19.0 STANDARD DRAWINGS

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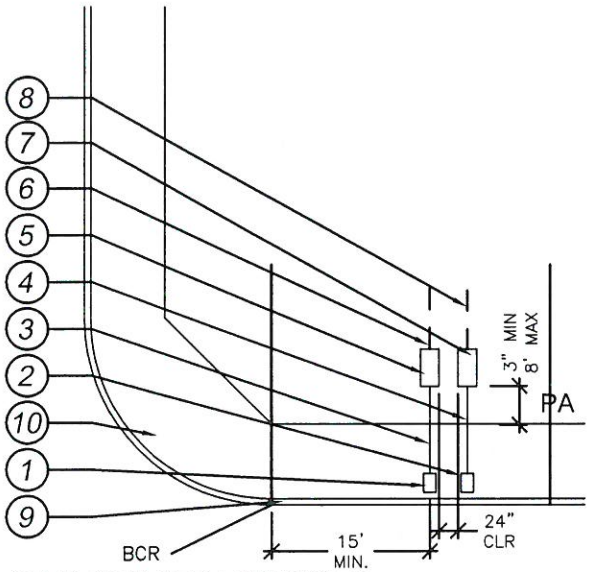
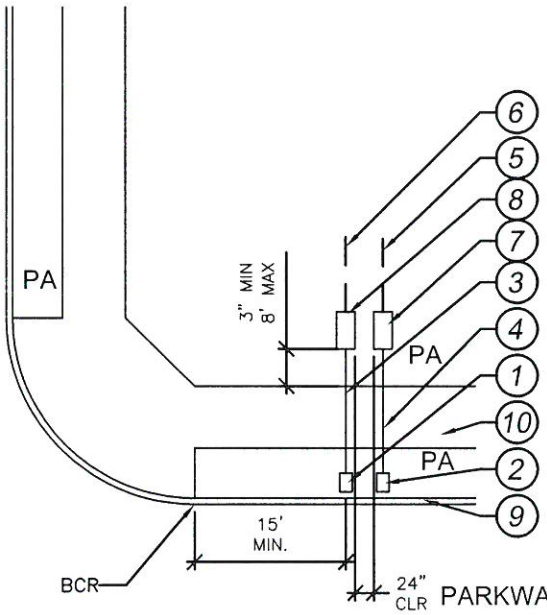
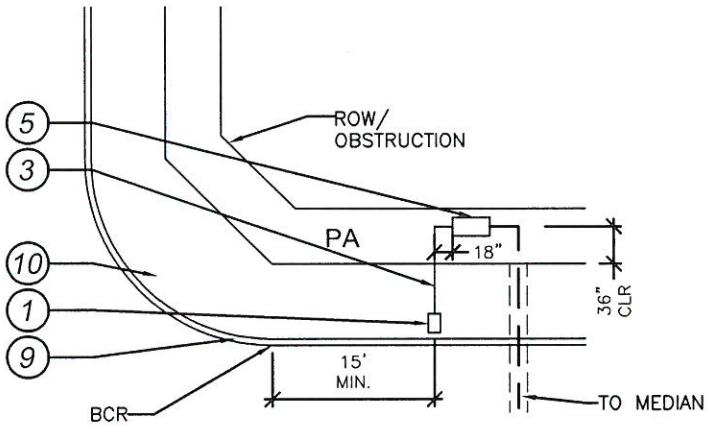


CURB ADJACENT SIDEWALK



PARKWAY



LIMITED LANDSCAPE AREA
AND/OR MEDIAN

1. IRRIGATION WATER METER PER EVWD STANDARDS
2. DOMESTIC WATER METER PER EVWD STANDARDS
3. IRRIGATION WATER MAIN FROM METER PER STANDARD DETAILS
4. DOMESTIC WATER FROM METER
5. IRRIGATION BACKFLOW PREVENTER
6. IRRIGATION MAINLINE SUPPLY TO SYSTEM
7. DOMESTIC BACKFLOW PREVENTER
8. DOMESTIC WATER LINE
9. STREET CURB
10. SIDEWALK

PA =PLANTER AREA

N.T.S

Mark	Revision	By	Date
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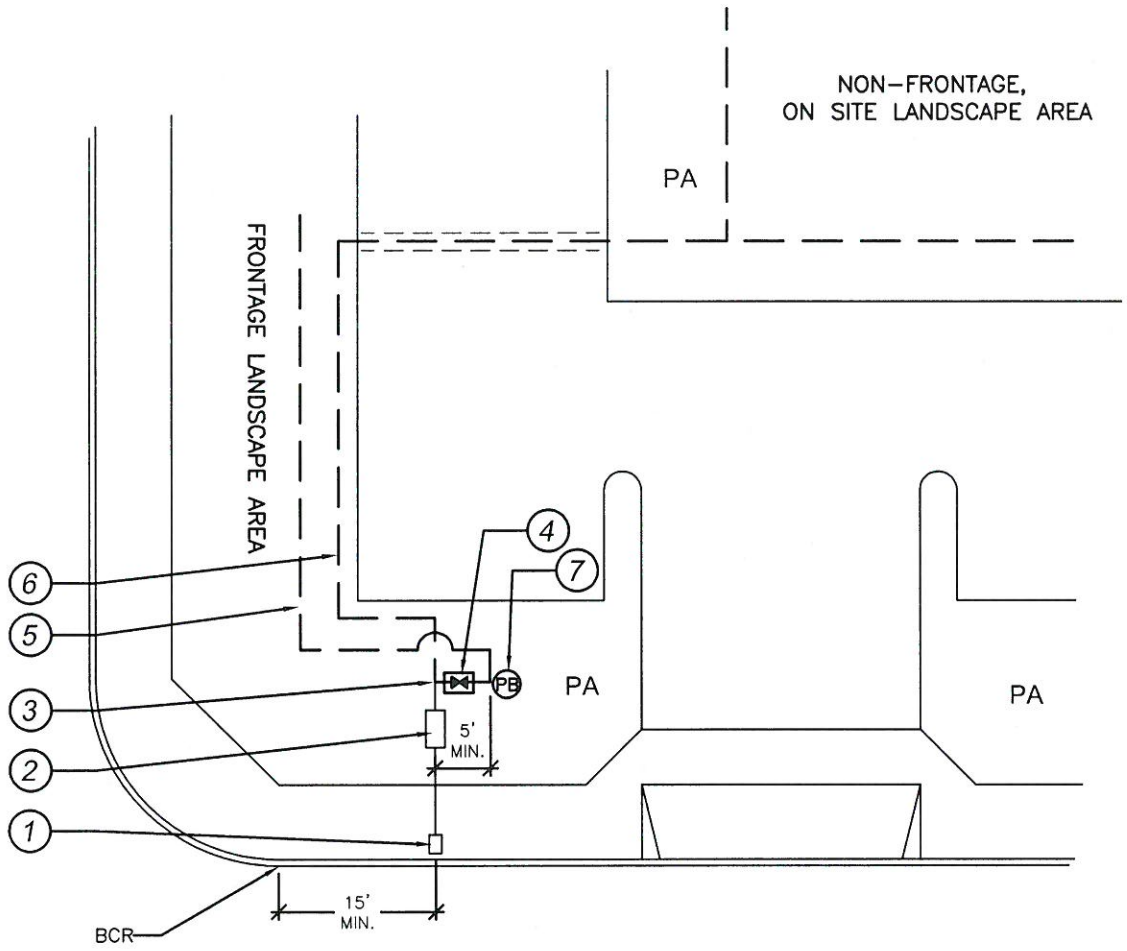
Approved: Ernest Wong Date: 9-6-16

Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

IRRIGATION METER CONNECTION

Standard Drawing No. 401



1. IRRIGATION WATER METER PER CITY STANDARD DETAIL 401
2. LANDSCAPE BACKFLOW PREVENTER PER CITY STANDARD DETAIL 401
3. BRANCH IRRIGATION MAINLINE TO SERVE ALL FRONTAGE AREAS SEPARATE FROM ON-SITE LANDSCAPE AREAS.
4. PROVIDE LINE-SIZED BALL VALVE WITHIN VALVE BOX TO ISOLATE FRONTAGE LANDSCAPE IRRIGATION MAINLINE FROM ON-SITE LANDSCAPE IRRIGATION MAINLINE; IN THE EVENT OF THE FUTURE NEED TO ISOLATE THE SHELL LMD FRONTAGE AREA FROM THE REMAINDER OF THE ON-SITE IRRIGATION, FUTURE CONNECTION TO FUTURE SEPARATE FRONTAGE WATER METER TO BE PARALLEL TO AND 5' CLEAR OF ON-SITE WATER METER.
5. FRONTAGE AREA IRRIGATION MAINLINE BRANCH PER PLAN
6. ON-SITE IRRIGATION MAINLINE PER PLAN
7. RUN AND LOOP ALL IRRIGATION CONTROL WIRES SERVING FRONTAGE AREA VALVES TO A PULL BOX LOCATED ADJACENT TO MAINLINE ISOLATION AREA (CALLOUT 4 ABOVE); THIS LOCATION WILL SERVE AS A SPLICE POINT FOR FUTURE SEPARATE IRRIGATION CONTROLLER FOR FRONTAGE-ONLY AREAS IF NECESSARY.

PA =PLANTER AREA

N.T.S

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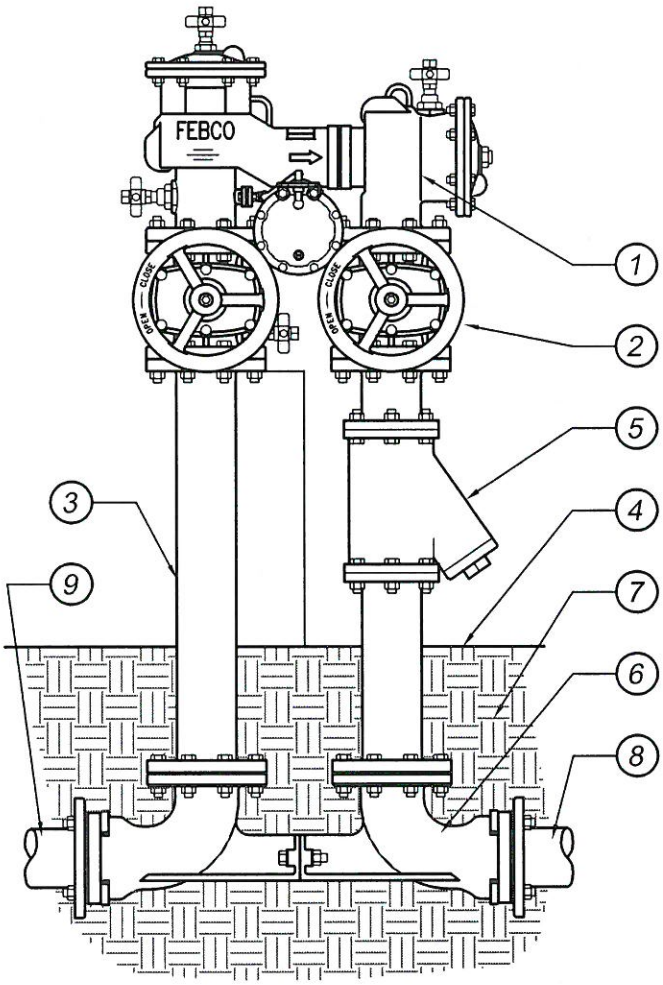
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

IRRIGATION METER AT SHELL LMD

Standard Drawing No. 401a



1. FEBCO 880 SERIES REDUCED PRESSURE BACKFLOW PRE– VENTER (SIZE PER PLAN)
2. SHUT–OFF VALVE AS SUPPLIED BY MANUFACTURER WITH R/P DEVICE
3. FLANGED CAST IRON NIPPLE LENGTH AS REQUIRED
4. FINISH GRADE
5. WYE STRAINER AS SUPPLIED BY MANUFACTURER
6. 'VALVE SETTER' BY FEBCO – SIZE PER R/P DEVICE, CONNECTION TYPES AS NECESSARY
7. NATIVE SOIL – COMPACT AS NECESSARY
8. MAINLINE FROM POC – ADAPT AS NECESSARY
9. MAINLINE TO SYSTEM – ADAPT AS NECESSARY

* 20" MIN., 36" MAX. OR AS REQUIRED TO ACCESS STRAINER

NOTE: INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES, HEALTH DEPARTMENT STANDARDS, AND MANUFACTURER'S DIRECTIONS. CONTRACTOR SHALL VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION. FINAL BACKFLOW PREVENTER LOCATION TO BE DETER– MINED IN THE FIELD. WHERE POSSIBLE, SCREEN BACKFLOW DEVICE WITH SHRUBS.

N.T.S

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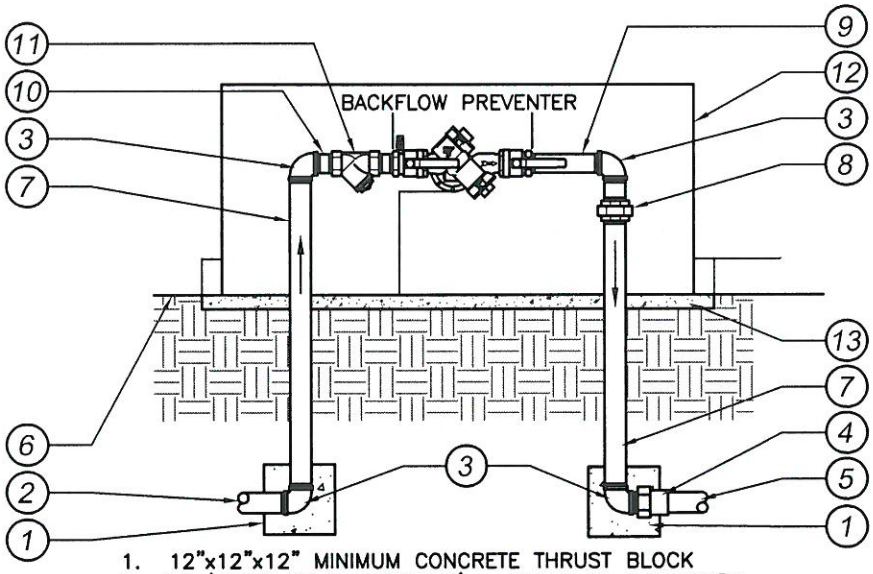
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

BACKFLOW PREVENTER 2-1/2" +

Standard Drawing No. 402



1. 12"x12"x12" MINIMUM CONCRETE THRUST BLOCK
2. TO 'POINT OF CONNECTION' – ADAPT AS NECESSARY
3. BRASS 90 DEGREE ELL – TxT
4. PVC SCH 40 MALE ADAPTER – SIZE AS REQUIRED
5. PVC MAINLINE PER LEGEND – SIZE PER PLAN
6. FINISH GRADE
7. BRASS NIPPLE – TxT – LENGTH AS REQUIRED
8. BRASS UNION – SIZE AS REQUIRED
9. BRASS NIPPLE – TxT – 4" MINIMUM LENGTH
10. BRASS NIPPLE – TxT – 2" MINIMUM LENGTH (TYP. OF 2)
11. BRASS Y–STRAINER – 60 MESH SCREEN W/ HOSE BIB
12. VANDAL RESISTANT ENCLOSURE – MODEL PER LEGEND
    INSTALL PER MANUFACTURER'S REQUIREMENTS
13. INSTALL 4" CONCRETE PAD, EXTEND 6" PAST ENCLOSURE

* 12" MINIMUM, 30" MAXIMUM

NOTES:
INSTALL BACKFLOW PREVENTER PER LOCAL CODES, HEALTH DEPARTMENT STANDARDS, AND MANUFACTURER'S DIRECTIONS. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION. WHERE BACKFLOW DEVICE SIZE IS SMALLER THAN MAINLINE, ENTIRE APPARATUS TO BE SIZE OF MAINLINE. BUSH DOWN ONLY AT THE BACKFLOW DEVICE. FINAL LOCATION OF DEVICE TO BE DETERMINED IN THE FIELD. BACKFLOW TO BE LOCATED IN PLANTER AREA AND SCREENED WITH SHRUBS AS POSSIBLE.

N.T.S

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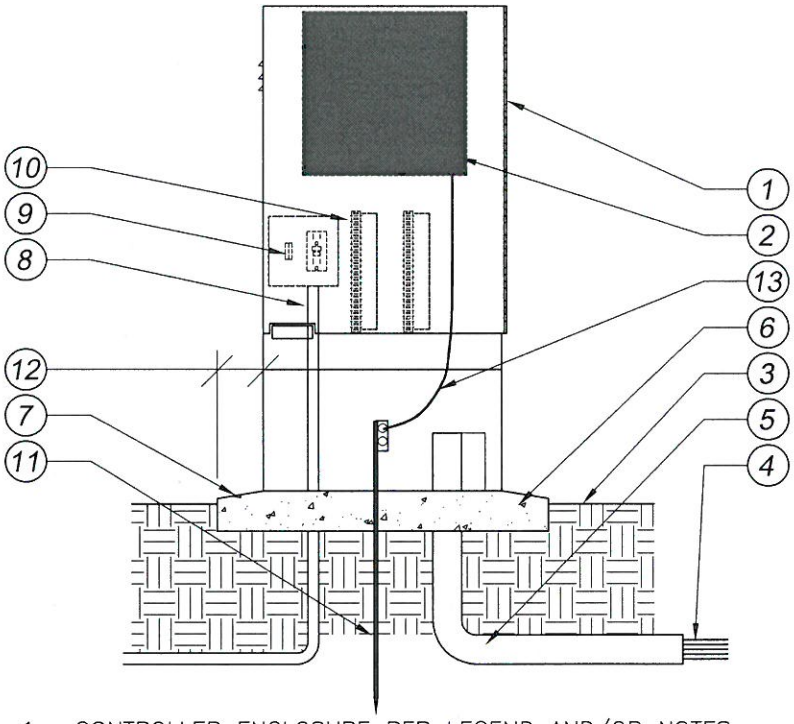
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

BACKFLOW PREVENTER W/ ENCLOSURE - 3/4" TO 2"

Standard Drawing No. 403



1. CONTROLLER ENCLOSURE PER LEGEND AND/OR NOTES
2. AUTOMATIC CONTROLLER PER LEGEND
3. FINISH GRADE
4. DIRECT BURIAL CONTROL WIRES TO VALVES
5. 3" PVC SWEEP ELL – EXTEND BEYOND EDGE OF BASE
6. 'QUICKPAD' ENCLOSURE MOUNTING PAD PER MFG'S SPECS
7. SLOPE EDGE OF BASE 1% TO DRAIN AWAY FROM ENCLOSURE
8. 120V AC POWER IN CONDUIT
9. 120V ON–OFF SWITCH WITH CONVENIENCE OUTLET
10. TERMINAL STRIPS FOR CONTROL WIRES
11. 5/8" x 5' MIN. LENGTH COPPER GROUNDING ROD
12. EXTEND EDGE OF BASE 6" BEYOND EDGE OF ENCLOSURE
13. GROUND CONTROLLER PER MANUFACTURER

* EXTEND 4" ABOVE TOP OF BASE

N.T.S

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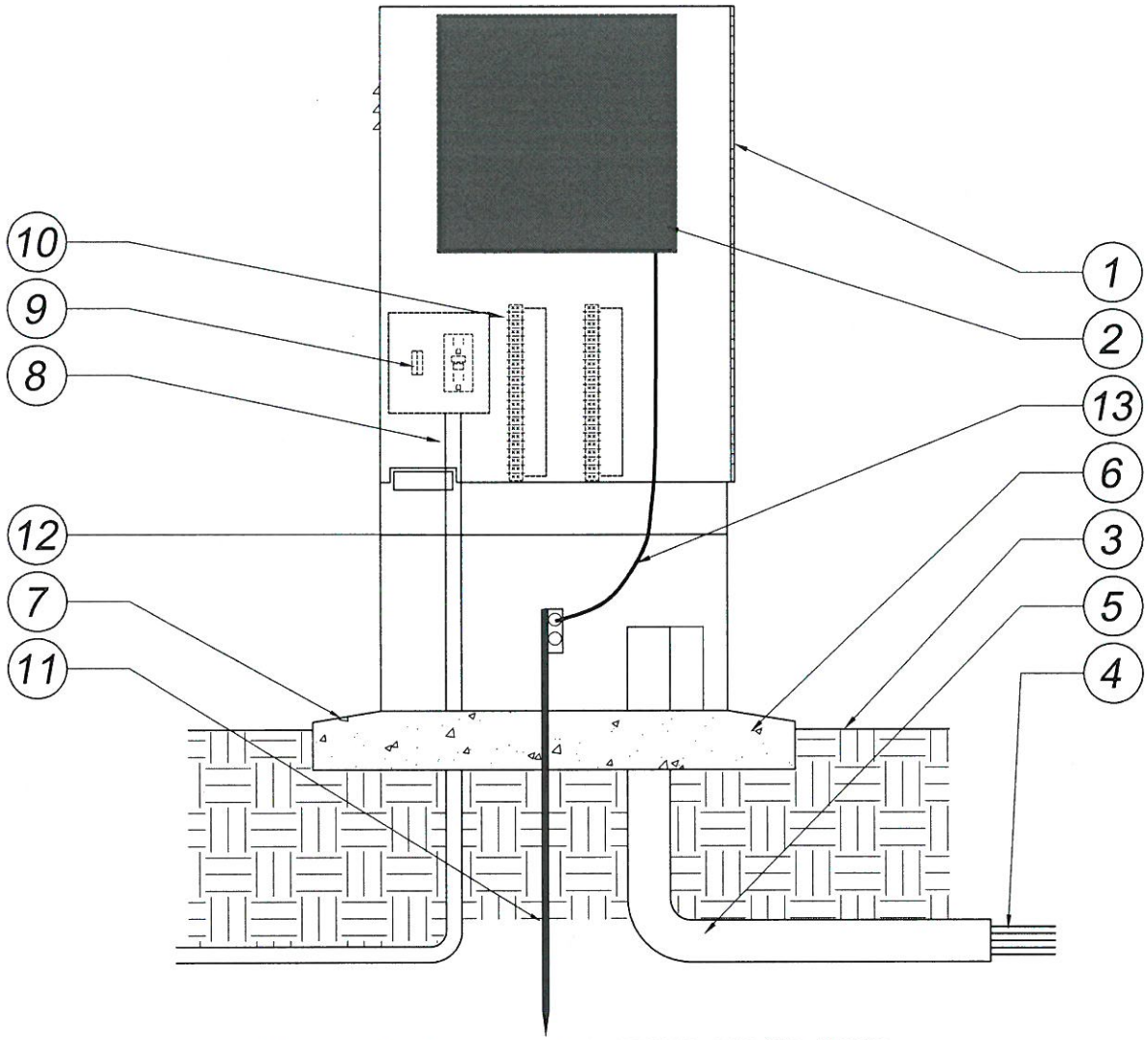
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

