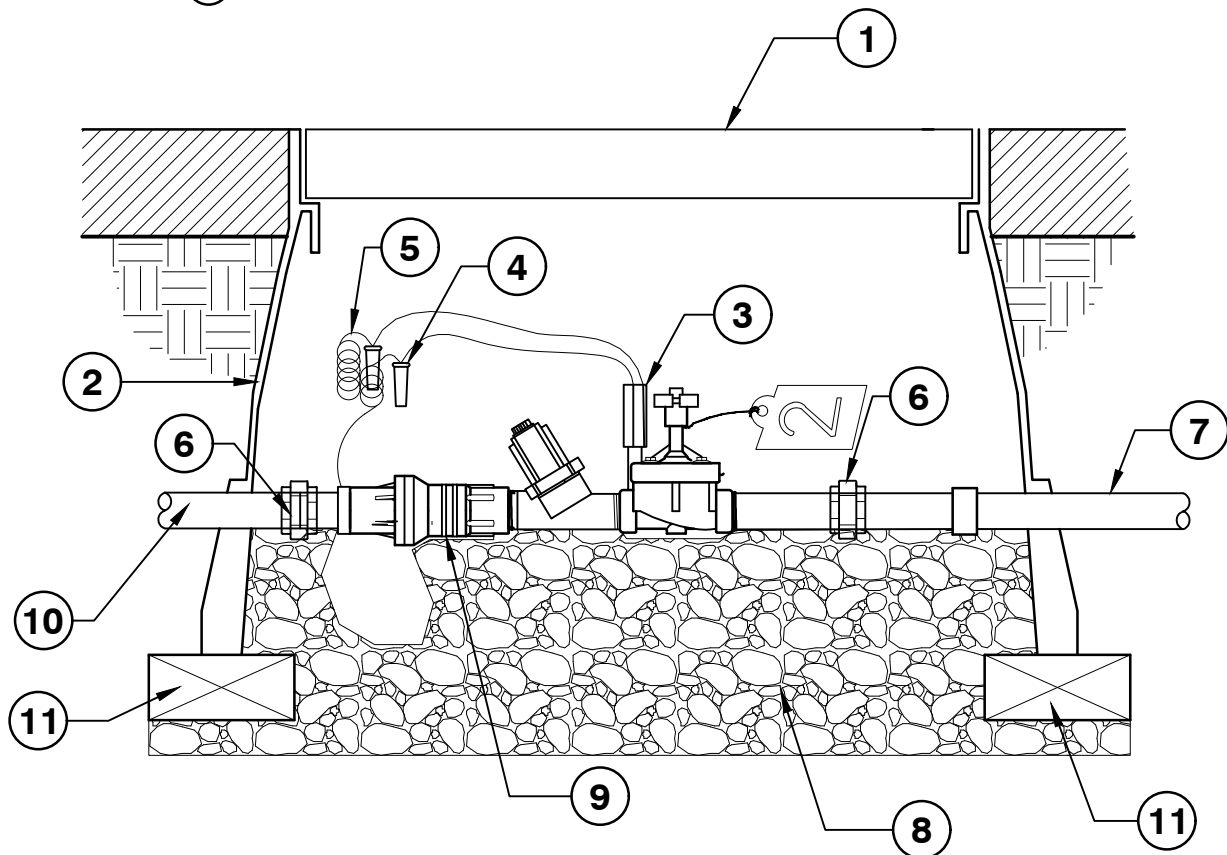
- ① FINISH GRADE
- ② 10" CARSON BROOKS ROUND VALVE BOX
- ③ 3/4" WASHED GRAVEL
- ④ 6" CL/200 SLEEVE
- ⑤ LEEMCO D/I R/W VALVE
- ⑥ MAIN LINE PIPE



NOTES:

1. ALL GATE VALVES SHALL BE RESILIENT WEDGE WITH SQUARE KEY OR DOMESTIC MANUFACTURE NON RISING STEAM. 2001B WATER, OIL, GAS RATED.
2. ALL GATE VALVES SHALL BE INSTALLED WITH VALVE BOXES. SIX OF TWELVE INCH EXTENSIONS SHALL BE ADDED WHEN NECESSARY TO BRING THE VALVE BOXES LEVEL WITH FINISH GRADE.
3. ADD ISOLATION VALVE EVERY 500 FEET OF MAIN LINE MINIMUM.

- ① JUMBO VALVE BOX
- ② WRAP BOX IN DEWITT PRO 5 W/4 BRICKS UNDERNEATH
- ③ DRIP ZONE KIT MODEL PER PLAN TIP FILTER 45 DEGREES
- ④ PAIGE WIRE CONNECTORS (2)
- ⑤ 14 AWG PE WIRE. PLACED INSIDE OF MIN 1-1/2" CONDUIT, 4" ABOVE BOX FLOOR
- ⑥ ACTION MANIFOLD FITTINGS
- ⑦ MAIN LINE PIPE, SCH. 80 FITTINGS
- ⑧ 3/4" MINUS WASHED GRAVEL
- ⑨ REGULATOR: 25 OR 40 PSI
- ⑩ LATERAL LINE PIPE, SCH. 40 FITTINGS
- ⑪ BRICK



NOTE:
ALL "DRIP" SPRINKLER SYSTEMS SHALL BE EQUIPPED WITH A
LOW FLOW VALVE AND PRESSURE REDUCING FILTER AS
APPROVED BY THE HYRUM CITY PARKS DEPARTMENT.