IRRIGATION CONTROLLER

Standard Drawing No. 404



1. CONTROLLER ENCLOSURE PER LEGEND AND/OR NOTES
2. AUTOMATIC CONTROLLER PER LEGEND
3. FINISH GRADE
4. DIRECT BURIAL CONTROL WIRES TO VALVES
5. 3" PVC SWEEP ELL – EXTEND BEYOND EDGE OF BASE
6. 'QUICKPAD' ENCLOSURE MOUNTING PAD PER MFG'S SPECS
7. SLOPE EDGE OF BASE 1% TO DRAIN AWAY FROM ENCLOSURE
8. 120V AC POWER IN CONDUIT
9. 120V ON–OFF SWITCH WITH CONVENIENCE OUTLET
10. TERMINAL STRIPS FOR CONTROL WIRES
11. 5/8" x 5' MIN. LENGTH COPPER GROUNDING ROD
12. EXTEND EDGE OF BASE 6" BEYOND EDGE OF ENCLOSURE
13. GROUND CONTROLLER PER MANUFACTURER

* EXTEND 4" ABOVE TOP OF BASE

N.T.S

Mark	Revision	By	Date
△			

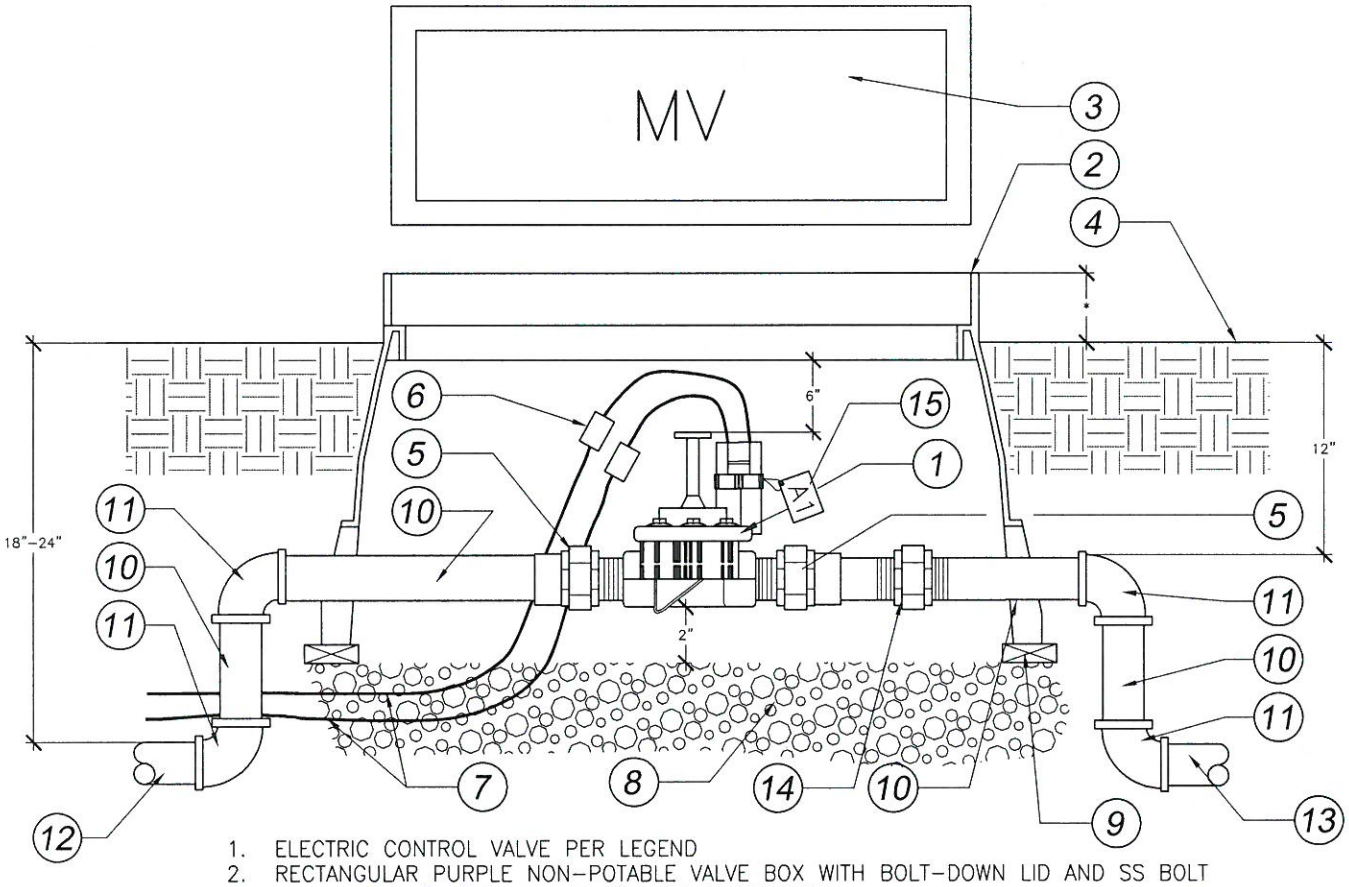
Approved: Steven Wong Date: 9-6-16

Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

IRRIGATION CONTROLLER PEDESTAL/METERED ENCLOSURE

Standard Drawing No. 405



1. ELECTRIC CONTROL VALVE PER LEGEND
2. RECTANGULAR PURPLE NON-POTABLE VALVE BOX WITH BOLT-DOWN LID AND SS BOLT
3. HEAT BRAND "MV" ON LID IN 2" HIGH CHARACTERS
4. FINISH GRADE
5. PVC SCH 40 MALE ADAPTER
6. WATERPROOF WIRE CONNECTION W/36" EXPANSION LOOP
7. #14 UF WIRES TO CONTROLLER MASTER VALVE OUTPUT
8. 3/4" CRUSHED ROCK – 6" DEEP
9. COMMON BRICK – 4 REQUIRED
10. PURPLE PVC MAINLINE PER LEGEND – LENGTH AS REQUIRED
11. PVC SCH 40 ELL – SxS
12. MAINLINE PIPING FROM POINT OF CONNECTION
13. MAINLINE PIPING TO CONTROL VALVES
14. PVC UNION – SIZE AS REQUIRED
15. 'CHRISTY'S' NON-POTABLE I.D. TAG OR EQUAL

* 1/2" IN TURF AREAS, 2" IN SHRUB AREAS
NOTE: USE TEFLON PASTE ON ALL MALE PIPE THREADS.

N.T.S

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△			

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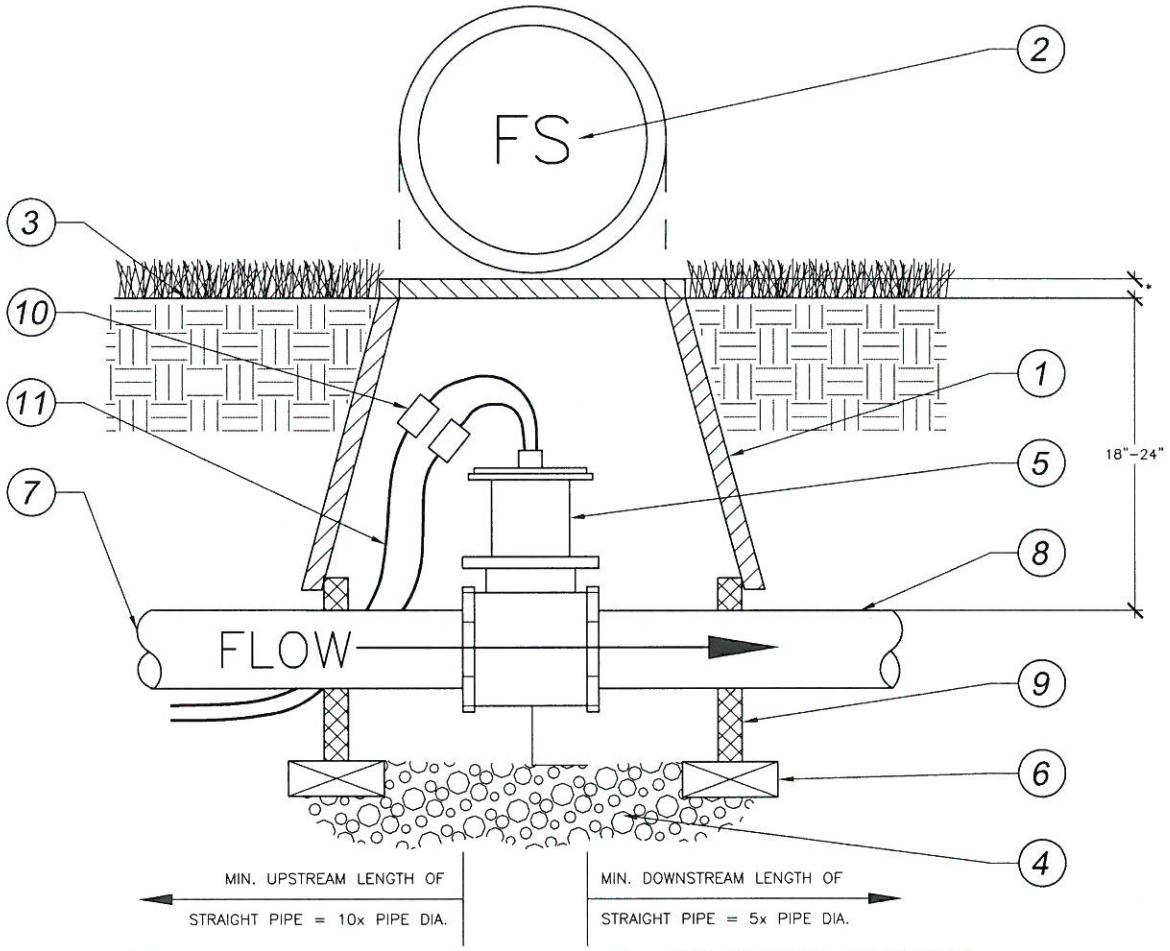
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

MASTER VALVE

Standard Drawing No. 406



1. 10" ROUND PLASTIC VALVE BOX WITH LOCKING LID AND SS BOLT
2. HEAT BRAND "FS" ON LID IN 2" HIGH CHARACTERS
3. FINISH GRADE
4. 3/4" CRUSHED ROCK – 4" DEEP
5. FLOW SENSOR PER LEGEND
6. COMMON BRICK – 4 REQUIRED
7. PVC MAINLINE FROM POC – PER LEGEND
8. PVC MAINLINE TO SYSTEM – PER LEGEND
9. VALVE BOX EXTENSIONS AS REQUIRED
10. WATERPROOF WIRE CONNECTORS WITH 36" EXPANSION LOOP
11. CABLE TO TRANSMITTER/CONTROLLER PER MANUFACTURER

* 1/2" IN TURF AREAS
2" IN SHRUB AREAS

N.T.S

Mark	Revision	By	Date
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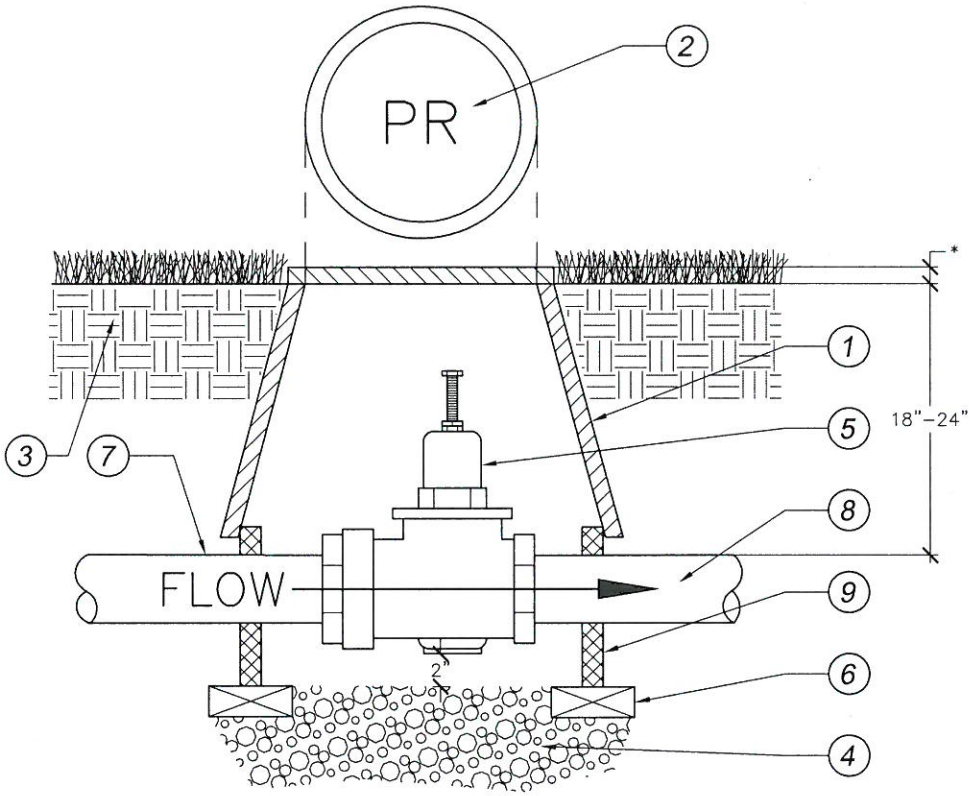
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

FLOW SENSOR

Standard Drawing No. 407



1. 10" ROUND PLASTIC VALVE BOX WITH LOCKING LID AND SS BOLT
2. HEAT BRAND BRAND "PR" ON LID IN 2" HIGH CHARACTERS
3. FINISH GRADE
4. 3/4" CRUSHED ROCK – 4" DEEP
5. PRESSURE REGULATOR PER LEGEND
6. COMMON BRICK – 4 REQUIRED
7. PVC MAINLINE FROM POC – PER LEGEND
8. PVC MAINLINE TO SYSTEM – PER LEGEND
9. VALVE BOX EXTENSIONS AS REQUIRED

* 1/2" IN TURF AREAS, 2" IN SHRUB AREAS

N.T.S

Mark	Revision	By	Date
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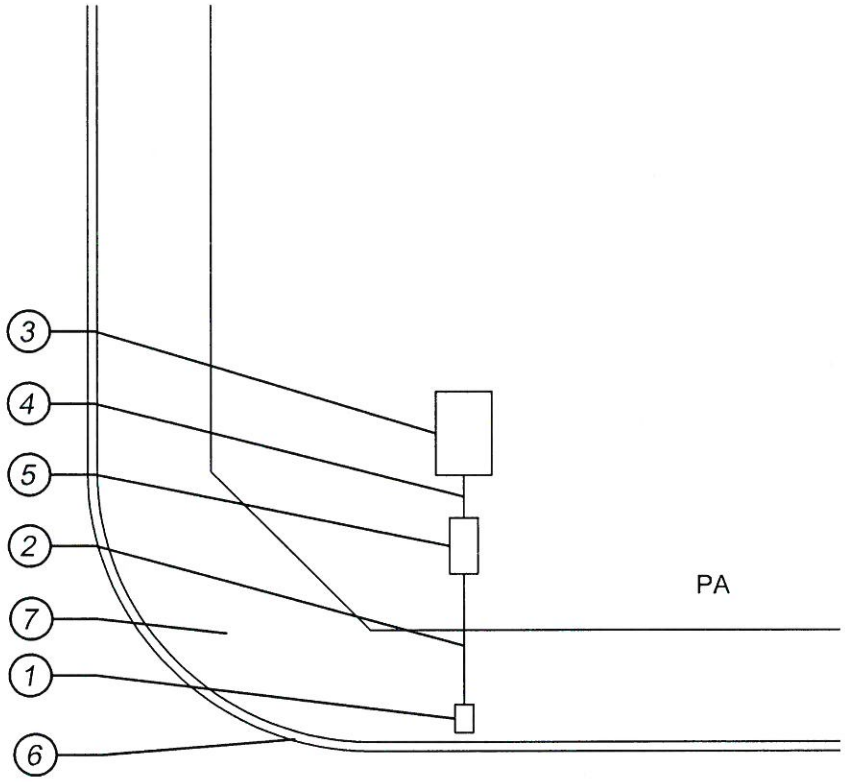
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

PRESSURE REGULATOR

Standard Drawing No. 408



1. IRRIGATION WATER METER PER EVWD STANDARDS
2. IRRIGATION WATER MAIN FROM METER PER STANDARD DETAILS
3. IRRIGATION BACKFLOW PREVENTER
4. IRRIGATION MAINLINE SUPPLY TO SYSTEM
5. BOOSTER PUMP
6. STREET CURB
7. SIDEWALK

NOTES:

- PUMP TO BE EQUIPPED WITH VFD DRIVE
- PUMP TO BE INSTALLED IN A MARINE GRADE ALUMINUM ENCLOSURE WITH RECTANGULAR PUNCH OUTS FOR VIEWING AND HEAT DISSIPATION. ENCLOSURE SHALL BE VANDAL AND WEATHER RESISTANT.
- PUMP TO BE MOUNTED ON STRUCTURAL ALUMINUM SKID WITH MOUNTING FLANGES ON FRONT AND BACK TO ALLOW FOR MOUNTING OF SKID TO CONCRETE PAD
- PUMP CONTROL PANEL SHALL HAVE A NEMA 3R NON-METALLIC ENCLOSURE

PA =PLANTER AREA

N.T.S

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△			

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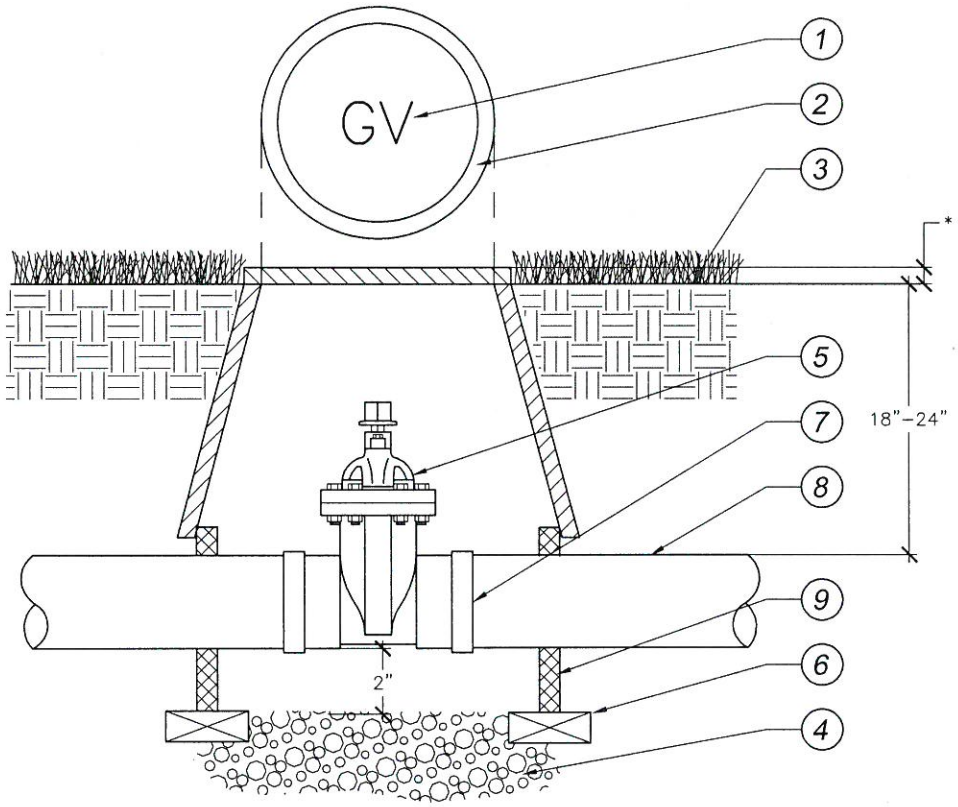
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

BOOSTER PUMP

Standard Drawing No. 409



1. ROUND PLASTIC VALVE BOX WITH LOCKING LID AND SS BOLT SIZED AS REQUIRED
2. HEAT BRAND "GV" ON LID IN 2" HIGH CHARACTERS
3. FINISH GRADE
4. 3/4" CRUSHED ROCK – 4" DEEP
5. GATE VALVE PER LEGEND
6. COMMON BRICK – 4 REQUIRED
7. ADAPT TO MAINLINE AS NECESSARY
8. MAINLINE PIPING PER LEGEND
9. VALVE BOX EXTENSIONS AS REQUIRED

* 1/2" IN TURF AREAS, 2" IN SHRUB AREAS

NOTES:
USE TEFLON TAPE ON ALL MALE PIPE THREADS.

N.T.S

Mark	Revision	By	Date
△			

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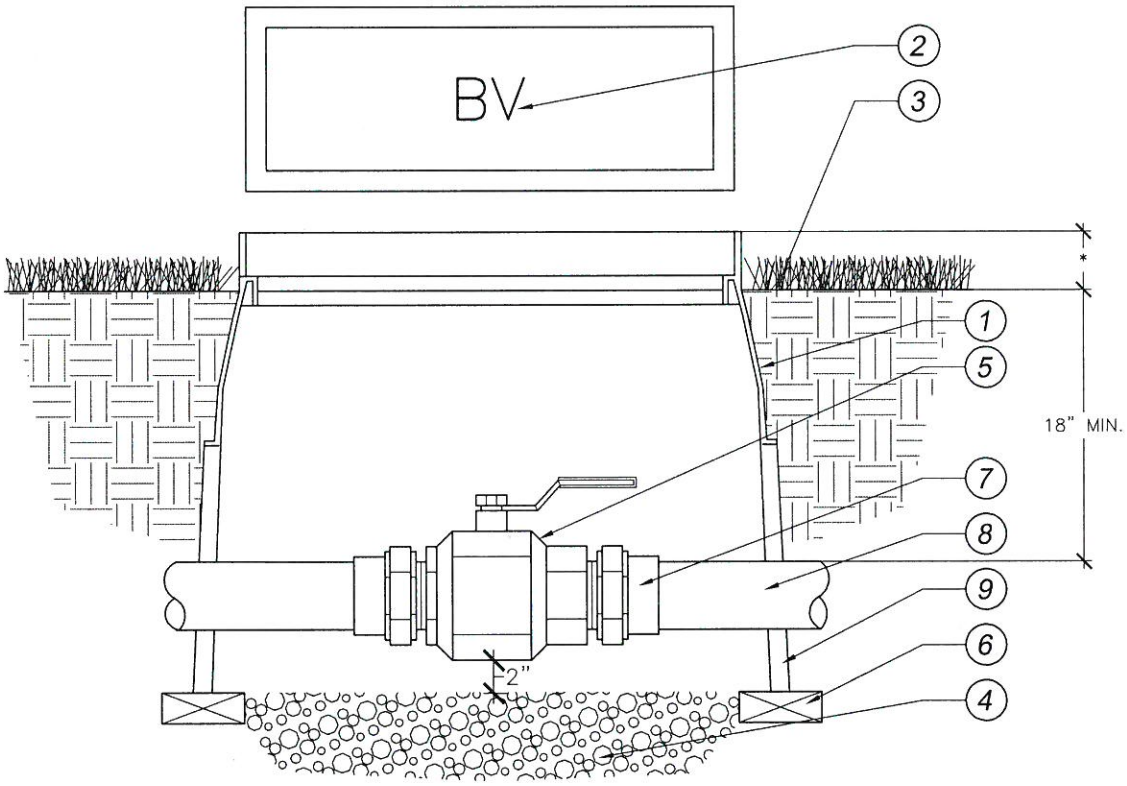
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

GATE VALVE

Standard Drawing No. 410



1. RECTANGULAR VALVE BOX WITH BOLT–DOWN LID AND SS BOLT
2. HEAT BRAND "BV" ON LID IN 2" HIGH CHARACTERS
3. FINISH GRADE
4. 3/4" CRUSHED ROCK – 4" DEPTH
5. BALL VALVE PER IRRIGATION PLAN
6. COMMON BRICK – 4 REQUIRED
7. SCH 40 PVC MALE ADAPTER – 2 REQUIRED
8. MAINLINE PIPING PER IRRIGATION PLAN
9. VALVE BOX EXTENSION(S) AS REQUIRED

NOTE:
USE TEFLON TAPE ON ALL MALE PIPE THREADS.

* 1/2" IN TURF AREAS AND 2" IN SHRUB AREAS

N.T.S

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△			

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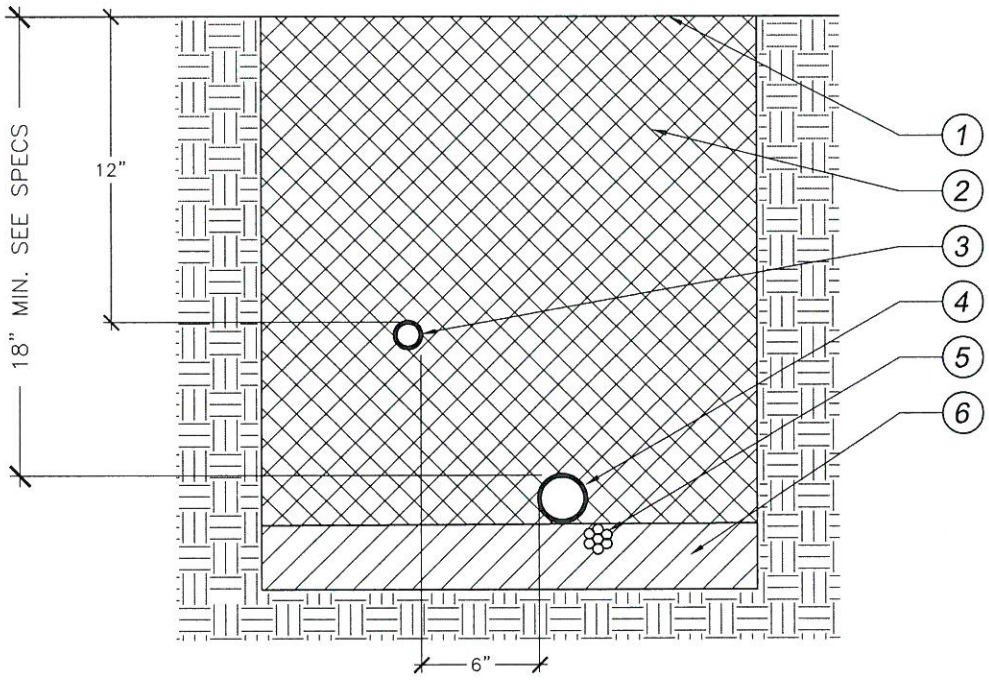
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

BALL VALVE

Standard Drawing No. 411



1. FINISH GRADE
2. CLEAN BACKFILL – 90% COMPACTION REQUIRED – SEE SPECS
3. NON–PRESSURE LATERAL LINE PER LEGEND
4. PRESSURE SUPPLY LINE PER LEGEND
5. CONTROL WIRES – INSTALL BELOW PRESSURE SUPPLY LINE
6. PROVIDE 2" OF CLEAN BACKFILL BELOW PRESSURE MAINLINE

NOTES:
BUNDLE AND TAPE WIRES AT 12'O.C. PIGTAIL AND LOOP CONTROL WIRES AT ALL 90° CHANGES IN DIRECTION. SPLICING OF WIRE RUNS IS NOT ALLOWED UNLESS APPROVED BY THE CITY. 36" MIN. COVER IS REQUIRED FOR RECLAIMED WATER MAINLINE (WHERE APPLICABLE). INSTALL 1'x1'X1' THRUST BLOCK AT ALL TERMINAL POINTS ON MAINLINE.

N.T.S

Mark	Revision	By	Date
△			

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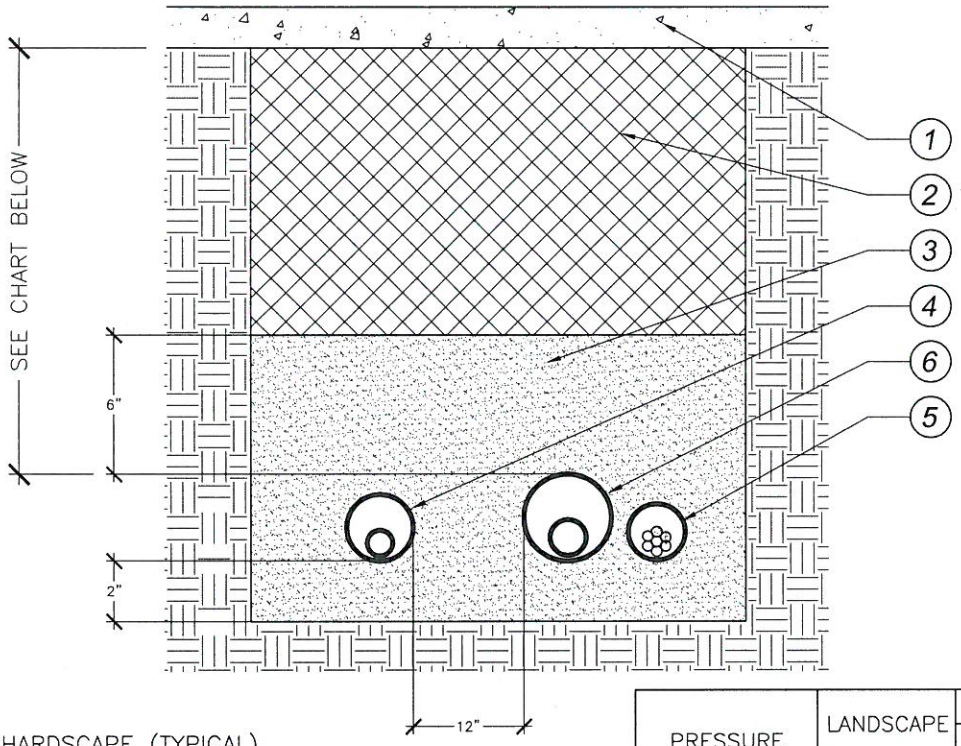
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

TRENCHING

Standard Drawing No. 412



1. HARDSCAPE (TYPICAL)
2. CLEAN BACKFILL – 90% COMPACTION REQUIRED – SEE SPECS
3. SAND (TYPICAL)
4. NON–PRESSURE LATERAL LINE/ SLEEVE (SIZE PER CHART)
5. CONTROL WIRE SLEEVE ADJACENT TO MAINLINE SLEEVE (SIZE PER CHART)
6. PRESSURE SUPPLY LINE / SLEEVE (SIZE PER CHART)

PRESSURE MAINLINE	LANDSCAPE	<3"	24"
		3"+	36"
	VEHICULAR PAVING	<3"	30"
		3"+	36"
NON PRESSURE LATERAL	LANDSCAPE	<3"	12"
		3"+	18"
	VEHICULAR PAVING	<3"	24"
		3"+	30"

NOTES:
SIZE ALL SLEEVES PER SLEEVING CHART ON PLANS. EXTEND SLEEVES 12" BEYOND EDGE OF HARDSCAPE ON BOTH ENDS. RECLAIMED WATER SLEEVES TO BE A MINIMUM 42"–48" DEEP (OR PER WATER DISTRICT STANDARDS) WHERE APPLICABLE.

N.T.S

Mark	Revision	By	Date
△			

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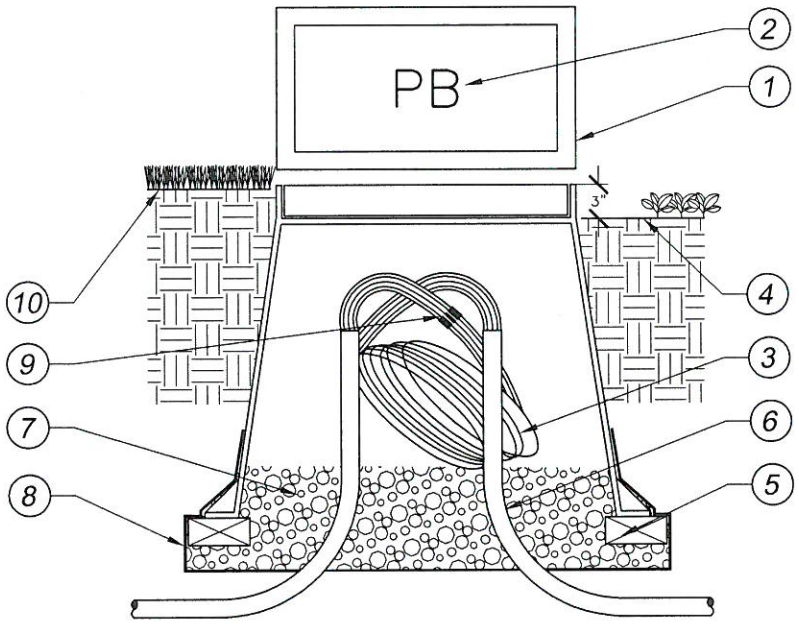
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

SLEEVING

Standard Drawing No. 413



1. PLASTIC RECTANGULAR VALVE BOX WITH BOLT DOWN COVER. USE STAINLESS BOLT, NUT AND WASHER. BOX TO BE PLACED AT RIGHT ANGLE TO HARDSCAPE EDGE.
2. HEAT BRAND 'PB' ONTO LID IN 2" CHARACTERS
3. 36" WIRE EXPANSION LOOP (TYP.)
4. FINISH GRADE IN SHRUB AREAS – 3" BELOW TOP OF BOX
5. COMMON BRICK (4 REQUIRED)
6. PVC ELECTRICAL SWEEP IF INSTALLED IN CONDUIT
7. PEA GRAVEL (3 CU.FT.)
8. LANDSCAPE FABRIC
9. WIRE CONNECTORS
10. FINISH GRADE IN TURF AREAS – 1" BELOW TOP OF BOX

NOTES:
ELECTRICAL SWEEPS NOT REQUIRED FOR DIRECT BURIAL INSTALLATION.
OPEN ENDS OF ELECTRICAL SWEEPS TO BE SEALED USING APPROVED AEROSOL FOAM PRODUCT.

N.T.S

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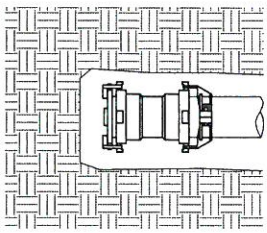
Ernest Wong, Public Works Director/City Engineer

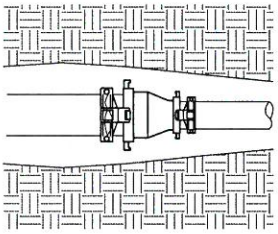
CITY OF HIGHLAND

PULL BOX

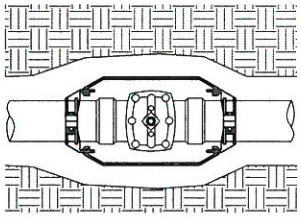
Standard Drawing No. 414



END CAP OR PLUG



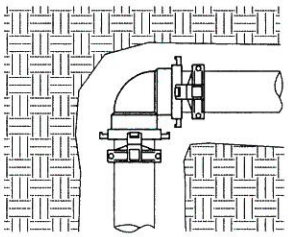
CHANGE LINE SIZE, REDUCER



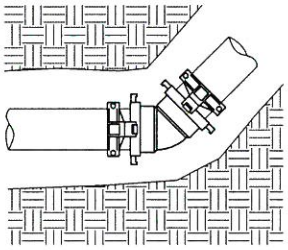
LH SERIES RESTRAINT FOR SLIP-ON GATE VALVES

DESIGNATED COMPONENTS ARE THE SAME IN ALL PANELS.

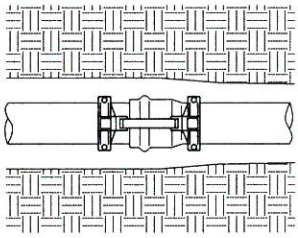
A. SPECIFIED IRRIGATION PIPE
B. JOINT FITTING
C. LH SERIES RESTRAINT
D. TRENCH AREA
E. UNDISTURBED SOIL



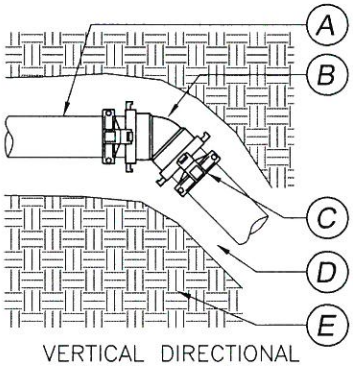
DIRECTIONAL CHANGE, 90 ELBOW



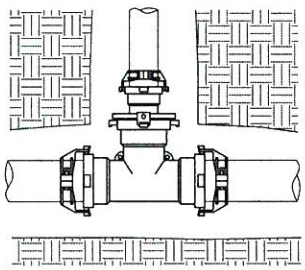
DIRECTIONAL CHANGE, 45 ELBOW



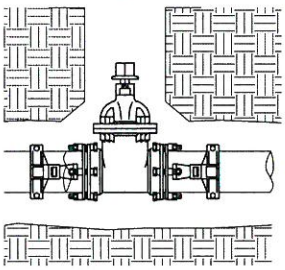
LB SERIES RESTRAINT



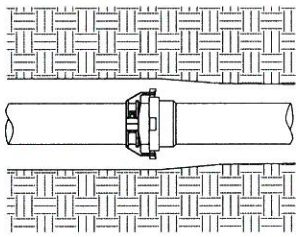
VERTICAL DIRECTIONAL CHANGE, 45 ELBOW



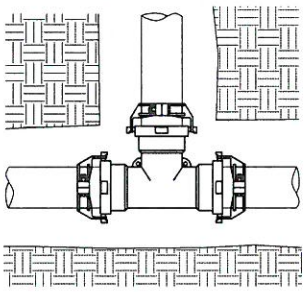
DIRECTIONAL CHANGE, TEE USED AS REDUCER



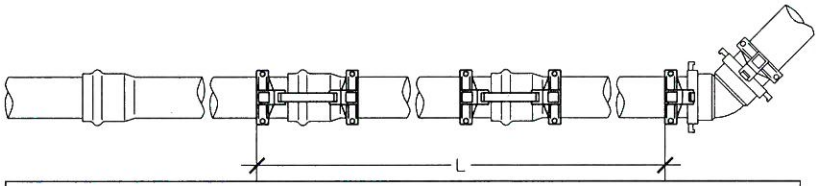
VALVE RESTRAINT



LH SERIES RESTRAINT



THRU LINE CONNECTION, TEE



NOTES:
1D = ONE SIZE DOWN (I.E. 4-3, 8-6)
2D = TWO SIZES DOWN (I.E. 6-3, 10-6)
DE = DEAD END FOR A CAP, PLUG OR GATE VALVE

MINIMUM RESTRAINED LENGTH (L)

PIPE SIZE	BENDS				REDUCTIONS		
	11°	22°	45°	90°	1D	2D	DE
3"	1'	2'	4'	9'	6'	8'	24'
4"	2'	3'	7'	16'	11'	16'	36'
6"	2'	5'	10'	23'	24'	32'	50'
8"	3'	6'	12'	30'	26'	44'	66'
10"	4'	7'	15'	36'	26'	45'	80'
12"	4'	8'	17'	42'	36'	45'	94'

N.T.S

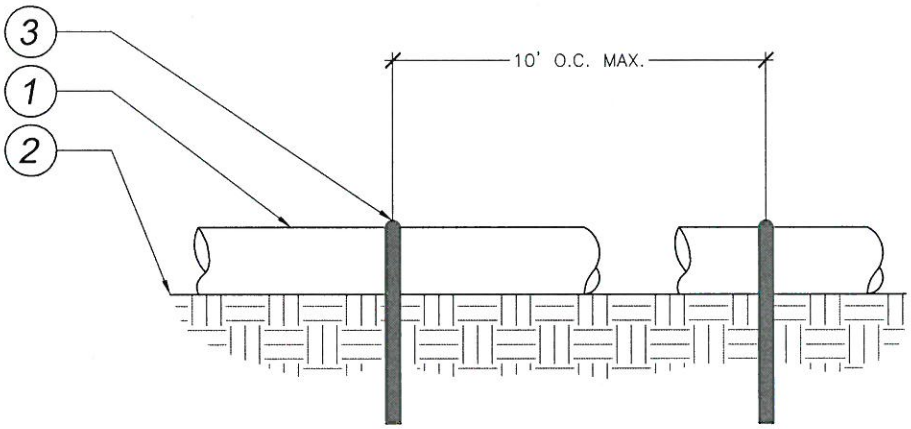
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

JOINT RESTRAINTS

Standard Drawing No. 415



1. UV RATED PVC PIPE INSTALLED ON GRADE. PIPE TO BE SCH 40 OR AS NOTED IN THE LEGEND.
2. FINISH GRADE
3. #3x24" REBAR STAKE WITH A "J-HOOK" ON ONE END TO SECURE PIPE TO SLOPE. INSTALL AT A MAXIMUM OF 10' O.C. FOR STRAIGHT PIPE RUNS, AND INSTALL AT ALL OF THE FOLLOWING LOCATIONS:
   a) AT ALL TEES
   b) AT ALL ELBOWS
   c) AT ALL HEADS
   d) AT ALL ATMOSPHERIC VACUUM BREAKERS
   e) ANY OTHER LOCATION THE PIPE NEEDS TO BE SECURED TO PREVENT THE PIPE FROM "SAGGING" ON THE SLOPE.

N.T.S

Mark	Revision	By	Date
△			

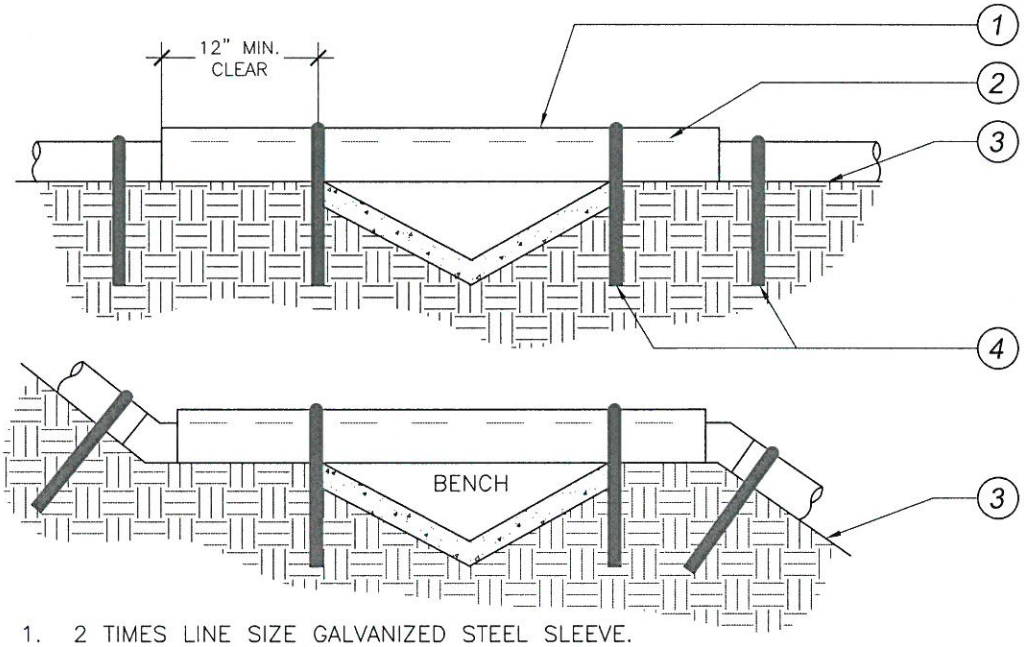
Approved: Ernest Wong Date: 9-6-16

Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

BROWNLINE ON-GRADE

Standard Drawing No. 416



1. 2 TIMES LINE SIZE GALVANIZED STEEL SLEEVE.
2. UV RATED PVC PIPE INSTALLED ON GRADE. PIPE TO BE SCH 40 OR AS NOTED IN THE LEGEND.
3. FINISH GRADE
4. #3x24" REBAR STAKE WITH A "J-HOOK" ON ONE END TO SECURE PIPE TO SLOPE. INSTALL AT A MAXIMUM OF 10' O.C. FOR STRAIGHT PIPE RUNS, AND INSTALL AT ALL OF THE FOLLOWING LOCATIONS:
   a) AT ALL TEES
   b) AT ALL ELBOWS
   c) AT ALL HEADS
   d) AT ALL ATMOSPHERIC VACUUM BREAKERS
   e) ANY OTHER LOCATION THE PIPE NEEDS TO BE SECURED TO PREVENT THE PIPE FROM "SAGGING" ON THE SLOPE.

N.T.S

Mark	Revision	By	Date
△			

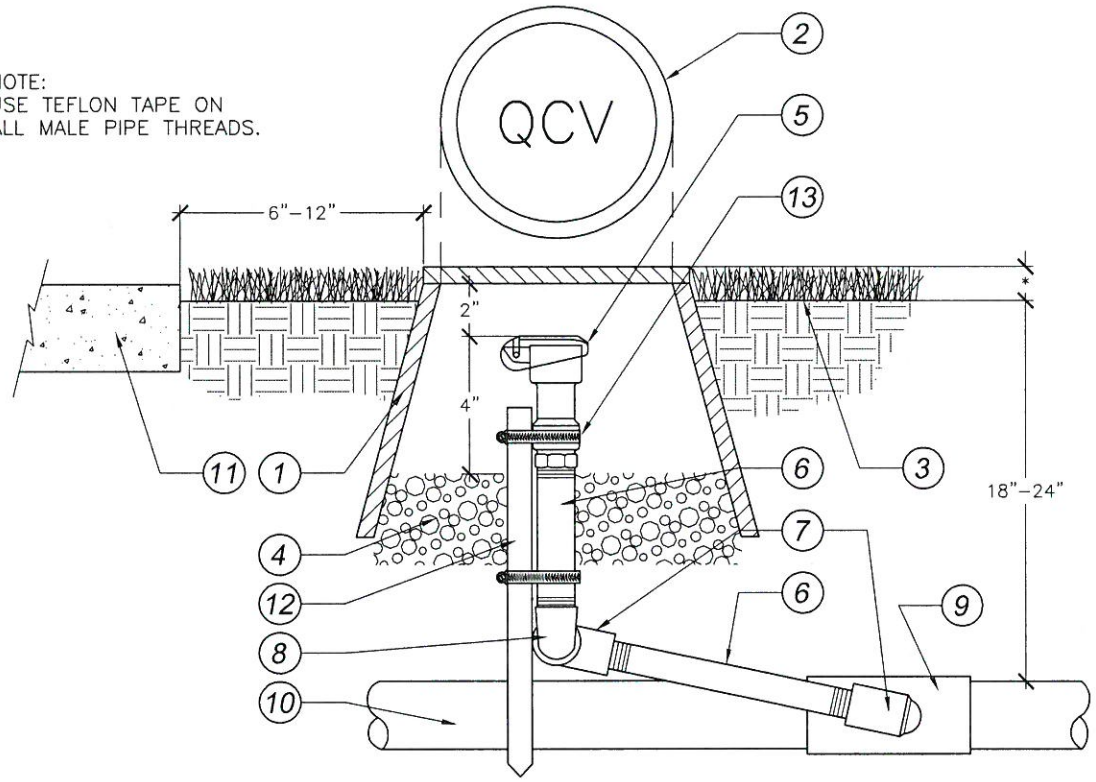
Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

BROWNLINE ON-GRADE AT V-DITCH

Standard Drawing No. 417

NOTE:
USE TEFLON TAPE ON
ALL MALE PIPE THREADS.



1. 10" ROUND PLASTIC VALVE BOX WITH LOCKING LID AND SS BOLT
2. HEAT BRAND "QCV" ON LID IN 2" HIGH CHARACTERS
3. FINISH GRADE
4. 3/4" CRUSHED ROCK 4" DEEP
5. QUICK COUPLER PER LEGEND
6. PVC SCH 80 NIPPLE LENGTH AS REQUIRED
7. PVC SCH 40 STREET ELL – TxT
8. PVC SCH 40 ELL – TxT
9. SCH 40 PVC MAINLINE FITTING
10. PVC SCH 40 MAINLINE PIPING PER EQUIPMENT LEGEND
11. WALK, CURB, OR WALL, ETC.
12. #4 REBAR, 18" MINIMUM LENGTH SUPPORT STAKE
13. STAINLESS STEEL CLAMP – 2 REQ.

* 1/2" IN TURF AREAS
2" IN SHRUB AREAS.

N.T.S

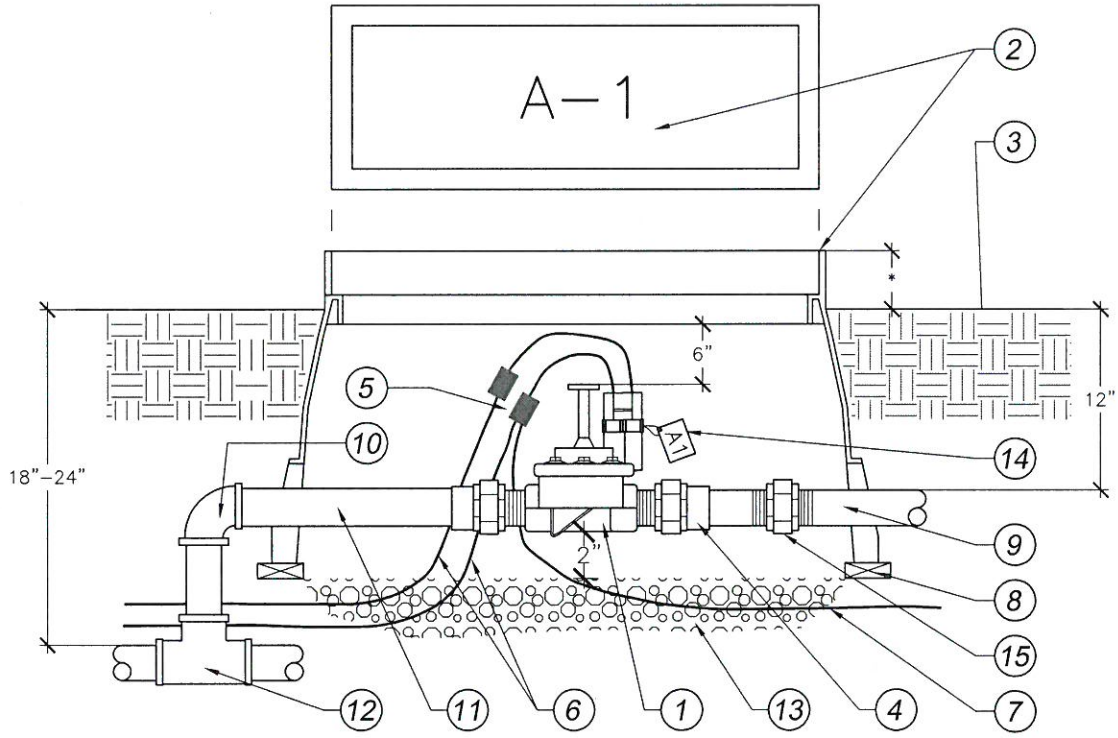
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

QUICK COUPLING VALVE

Standard Drawing No. 418



1. ELECTRIC CONTROL VALVE PER LEGEND
2. 12"x18" PLASTIC VALVE BOX WITH BOLT DOWN LID AND SS BOLT – HEAT HEAT BRAND STATION NUMBER ON LID IN 2" HIGH CHARACTERS
3. FINISH GRADE
4. PVC SCH 40 MALE ADAPTER – SIZE AS REQUIRED – TYP. OF 2
5. WATERPROOF WIRE CONNECTOR WITH 36" COILED EXPANSION LOOP
6. WIRES FROM CONTROLLER
7. COMMON WIRE TO OTHER VALVES ON SAME CONTROLLER
8. COMMON BRICK – 4 REQUIRED
9. PVC LATERAL LINE PER LEGEND
10. PVC SCH 40 ELL – SxS
11. PVC MAINLINE PER LEGEND
12. SCH 40 PVC MAINLINE FITTING
13. 3/4" DIA. GRAVEL – 6" DEEP
14. 'CHRISTY'S' I.D. TAG OR EQUAL
15. PVC UNION – SIZE AS REQUIRED

NOTES:
TEE OFF MAINLINE TO BE SAME SIZE AS LATERAL LINE EXITING VALVE.
ONLY REDUCE PIPE SIZE AT VALVE.
* 1/2" IN TURF, 2" IN PLANTER

N.T.S

Mark	Revision	By	Date
△			

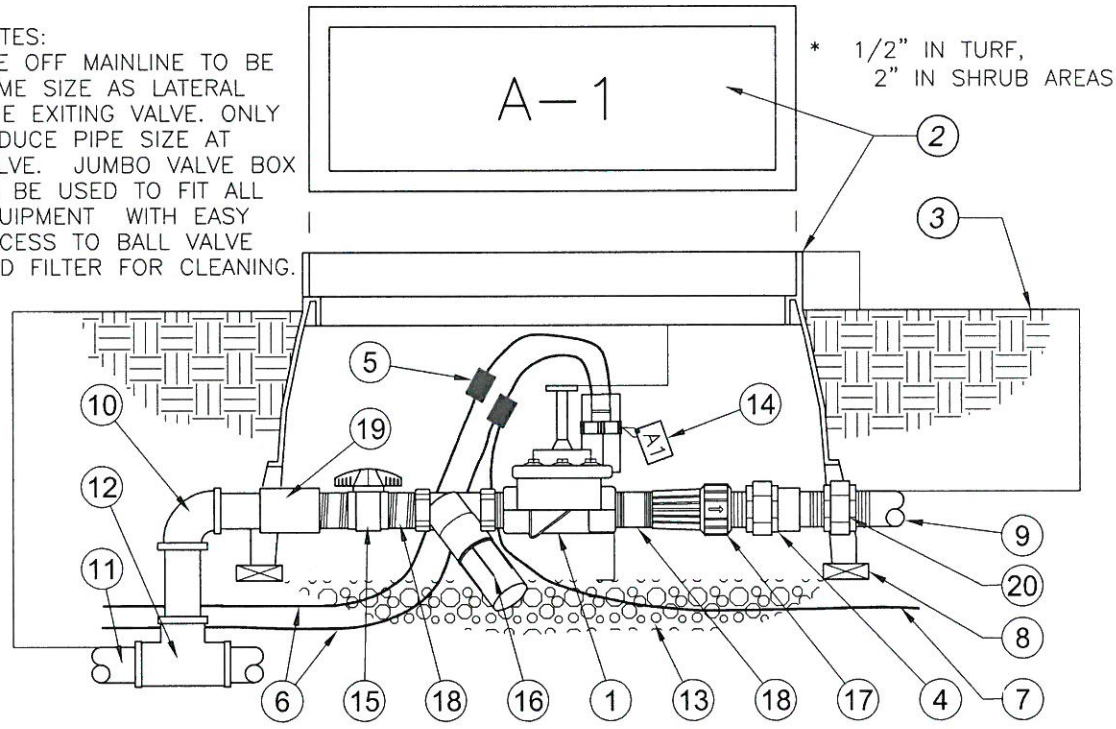
Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

REMOTE CONTROL VALVE

Standard Drawing No. 419

NOTES:
TEE OFF MAINLINE TO BE SAME SIZE AS LATERAL LINE EXITING VALVE. ONLY REDUCE PIPE SIZE AT VALVE. JUMBO VALVE BOX TO BE USED TO FIT ALL EQUIPMENT WITH EASY ACCESS TO BALL VALVE AND FILTER FOR CLEANING.



1. ELECTRIC CONTROL VALVE PER LEGEND
2. JUMBO PLASTIC VALVE BOX WITH BOLT DOWN LID AND SS BOLT – HEAT BRAND STATION NUMBER ON LID IN 2" HIGH CHARACTERS
3. FINISH GRADE
4. PVC SCH 40 MALE ADAPTER
5. WATERPROOF WIRE CONNECTOR WITH 36" COILED EXPANSION LOOP
6. WIRES FROM CONTROLLER
7. COMMON WIRE TO OTHER VALVES ON SAME CONTROLLER
8. COMMON BRICK – 4 REQUIRED
9. PVC LATERAL LINE PER LEGEND
10. PVC SCH 40 ELL – SxS
11. PVC MAINLINE PER LEGEND – TYP
12. SCH 40 PVC MAINLINE FITTING
13. 3/4" CRUSHED ROCK – 6" DEEP
14. 'CHRISTYS' NON-POTABLE I.D. TAG OR EQUAL
15. BALL VALVE PER LEGEND
16. Y-FILTER PER LEGEND
17. PRESSURE REGULATOR PER LEGEND
18. SCH 80 PVC NIPPLE – TYP
19. SCH 40 PVC FEMALE ADAPTER
20. PVC UNION – SIZE AS REQUIRED

N.T.S

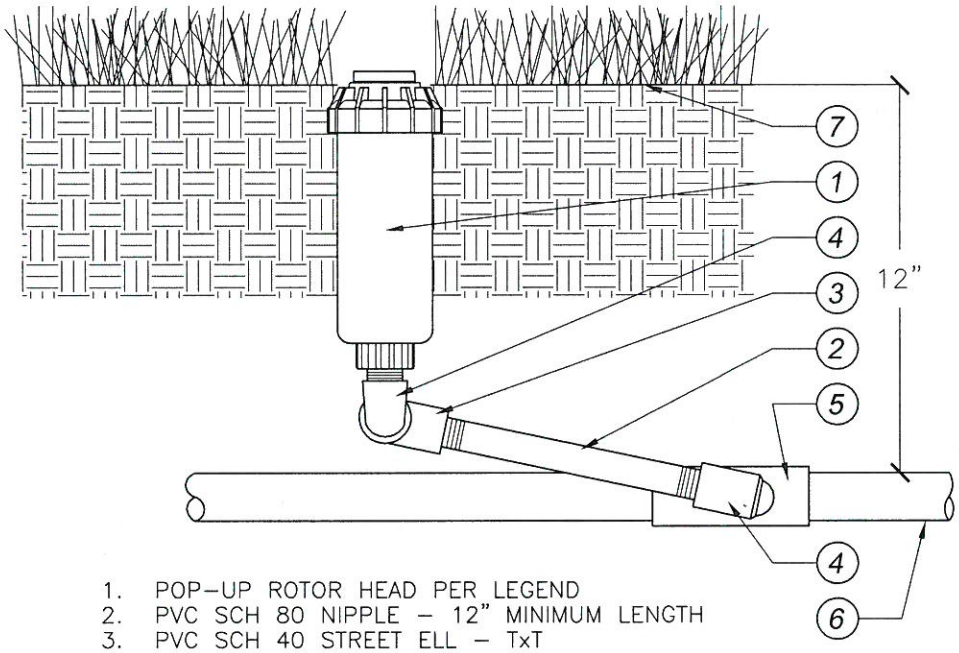
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIP VALVE FILTER ASSEMBLY

Standard Drawing No. 420



1. POP-UP ROTOR HEAD PER LEGEND
2. PVC SCH 80 NIPPLE – 12" MINIMUM LENGTH
3. PVC SCH 40 STREET ELL – TxT
4. MARLEX STREET ELL – TxT
5. PVC SCH 40 LATERAL LINE FITTING
6. LATERAL LINE PER EQUIPMENT LEGEND
7. FINISH GRADE

NOTES:
USE TEFLON TAPE ON ALL MALE PIPE THREADS FOR PVC TO PVC CONNECTIONS. SET PERIMETER HEADS 1"–2" FROM EDGE OF WALK, WALL, OR CURB, ETC. ALL FITTINGS FOR SWING JOINTS MUST BE SAME SIZE AS INLET ON BASE OF HEAD. LATERAL LINE FITTING OUTLET SHALL BE SAME SIZE AS HEAD INLET.

N.T.S

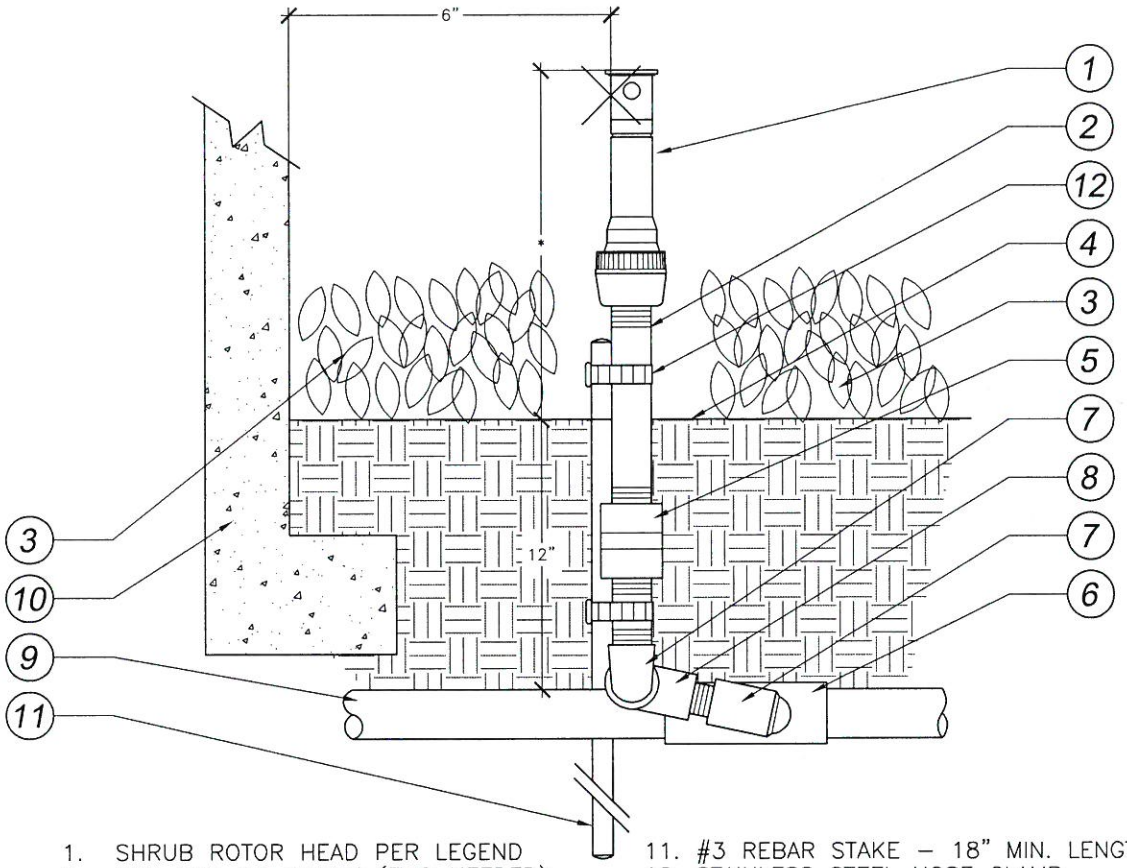
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

ROTOR
POP-UP

Standard Drawing No.
421



1. SHRUB ROTOR HEAD PER LEGEND
2. PVC SCH 80 NIPPLE (TWO NEEDED) LENGTH AS REQUIRED
3. SHRUB AND/OR GROUND COVER PLANTING
4. FINISH GRADE
5. ANTI-DRAIN VALVE AS REQUIRED
6. PVC SCH 40 LATERAL LINE FITTING
7. MARLEX STREET ELL – TxT
8. PVC SCH 40 STREET ELL – TxT
9. LATERAL LINE PIPING PER LEGEND
10. WALL, FENCE, OR CURB, ETC.
11. #3 REBAR STAKE – 18" MIN. LENGTH
12. STAINLESS STEEL HOSE CLAMP (TWO REQUIRED)

* 12" MIN. FOR ROTOR HEADS

NOTES:
LOW HEAD DRAINAGE WILL NOT BE ALLOWED. CONTRACTOR TO INSTALL ANTI-DRAIN VALVES ON ALL HEADS THAT SHOW DRAINAGE AFTER VALVE IS SHUT OFF. THIS SHALL BE INCLUDED AT NO ADDITIONAL COST TO OWNER.

N.T.S

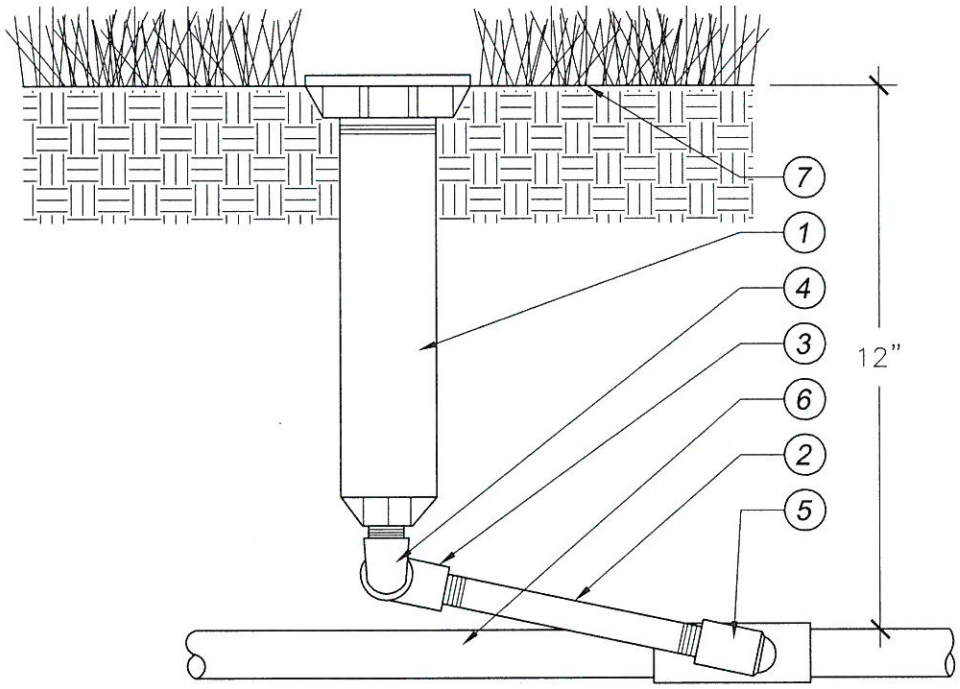
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

ROTOR FIXED

Standard Drawing No. 422



1. POP-UP SPRAY HEAD PER LEGEND
2. PVC SCH 80 NIPPLE – 12" MINIMUM LENGTH
3. PVC SCH 40 STREET ELL – TxT
4. MARLEX STREET ELL – TxT
5. PVC SCH 40 LATERAL LINE FITTING
6. LATERAL LINE PER EQUIPMENT LEGEND
7. FINISH GRADE

NOTES:
USE TEFLON TAPE ON ALL MALE PIPE THREADS FOR PVC TO PVC CONNECTIONS. SET PERIMETER HEADS 1"–2" FROM EDGE OF WALK, WALL, OR CURB, ETC. ALL FITTINGS FOR SWING JOINTS MUST BE SAME SIZE AS INLET ON BASE OF HEAD. LATERAL LINE FITTING OUTLET SHALL BE SAME SIZE AS HEAD INLET.

N.T.S

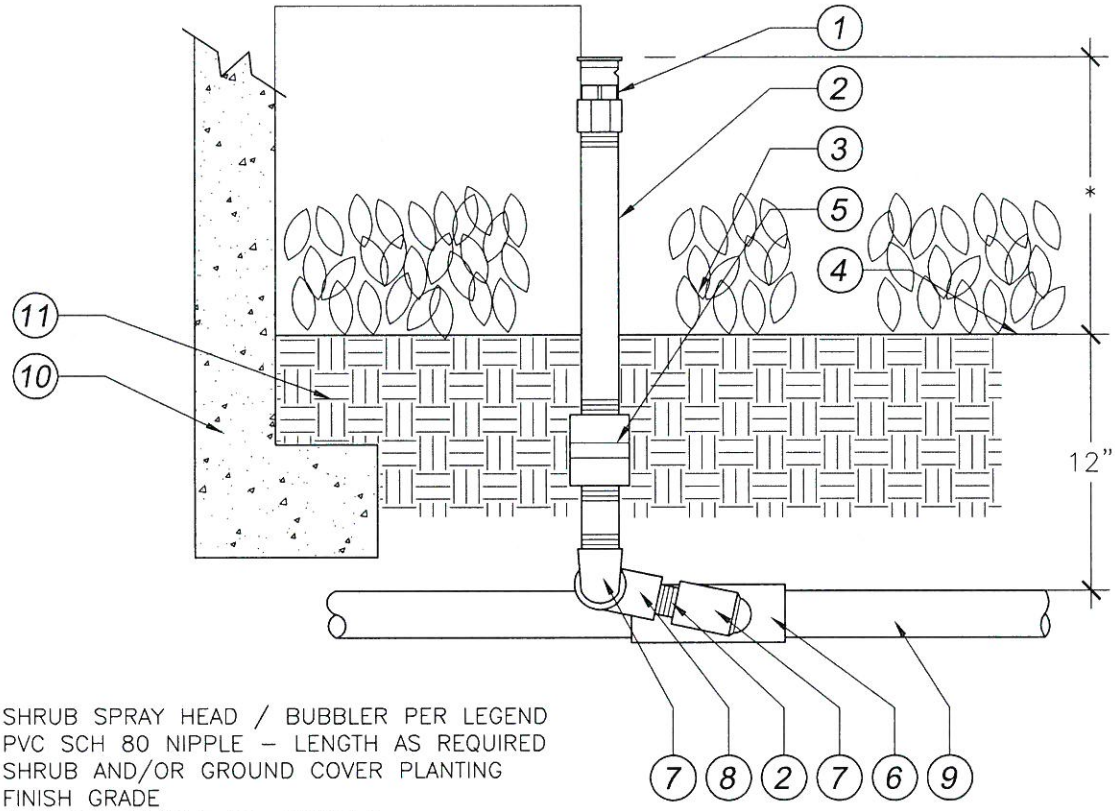
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

ROTORARY SPRAY POP-UP

Standard Drawing No. 423



1. SHRUB SPRAY HEAD / BUBBLER PER LEGEND
2. PVC SCH 80 NIPPLE – LENGTH AS REQUIRED
3. SHRUB AND/OR GROUND COVER PLANTING
4. FINISH GRADE
5. ANTI–DRAIN VALVE AS REQUIRED
6. PVC SCH 40 LATERAL LINE FITTING
7. MARLEX STREET ELL – TxT
8. PVC SCH 40 STREET ELL – TxT
9. LATERAL LINE PIPING PER LEGEND
10. WALL, FENCE, OR CURB, ETC.
11. NATIVE SOIL

* 12" ABOVE FINISH GRADE FOR SHRUB HEADS
3" ABOVE FINISH GRADE FOR BUBBLERS

NOTES:
LOW HEAD DRAINAGE WILL NOT BE ALLOWED. CONTRACTOR TO INSTALL ANTI–DRAIN CHECK VALVES ON ALL HEADS THAT SHOW DRAINAGE AFTER THE VALVE IS SHUT OFF. THIS SHALL BE INCLUDED AT NO ADDITIONAL COST TO THE OWNER.

N.T.S

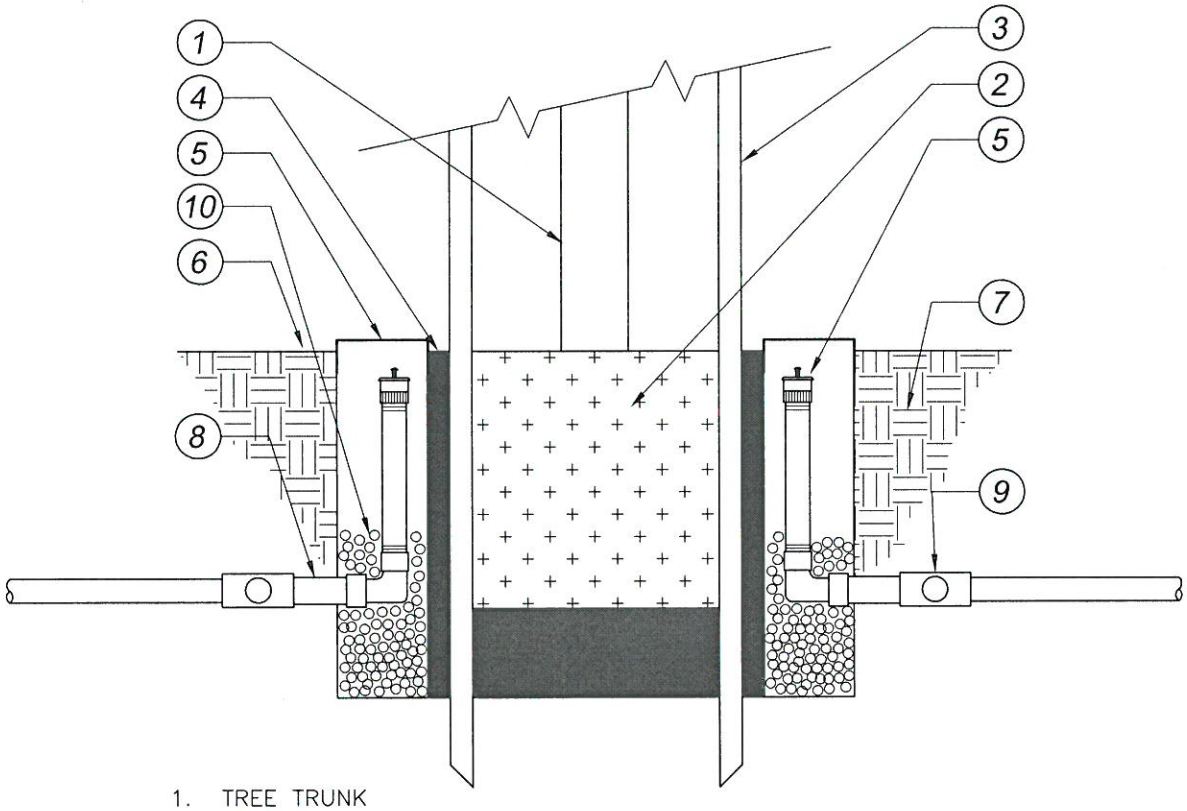
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

ROTARY SPRAY FIXED

Standard Drawing No. 424



1. TREE TRUNK
2. TREE ROOTBALL
3. 3" LODGE POLE PINE STAKES PER PLANTING PLAN
4. PLANT BACKFILL PER PLANTING PLAN
5. BUBBLER ASSEMBLY PER IRRIGATION LEGEND
6. FINISH GRADE
7. UNDISTURBED NATIVE SOIL
8. 1/2" CLASS 315 PVC LATERAL LINE
9. SCH 40 PVC TEE AROUND PLANTING PIT
10. PEA GRAVEL IN BASE OF DRAIN PIPE

* INSTALL ASSEMBLY WITH CAP FLUSH TO GRADE

N.T.S

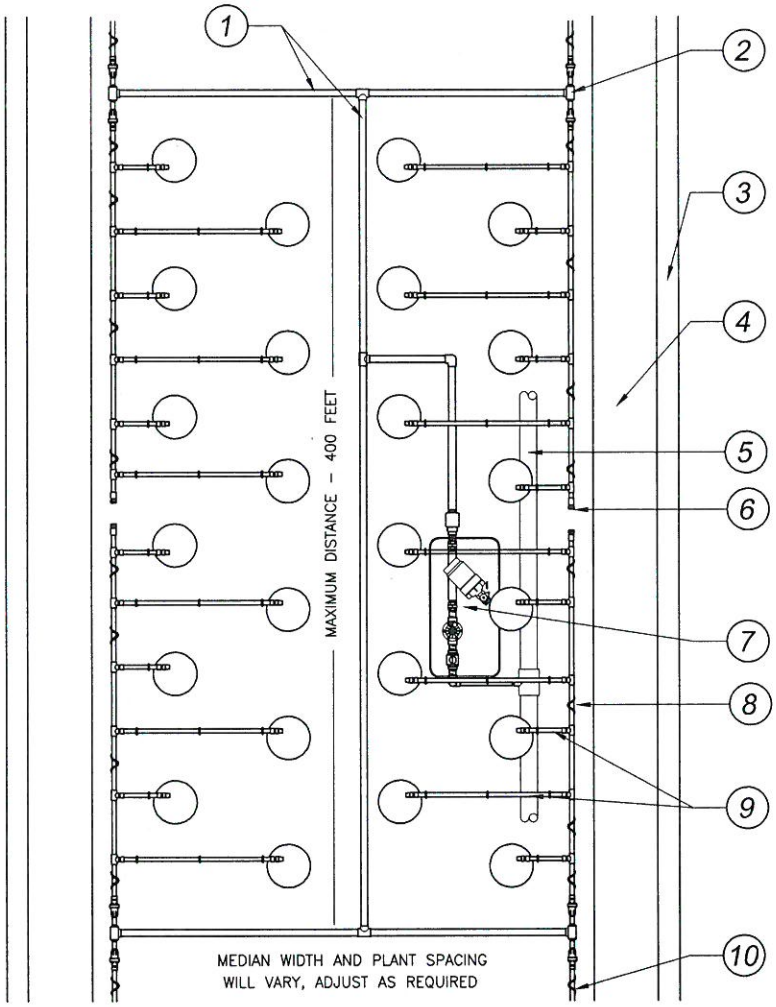
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

TREE ROOT WATERING SYSTEM

Standard Drawing No. 425



1. BURIED SCH. 40 PVC SUBMAIN
2. UVR PVC SST TEE, ON GRADE, TRANSITION UP FROM BURIED PVC SUBMAIN
3. MEDIAN CURB PER PLAN.
4. MAINTENANCE STRIP PER PLAN.
5. BURIED PVC IRRIGATION MAINLINE 18" FROM EDGE OF CONCRETE.
6. FLUSH VALVE PER FLUSH VALVE DETAIL.
7. DRIP REMOTE CONTROL VALVE WITH WYE FILTER AND PRESSURE REGULATOR PER IRRIGATION LEGEND.
8. SCH. 40 PVC LATERAL ON GRADE WITH V.I.T. PS18 PIPE STABILIZERS AT MAX. 6' O.C.
9. DRIP EMITTER ASSEMBLY PER DRIP EMITTER DETAIL.
10. DRIP SYSTEM AND LATERAL PIPING MAY EXTEND NO MORE THAN 200' PAST BURIED PVC CROSS LATERAL. THE TOTAL LENGTH OF ANY ONE DRIP SYSTEM SHALL BE NO MORE THAN 800'.

N.T.S

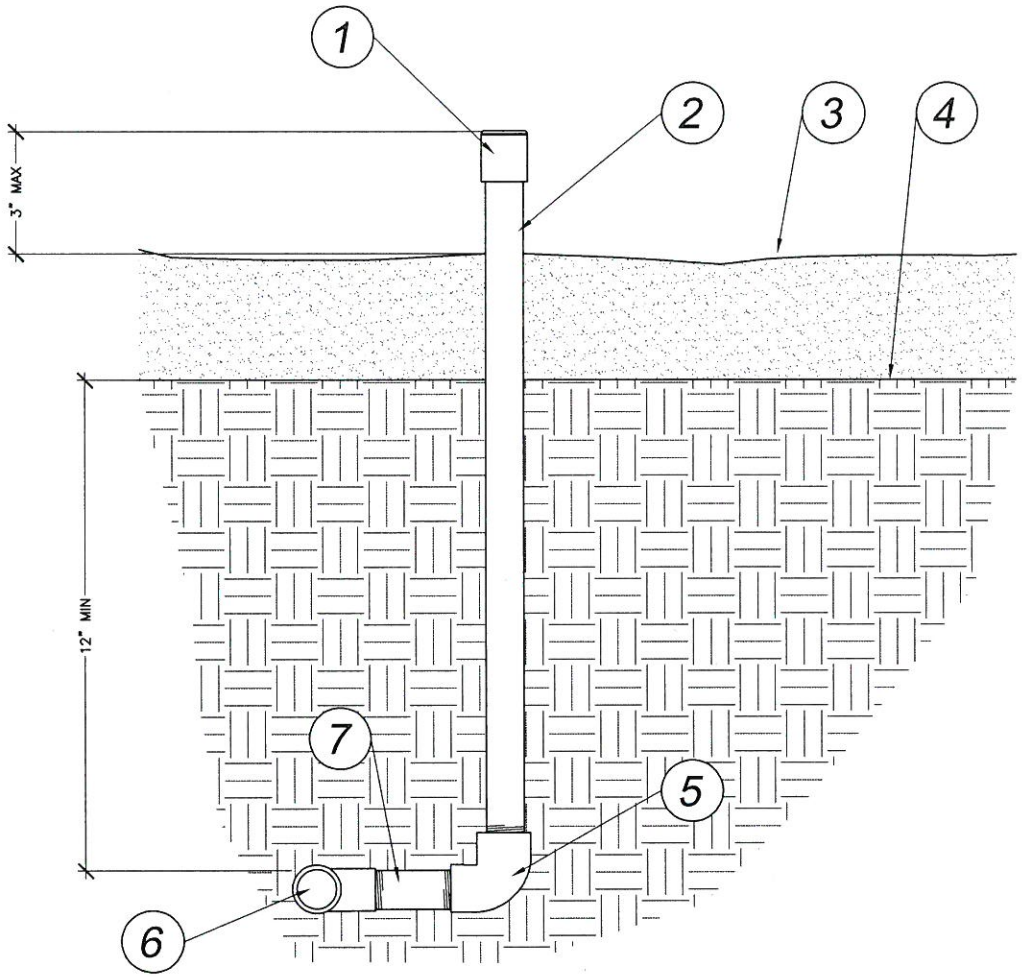
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

POINT-TO-POINT DRIP LAYOUT

Standard Drawing No. 426



1. DRIP EMITTER PER IRRIGATION LEGEND
2. GIH18 18" RISER ASSEMBLY
3. MULCH PER PLAN
4. FINISH GRADE
5. SCHEDULE 40 PVC ELBOW, TXT
6. PVC TEE SCH. 40 OR ELBOW LINE SIZE
7. SCHEDULE 80 PVC NIPPLE, TXT, MAXIMUM 24" LENGTH..

N.T.S

Mark	Revision	By	Date
△			

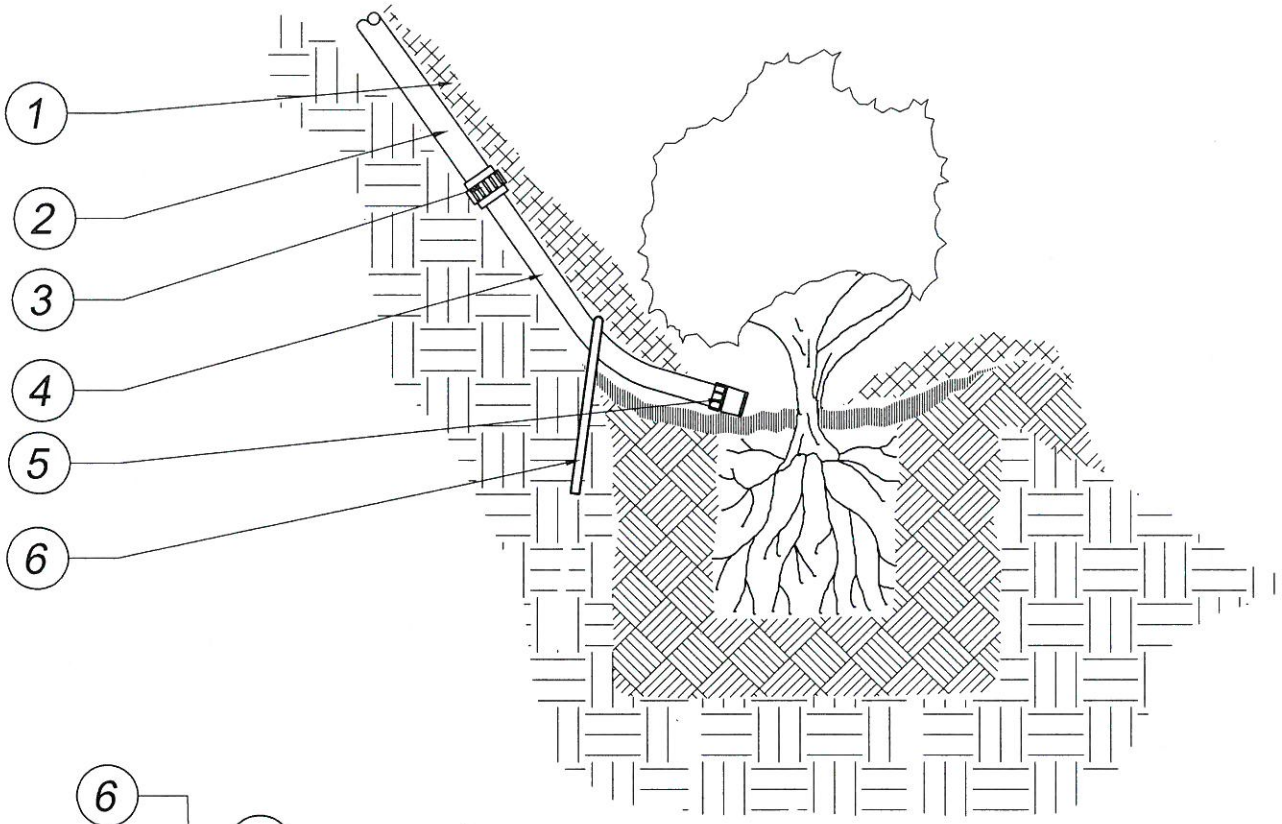
Approved: Ernest Wong Date: 9-6-16

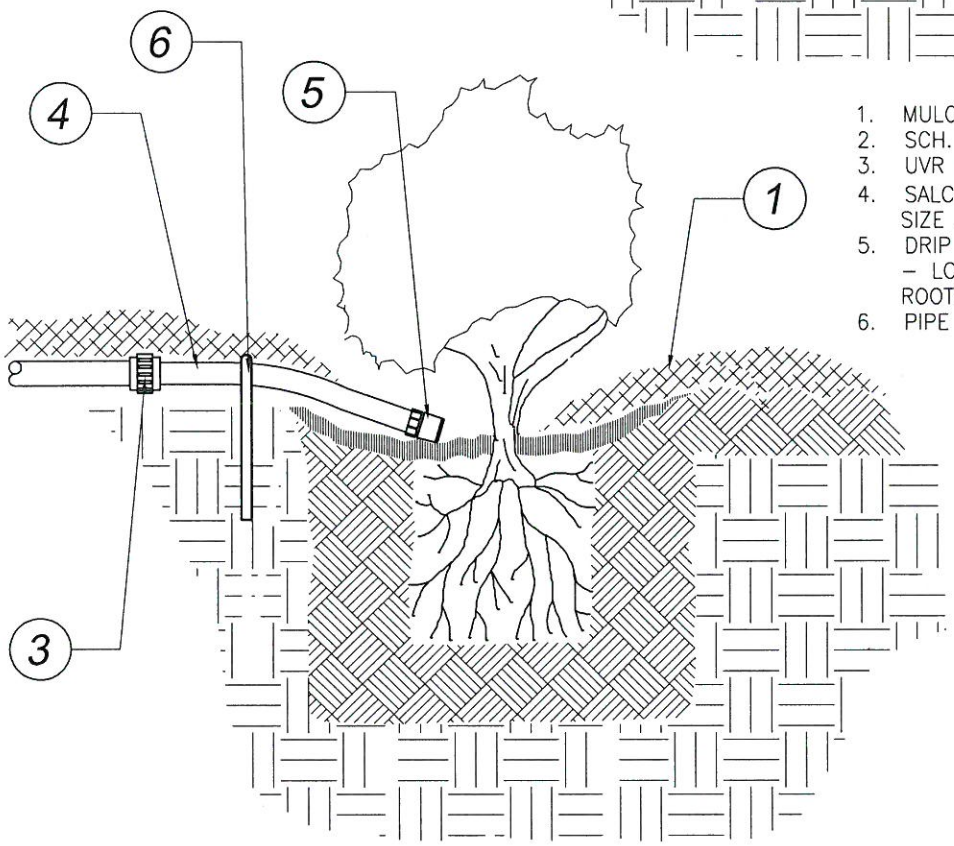
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

POINT-TO-POINT DRIP GPH ASSEMBLY

Standard Drawing No. 427





1. MULCH PER PLANTING PLAN
2. SCH. 40 PVC PIPE
3. UVR FEMALE ADAPTER
4. SALCO ½" IPS FLEX PVC RISER – SIZE AS NEEDED.
5. DRIP EMITTER PER IRRIGATION LEGEND – LOCATE AT REAR OF PLANT ROOTBALL WHERE APPLICABLE.
6. PIPE STAKE PER MEDIAN DRIP LAYOUT.

N.T.S

Mark	Revision	By	Date
△			

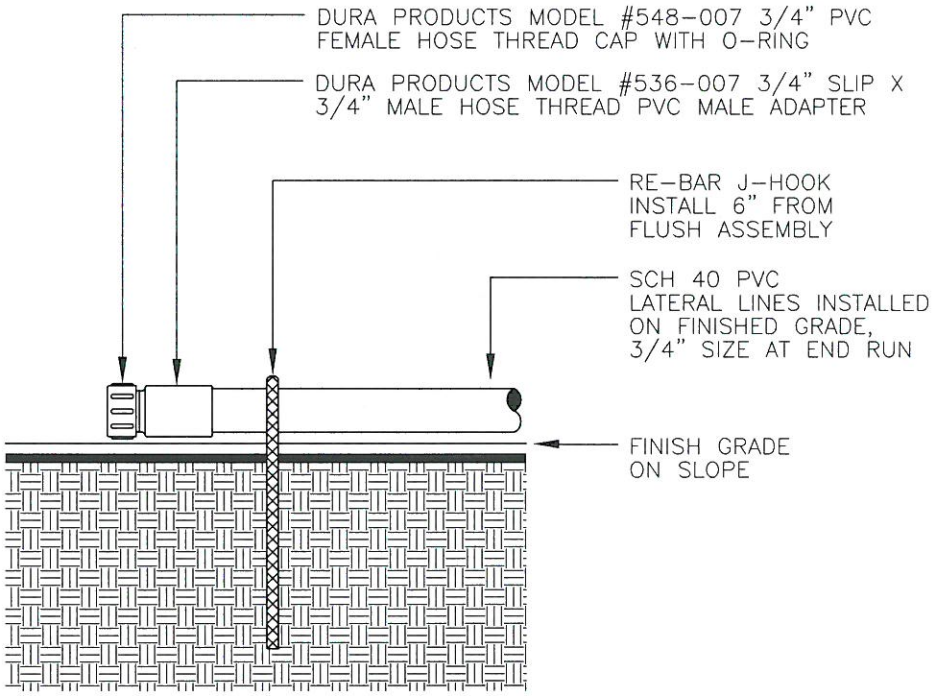
Approved: Ernest Wong Date: 9-6-16

Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

POINT-TO-POINT DRIP EMITTER

Standard Drawing No. 428



NOTE:
FLUSH CAP TO REMAIN IN PLACE UNLESS FLUSHING DRIP LATERAL LINES.

A HOSE SHALL BE ATTACHED TO MHT MALE ADAPTER WHENEVER FLUSHING OF LINES IS PERFORMED TO PREVENT EROSION OF SLOPE MATERIALS.

ALL FLUSH VALVES MUST BE LISTED ON AS-BUILTS

N.T.S

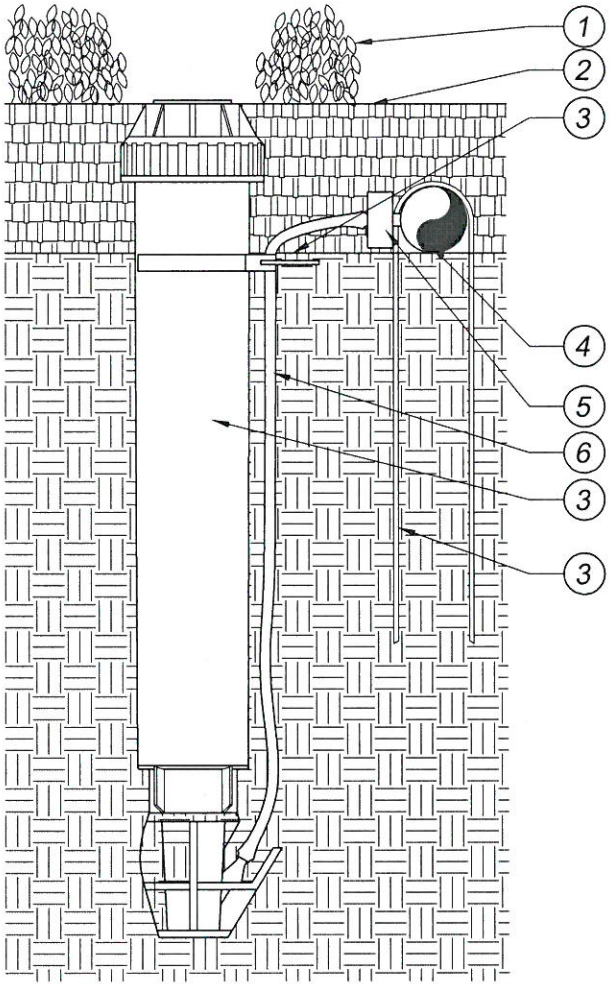
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

POINT-TO-POINT FLUSH VALVE

Standard Drawing No. 429



1. PLANT MATERIAL PER PLANTING PLAN
2. TOP OF MULCH
3. FINISH GRADE PER PLAN
4. DRIP TUBING PER PLAN
5. 1/4" SELF-PIERCING BARB CONNECTOR
6. DISTRIBUTION TUBING
7. DRIP SYSTEM OPERATION INDICATOR PER PLAN
8. DRIP STAKE PER SPECIFICATIONS

NOTES:
SET INDICATOR 2"-6" FROM EDGE OF CURBS AND WALKS, AND 6"-12" FROM FIXED VERTICLE OBJECTS SUCH AS FENCES, WALLS, AND BUILDINGS, ETC.

N.T.S

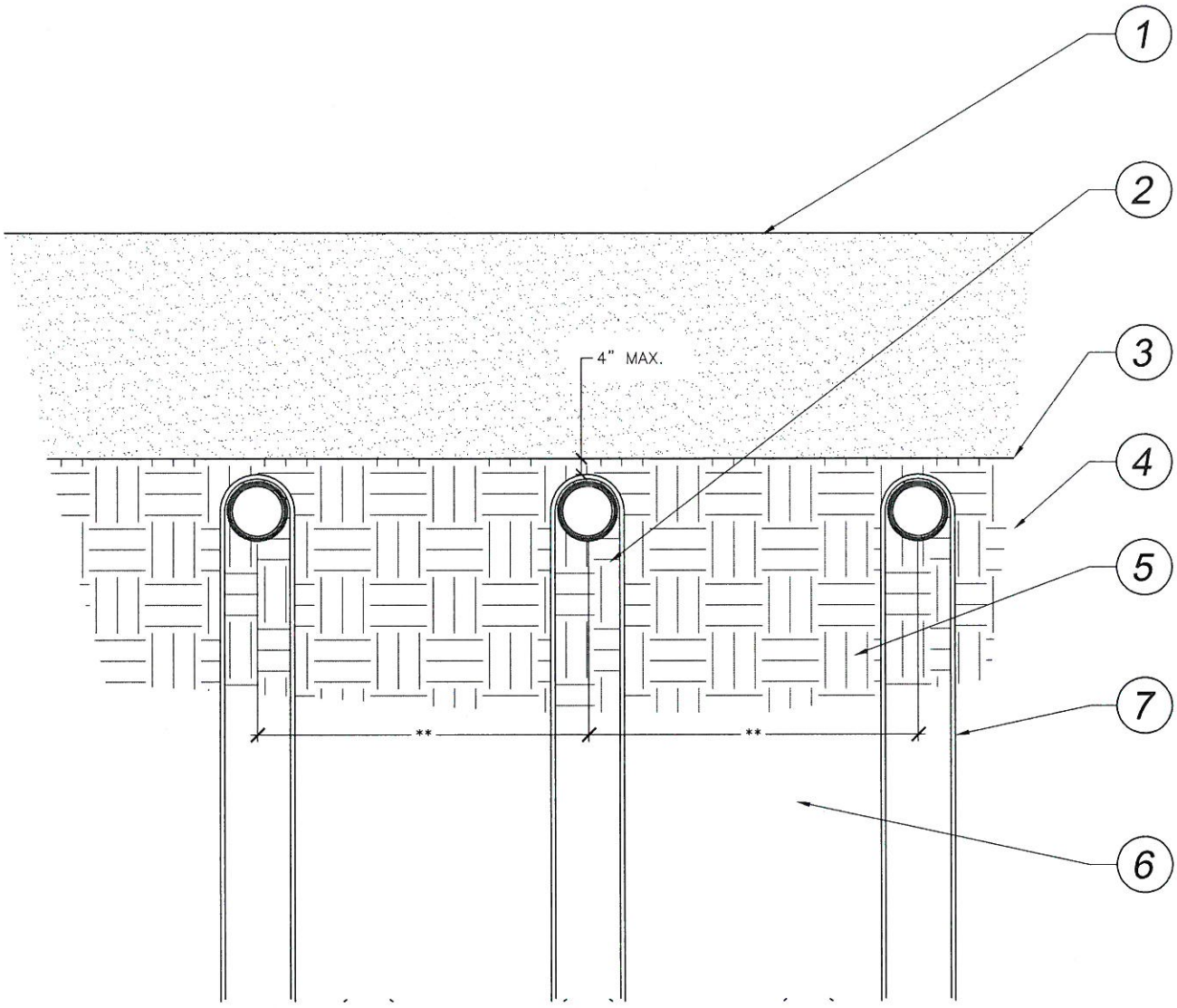
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIP OPERATION INDICATOR

Standard Drawing No. 430



1. TOP OF MULCH
2. LANDSCAPE DRIP LINES
3. FINISH GRADE IN PLANTER AREAS, BACKFILL OVER DRIPLINE
4. FINISHED GRADE
5. SUB-GRADE OF NATIVE SOIL
6. (**) LATERAL DRIP LINE SPACING – SPACING
7. RAINBIRD TDS-050 TIE-DOWN STAKE AT 3' O.C. MAX.

N.T.S

Mark	Revision	By	Date
△			

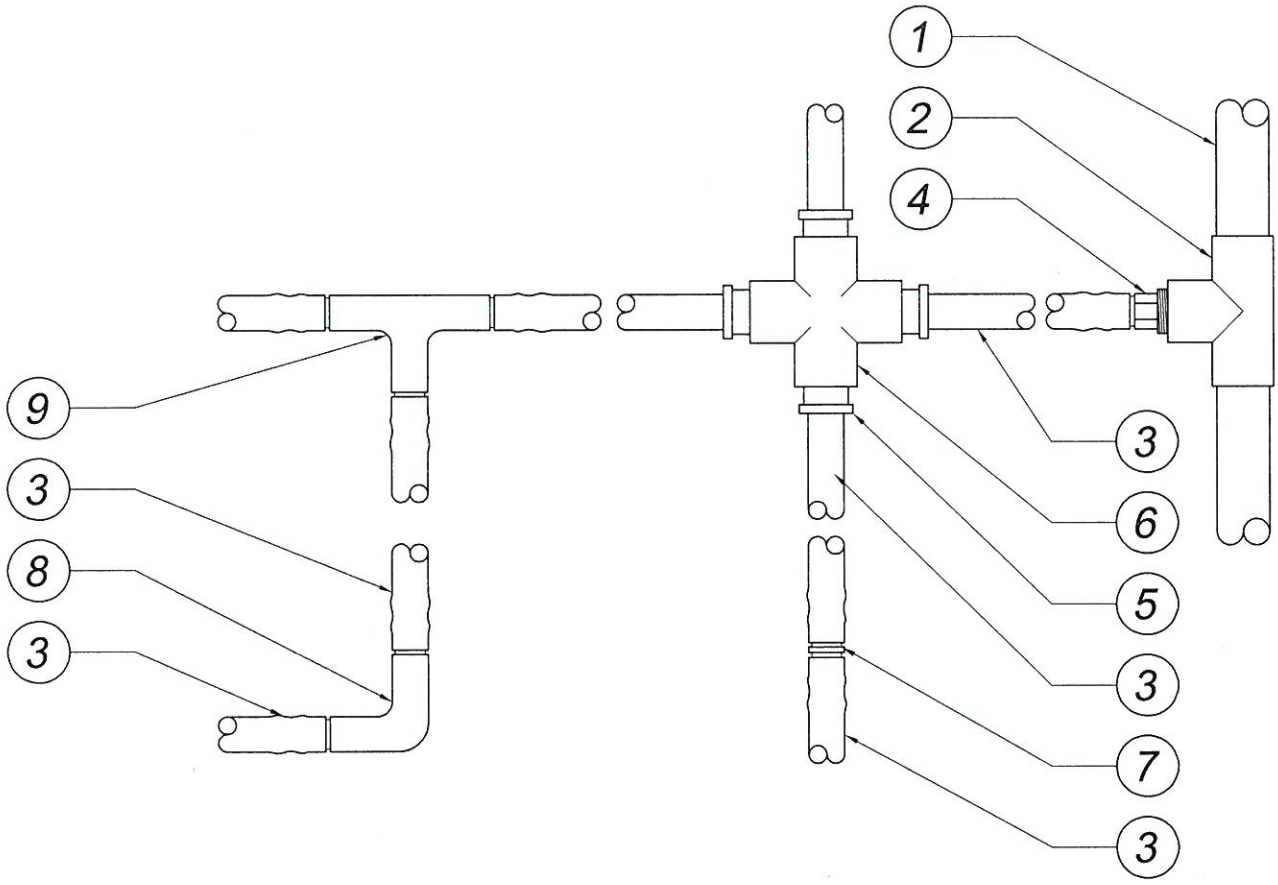
Approved: Ernest Wong Date: 9-6-16

Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE TRENCH

Standard Drawing No. 431



1. PVC PIPE (PER LEGEND)
2. SCH. 40 PVC TEE
3. LANDSCAPE DRIP TUBING (PER LEGEND)
4. SCH. 40 PVC MALE ADAPTER
5. COMPRESSION ADAPTER FITTING
6. SCH. 40 PVC CROSS
7. COMPRESSION COUPLING
8. COMPRESSION ELBOW FITTING
9. COMPRESSION TEE FITTING

NOTES:
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA. CONTRACTOR TO SIZE PVC SUPPLY MANIFOLD TO COMPENSATE FOR FLUSH VALVE FLOWS. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH.

N.T.S

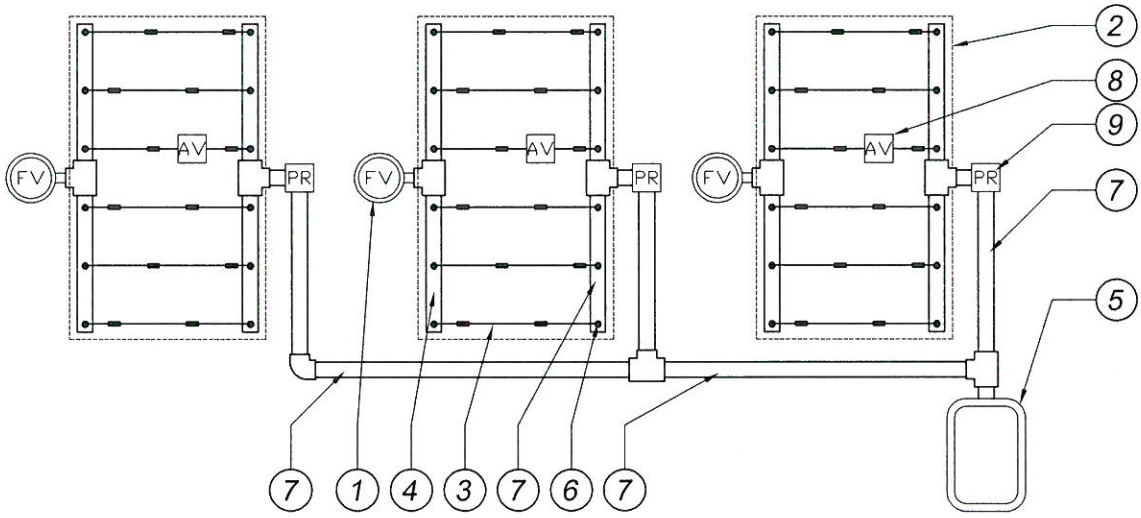
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE FITTINGS

Standard Drawing No. 432



1. AUTOMATIC FLUSH VALVE (PER LEGEND) PLUMBED TO TUBING
2. AREA PERIMETER
3. LANDSCAPE DRIP TUBING (PER LEGEND)
4. PVC FLUSH MANIFOLD
5. REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR (SEE RCV DETAIL)
6. MANIFOLD–TO–ELBOW CONNECTION
7. PVC SUPPLY MANIFOLD
8. AIR/VACUUM RELIEF VALVE (PER LEGEND) PLUMBED TO BLANK TUBING AT EACH HIGH POINT
9. PRESSURE REGULATOR LOCATED AT EACH SUPPLY MANIFOLD

NOTES:
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA. CONTRACTOR TO SIZE PVC SUPPLY MANIFOLD TO COMPENSATE FOR FLUSH VALVE FLOWS.

N.T.S

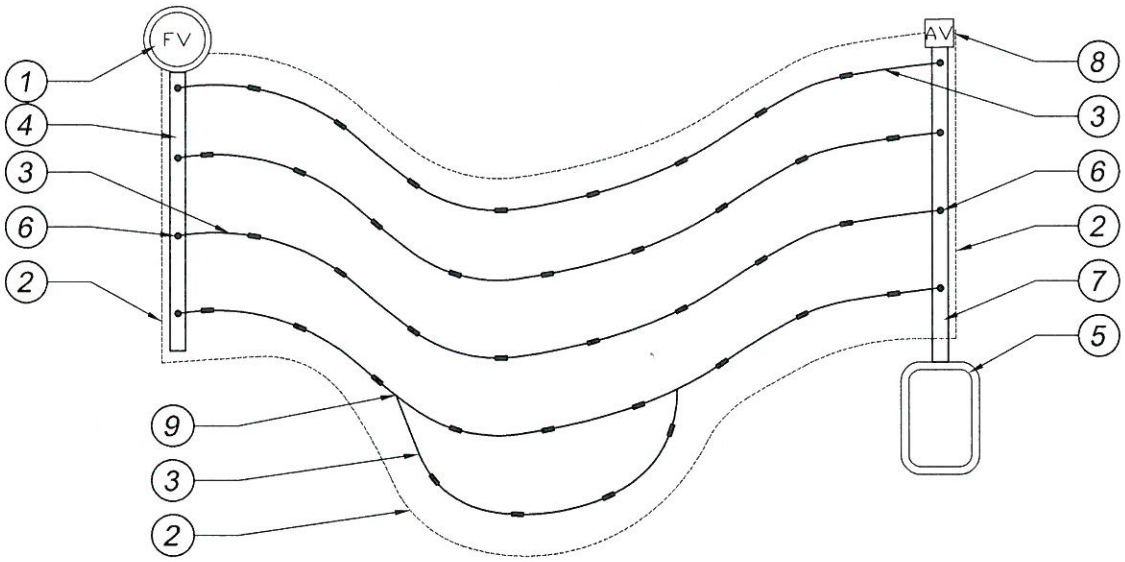
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE ISLAND

Standard Drawing No. 433



1. AUTOMATIC FLUSH VALVE (PER LEGEND) PLUMBED TO TUBING
2. AREA PERIMETER
3. LANDSCAPE DRIP TUBING (PER LEGEND)
4. PVC FLUSH MANIFOLD
5. REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR (SEE RCV DETAIL)
6. MANIFOLD–TO–ELBOW CONNECTION
7. PVC SUPPLY MANIFOLD
8. AIR/VACUUM RELIEF VALVE (PER LEGEND) PLUMBED TO BLANK TUBING AT EACH HIGH POINT
9. COMPRESSION TEE FITTING

NOTES:
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA. CONTRACTOR TO SIZE PVC SUPPLY MANIFOLD TO COMPENSATE FOR FLUSH VALVE FLOWS. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH.

N.T.S

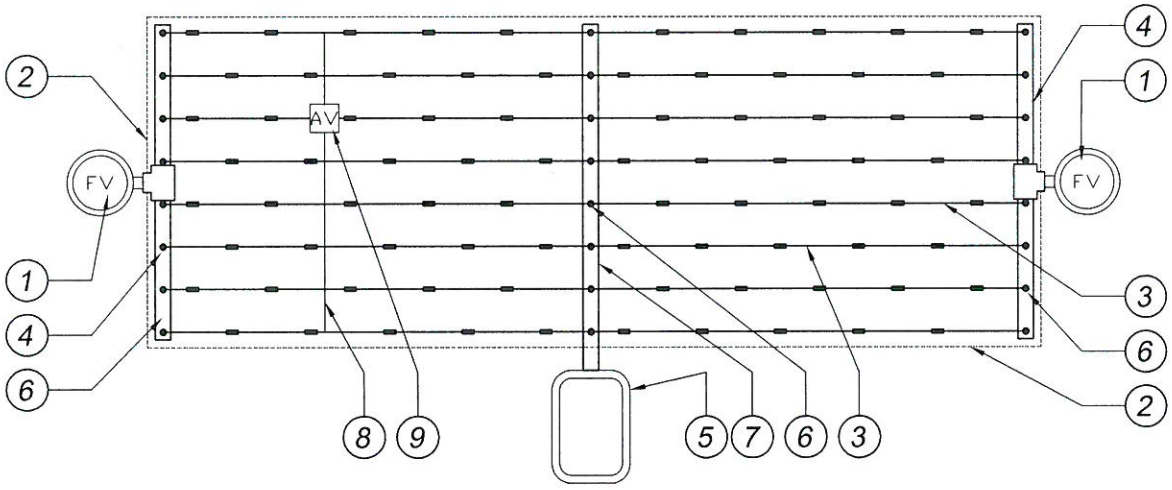
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE ODD CURVES

Standard Drawing No. 434



1. AUTOMATIC FLUSH VALVE (PER LEGEND) PLUMBED TO TUBING
2. AREA PERIMETER
3. LANDSCAPE DRIP TUBING (PER LEGEND)
4. PVC FLUSH MANIFOLD
5. REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR (SEE RCV DETAIL)
6. MANIFOLD–TO–ELBOW CONNECTION
7. PVC SUPPLY MANIFOLD
8. AIR/VACUUM RELIEF VALVE (PER LEGEND) PLUMBED TO BLANK TUBING AT EACH HIGH POINT
9. AIR/RELIEF BLANK TUBING LATERAL ON MOUNDS OR BERMS

NOTES:
ALL PERIMETER LATERALS ARE TO BE 2'' TO 4'' FROM THE EDGE OF PLANTER AREA.

N.T.S

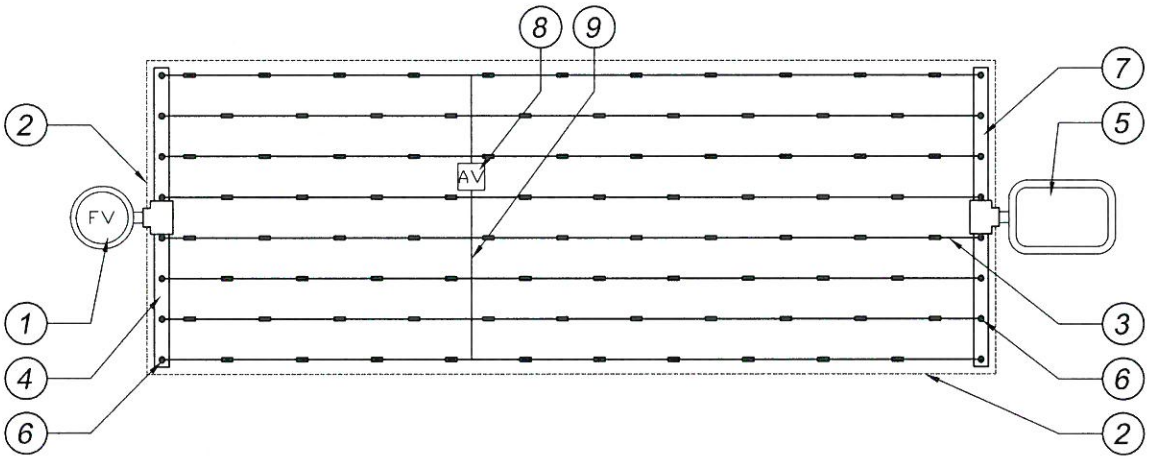
Mark	Revision	By	Date
△			

Approved:
Ernest Wong, Public Works Director/City Engineer
Date: 9-6-16

CITY OF HIGHLAND

DRIPLINE CENTER

Standard Drawing No. 435



1. AUTOMATIC FLUSH VALVE (PER LEGEND) PLUMBED TO TUBING
2. AREA PERIMETER
3. LANDSCAPE DRIP TUBING (PER LEGEND)
4. PVC FLUSH MANIFOLD
5. REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR (SEE RCV DETAIL)
6. MANIFOLD–TO–ELBOW CONNECTION
7. PVC SUPPLY MANIFOLD
8. AIR/VACUUM RELIEF VALVE (PER LEGEND) PLUMBED TO BLANK TUBING AT EACH HIGH POINT
9. AIR/RELIEF BLANK TUBING LATERAL ON MOUNDS OR BERMS

NOTES:
ALL PERIMETER LATERALS ARE TO BE 2'' TO 4'' FROM THE EDGE OF PLANTER AREA.

N.T.S

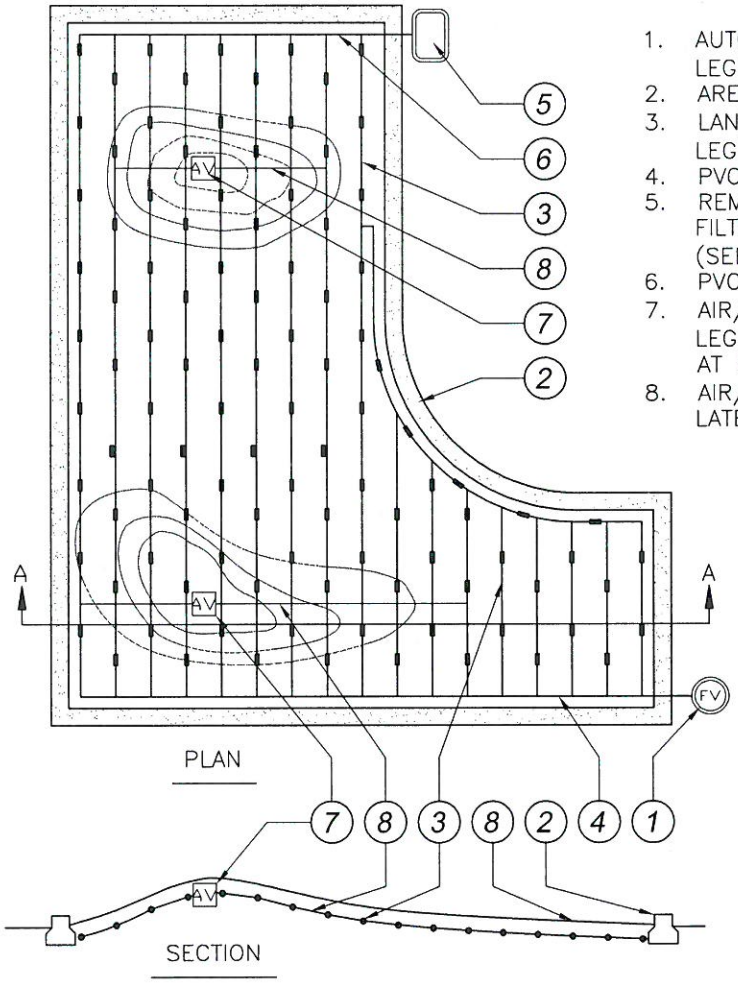
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE END

Standard Drawing No. 436



1. AUTOMATIC FLUSH VALVE (PER LEGEND) PLUMBED TO TUBING
2. AREA PERIMETER
3. LANDSCAPE DRIP TUBING (PER LEGEND)
4. PVC FLUSH MANIFOLD
5. REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR (SEE RCV DETAIL)
6. PVC SUPPLY MANIFOLD
7. AIR/VACUUM RELIEF VALVE (PER LEGEND) PLUMBED TO BLANK TUBING AT EACH HIGH POINT
8. AIR/RELIEF BLANK TUBING LATERAL ON MOUNDS OR BERMS

NOTES:
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA.

N.T.S

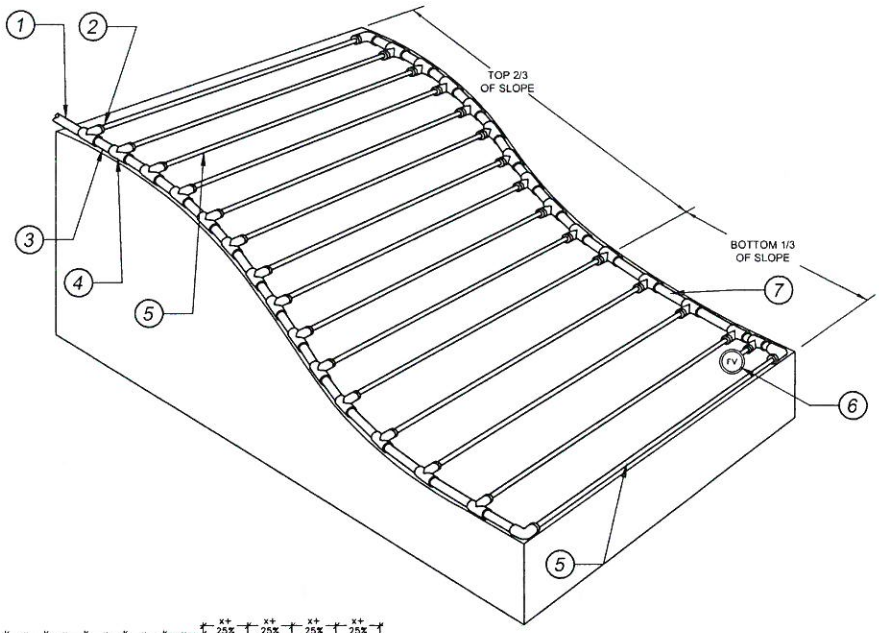
Mark	Revision	By	Date
△			

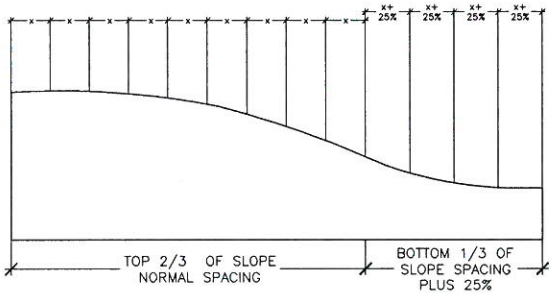
Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE BERM

Standard Drawing No. 437





1. PVC FEED FROM DRIP CONTROL ZONE
2. BARB X MALE FITTING
3. SCH. 40 PVC SUPPLY HEADER
4. SCH. 40 TEE OR EL
5. DRIPLINE PER IRRIGATION LEGEND
6. FLUSH POINT
7. SCH. 40 PVC FLUSH HEADER

X = DISTANCE BETWEEN DRIP LATERALS PER PLAN

XFD Dripline Maximum Lateral Lengths (Feet)						
	12" Spacing		18" Spacing		24" Spacing	
PSI	0.6 GPH	0.9 GPH	0.6 GPH	0.9 GPH	0.6 GPH	0.9 GPH
15	273	155	314	250	424	322
20	318	169	353	294	508	368
30	360	230	413	350	586	414
40	395	255	465	402	652	474

NOTES:
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE PER PLAN. DISTANCE BETWEEN LATERAL ROWS FOR BOTTOM 1/3 OF SLOPE TO BE 1.25X OPTIMAL ROW DISTANCE.
2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM LENGTH SHOWN IN THE ACCOMPANYING TABLE.
3. WHEN ELEVATION CHANGE EXCEEDS 10 FEET IT IS RECOMMENDED THAT A NEW DRIPLINE ZONE BE CREATED.

N.T.S

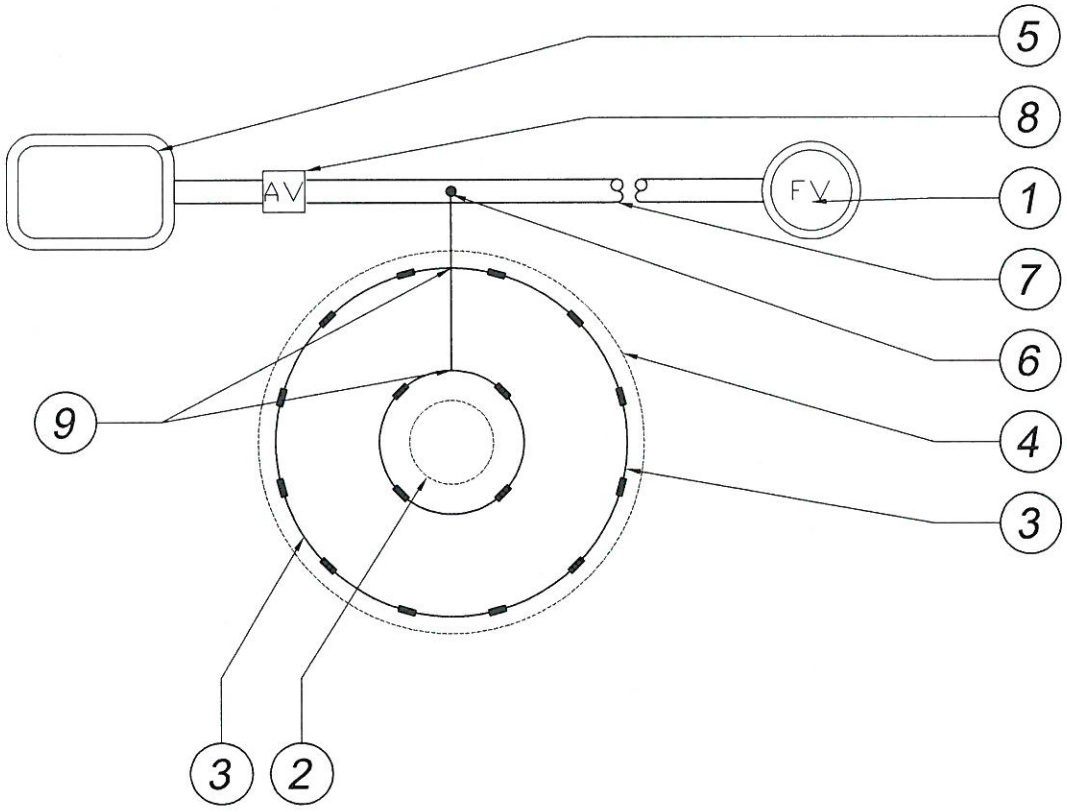
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE SLOPE

Standard Drawing No. 438



1. AUTOMATIC FLUSH VALVE (PER LEGEND) PLUMBED TO TUBING
2. TREE ROOTBALL
3. LANDSCAPE DRIP TUBING (PER LEGEND)
4. ESTIMATED DRIPLINE OF TREE IN 5 YEARS
5. REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR (SEE RCV DETAIL)
6. MANIFOLD–TO–ELBOW CONNECTION
7. PVC SUPPLY MANIFOLD
8. AIR/VACUUM RELIEF VALVE (PER LEGEND) PLUMBED TO BLANK TUBING AT EACH HIGH POINT
9. COMPRESSION FITTING

NOTES:
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA.

N.T.S

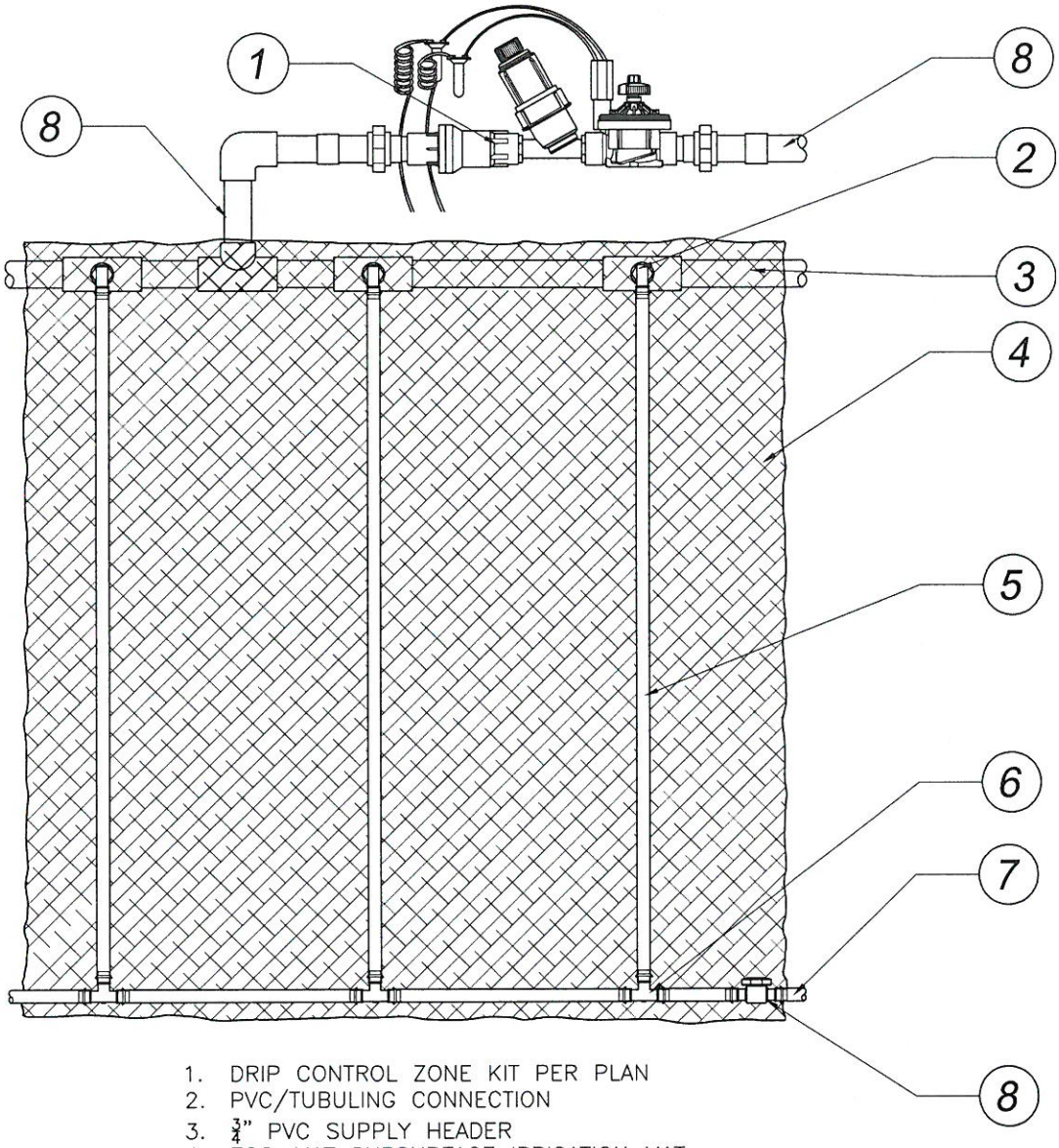
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE
TREES

Standard Drawing No.
439



1. DRIP CONTROL ZONE KIT PER PLAN
2. PVC/TUBULING CONNECTION
3. ¾" PVC SUPPLY HEADER
4. ECO-MAT SUBSURFACE IRRIGATION MAT
5. DRIP LINE TUBING, WRAPPED IN POLYPROPYLENE FLEECE
6. PLD-TEE 17mm BARB x BARB x BARB TEE FITTING
7. 17mm PLD BLANK TUBING DISCHARGE HEADER
8. LATERAL LINE PER PLAN

NOTES:
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA.

N.T.S

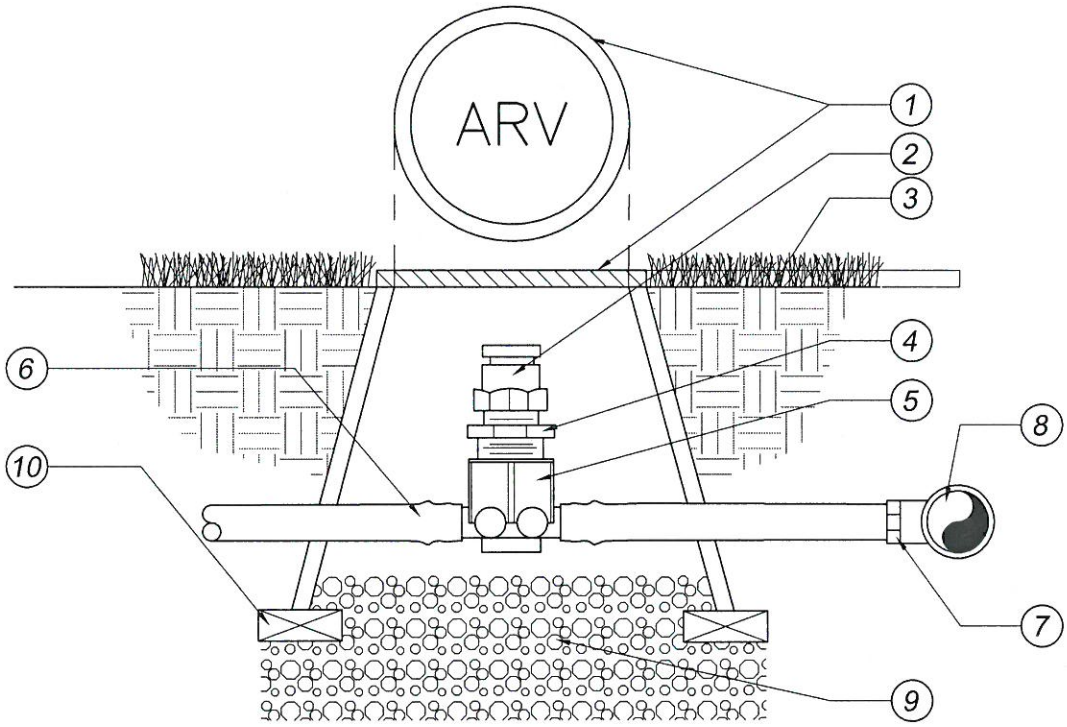
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE
ECO-MAT

Standard Drawing No.
440



1. RAINBIRD SEB–7XB PLASTIC EMITTER BOX
2. AIR RELIEF PER IRRIGATION LEGEND
3. FINISH GRADE
4. ½" X ¾" PVC REDUCER BUSHING
5. BARB X FEMALE THREAD CONNECTOR: RAIN BIRD XFD–TFA FITTING
6. ½" BLANK DRIPLINE TUBING: RAIN BIRD XF SERIES
7. BARB X MALE THREAD CONNECTOR: RAIN BIRD XFD–MA FITTING
8. PVC TEE CONNECTED TO PVC HEADER PIPE
9. 3" MINIMUM DEPTH OF ¾" WASHED GRAVEL
10. COMMON BRICK – 2 REQUIRED

N.T.S

Mark	Revision	By	Date
△			

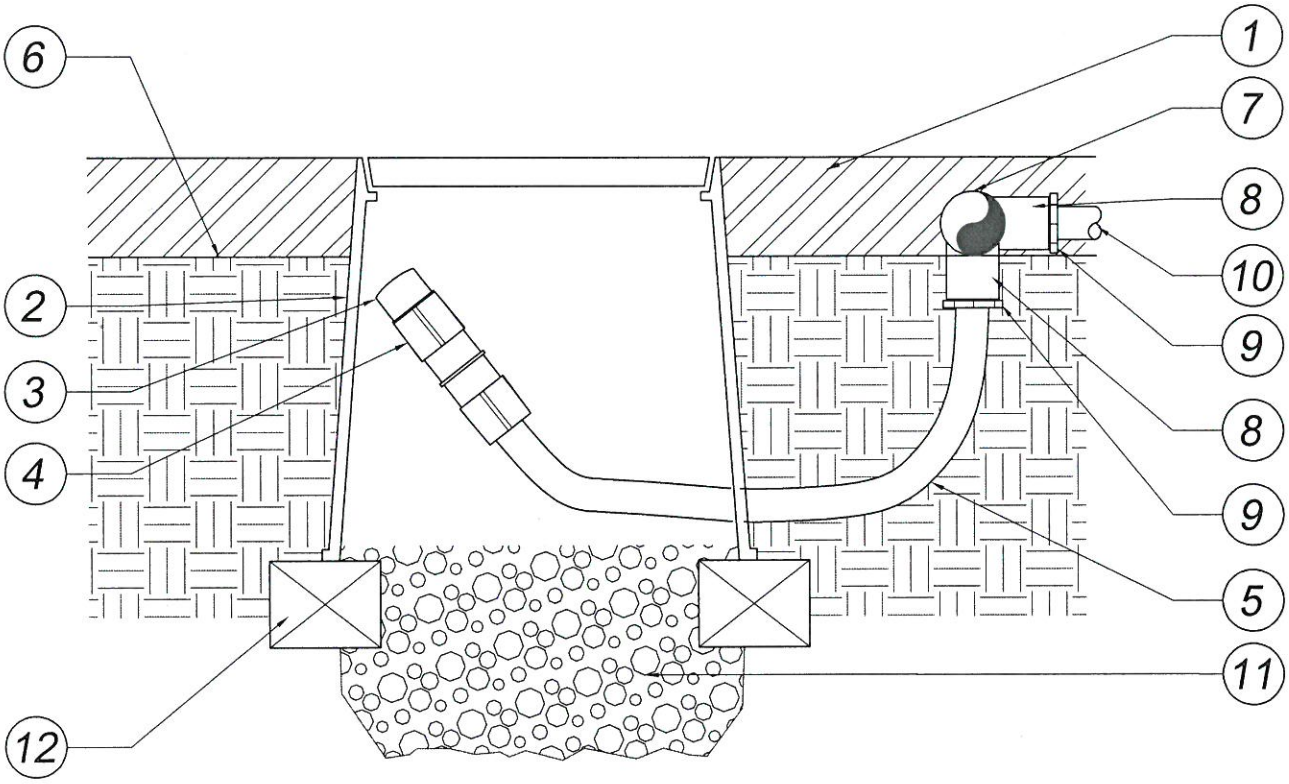
Approved: Ernest Wong Date: 9-6-16

Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE AIR RELIEF VALVE

Standard Drawing No. 441



1. MULCH PER PLAN
2. RAINBIRD SEB 7XB EMITTER BOX
3. FLUSH CAP
4. EASY FIT COUPLING
5. 1/2" BLANK POLYETHYLENE TUBING
6. FINISH GRADE
7. PVC EXHAUST HEADER
8. SCH. 40 PVC TEE OR EL
9. BARB X MALE FITTING
10. DRIPLINE PER IRRIGATION LEGEND
11. 3" MINIMUM DEPTH 3/4" WASHED PEA GRAVEL
12. COMMON BRICK (2 NEEDED)

NOTE:
ALLOW 6" MINIMUM OF DRIPLINE TUBING IN VALVE BOX

N.T.S

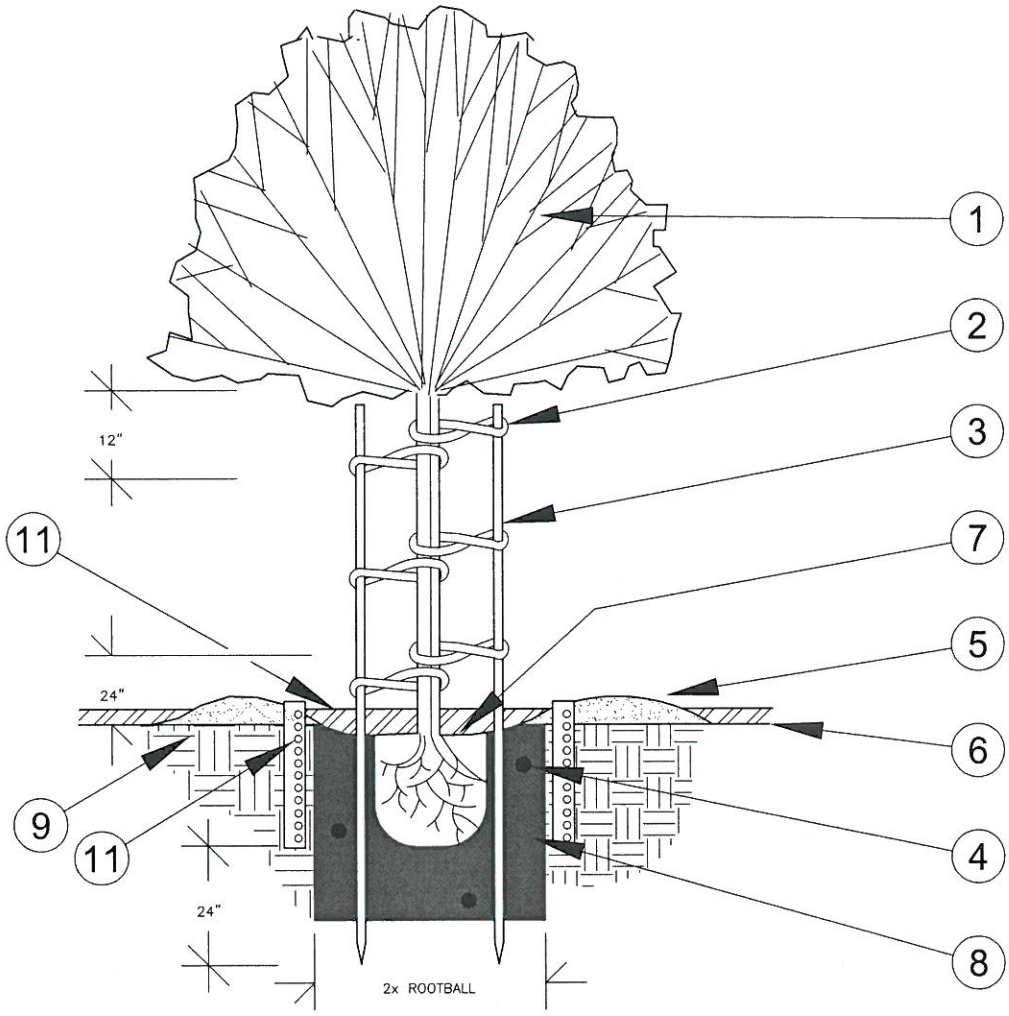
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DRIPLINE
FLUSH VALVE

Standard Drawing No.
442



1. TREE PER PLANTING PLAN
2. CINCH TIE (6 PER TREE)
3. (MINIMUM 2) 3" DIA. x 10' LONG LODGE POLE STAKES,
4. PLANT TABLETS PER PLANTING SPECS / NOTES
5. EARTH WATERING BASIN IN GROUNDCOVER AREAS
6. FINISH GRADE
7. ROOTBALL: SET CROWN 1"–2" ABOVE FINISH GRADE
8. COMPACT BACKFILL MIX PER PLANTING SPECS / NOTES
9. NATIVE SOIL
10. 2" MINIMUM DEEP MULCH PER PLANTING PLAN
11. TREE BREATHER TUBE 4" DIA. PERFERATED ABS, 2' LONG, GRATE COVER SCREW COVER TO PIPE. PROVIDE 2 ON EACH SIDE OF TREE

NOTE: ROOT BARRIER TO BE PLACED WHEN TREE IS WITHIN 6' OF HARDSCAPE

N.T.S

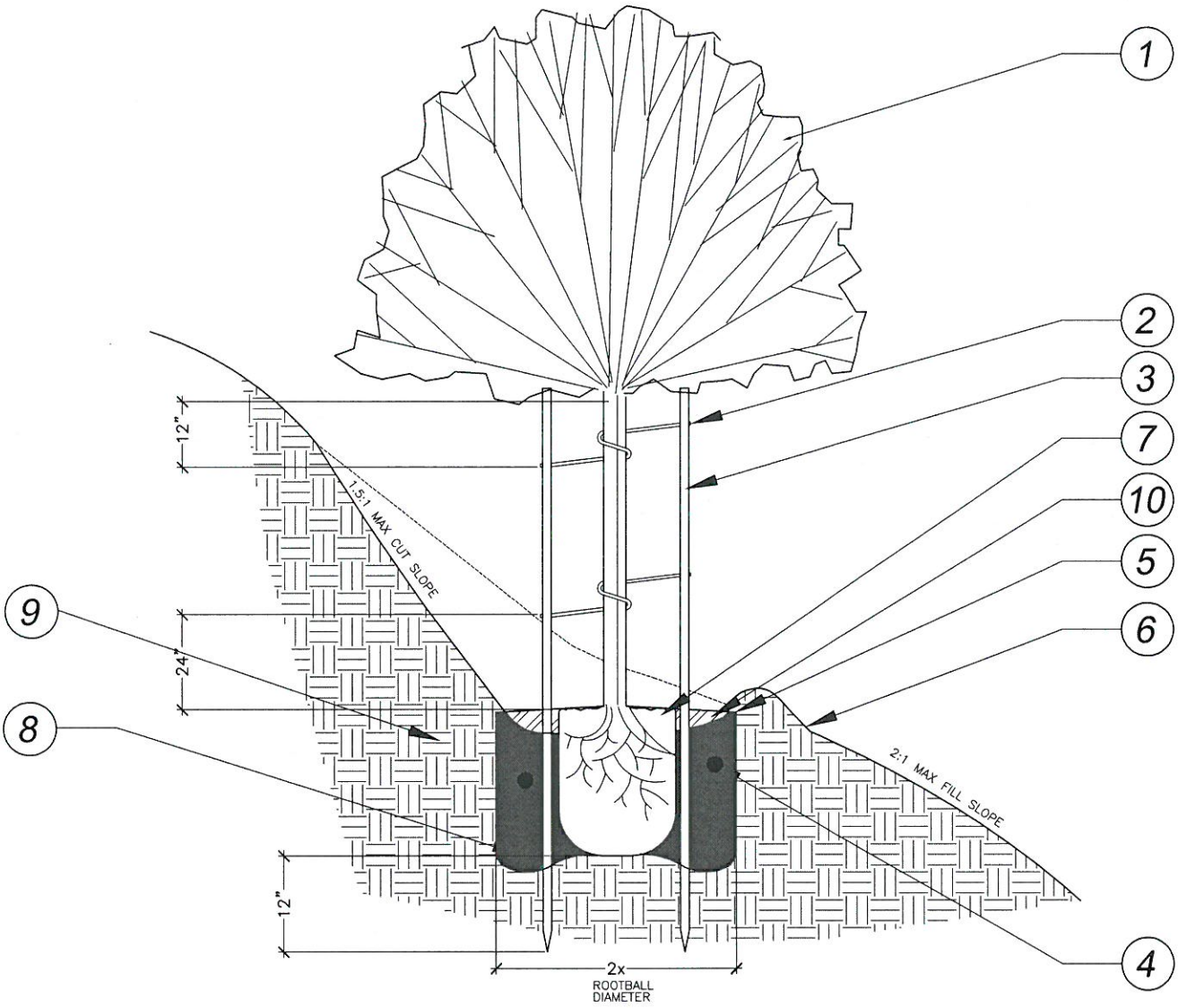
Mark	Revision	By	Date
△			

Approved: Ernie Wong Date: 8-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

TREE PLANTING

Standard Drawing No. 450



1. TREE PER PLANTING PLAN
2. V.I.T. TWIST-BRACE TREE TIES
   15 GAL-24" BOX: MODEL TB24, ATTACH TO STAKE WITH WOOD SCREWS
   24" BOX-36" BOX: MODEL TB36, ATTACH TO STAKE WITH BOLT AND NUT.
   30" BOX-42" BOX: MODEL TB42, ATTACH TO STAKE WITH BOLT AND NUT.
3. 3" DIA. x 10' LONG LODGE POLE STAKES
4. PLANT TABLETS PER PLANTING SPECS/NOTES
5. 'SLOPE GUARD' BY CENTURY PRODUCTS
   (714) 632-7083
6. FINISH GRADE
7. ROOTBALL: SET CROWN 2" ABOVE FINISH GRADE
8. BACKFILL MIX PER PLANTING SPECS/NOTES
9. NATIVE SOIL
10. MULCH - TYPE & DEPTH PER PLANTING PLAN

N.T.S

Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

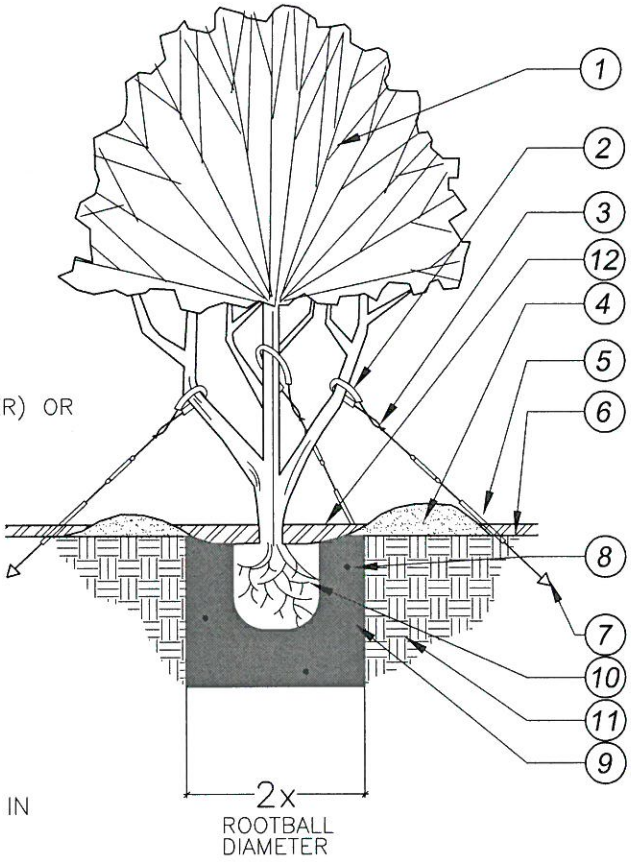
CITY OF HIGHLAND

TREE PLANTING SLOPE

Standard Drawing No. 451

1. SINGLE OR MULTI–TRUNKED TREE PER PLANTING PLAN
2. RUBBER HOSE OVER WIRE AND TRUNK (TYP)
3. GUY WIRE WITH TURN BUCKLE (NO SPLICES)
4. EARTH WATERING BASIN IN GROUNDCOVER AREAS
5. 1/2" SCH 40 PVC PIPE OVER EACH GUY WIRE
6. FINISH GRADE
7. RA–30 RAPID ANCHOR BY 'V.I.T.' (INSTALL PER MANUFACTURER) OR APPROVED EQUAL.
8. PLANT TABLETS PER PLANTING SPECS / NOTES
9. COMPACT BACKFILL MIX PER PLANTING SPECS / NOTES
10. ROOTBALL: SET CROWN 1"–2" ABOVE FINISH GRADE
11. NATIVE SOIL
12. PLANTER AREA MULCH – DEPTH PER PLANTING PLAN

NOTE:
PROVIDE EXPANDABLE TRUNK GUARD IN ALL TURF AREAS



N.T.S

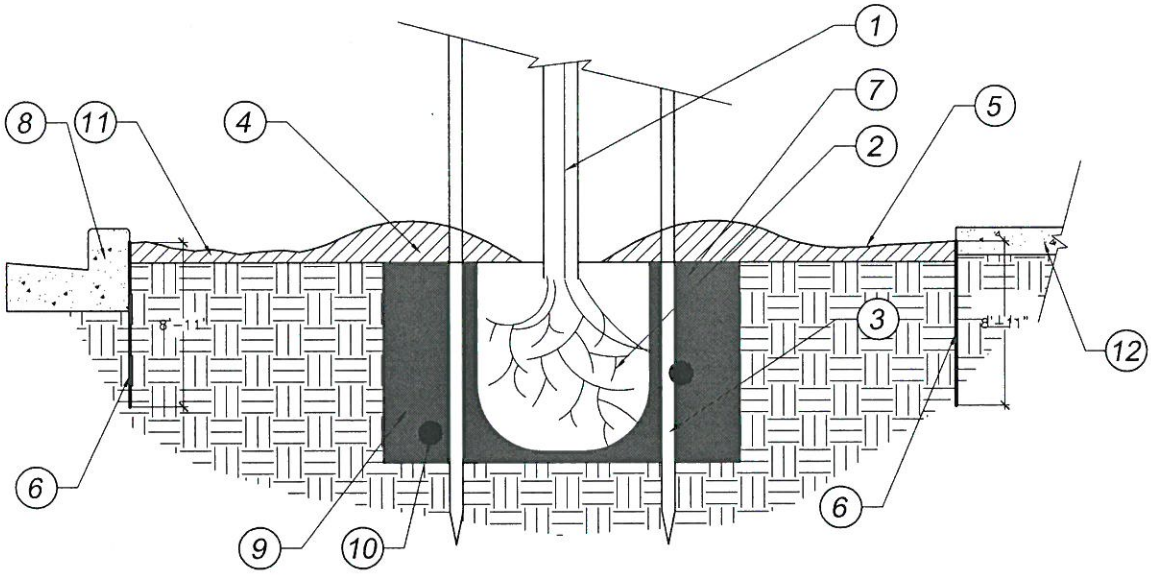
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

TREE GUYING

Standard Drawing No. 452



1. TREE PER PLANTING PLAN
2. ROOTBALL
3. STAKE PER 'TREE PLANTING' DETAIL
4. EARTH WATERING BASIN PER 'TREE PLANTING' DETAIL
5. FINISH GRADE
6. DEEP ROOT BARRIER AT EDGE OF HARDSCAPE – 24" DEEP, 10' LONG CENTERED ON TRUNK
7. TREE PLANTING PIT
8. STREET CURB PER STREET IMPROVEMENT PLANS
9. COMPACTED BACKFILL MIX PER PLANTING SPECS / NOTES
10. PLANT TABLETS PER PLANTING SPECS / NOTES
11. MULCH – TYPE & DEPTH PER PLANTING PLAN
12. CONCRETE PAVING PER PLAN

NOTES:

1. ROOTBARRIER TO EXTEND 6' TO EITHER SIDE OF TREE TRUNK
2. ROOTBARRIER SHALL NOT ENCIRCLE THE TREE ROOTBALL

N.T.S

Mark	Revision	By	Date
△			

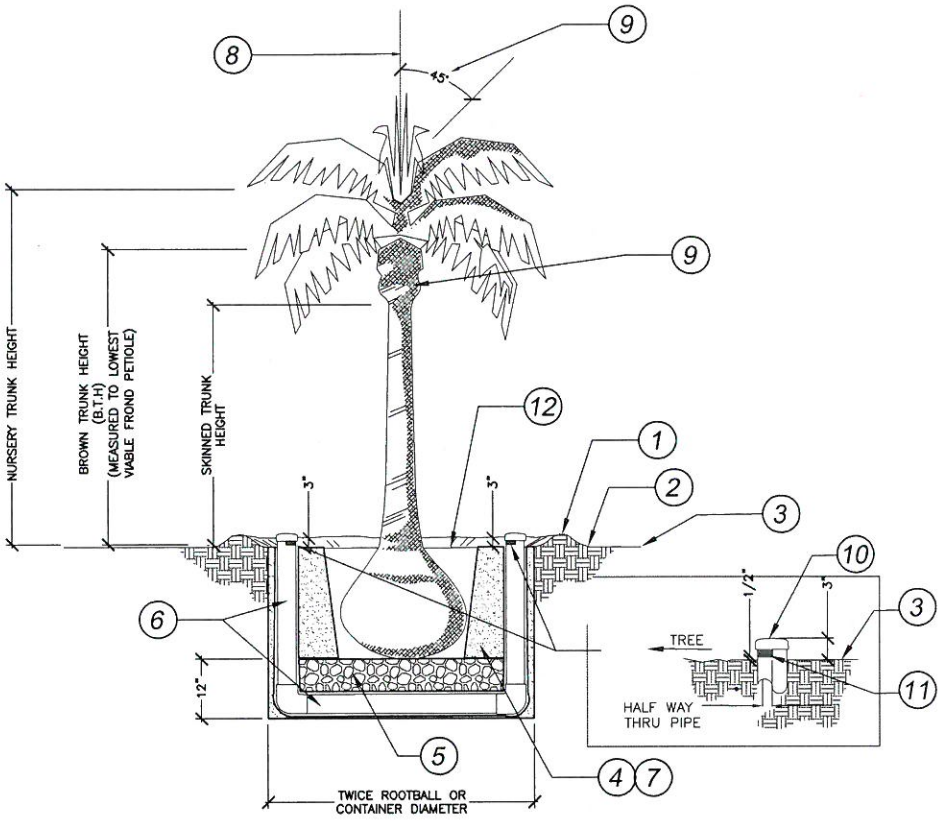
Approved: Ernest Wong Date: 9-6-16

Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

TREE ROOT BARRIER

Standard Drawing No. 453



1. 4" HIGH WATER BASIN.
2. MULCH. REFER TO PLANTING PLAN.
3. FINISH GRADE
4. THOROUGHLY SATURATE SAND WITH WATER UPON COMPLETION OF PLANTING
5. ¾" CRUSHED ROCK OR PEA GRAVEL
6. 4" DIAMETER PVC PERFORATED DRAIN LINE WRAPPED WITH FILTER CLOTH WITH 6"OVERLAP
7. WASHED PLASTER SAND BACKFILL
8. PLANT PALMS SO AXIS IS PLUMB.
9. FRONDS MAY BE REMOVED TO NOT LESS THAN 45% OF VERTICAL AXIS.
10. PVC CAP
11. ½" WIDE SLOT HALF WAY THROUGH PIPE
12. PLANT PALM AT ORIGINAL PLANTED DEPTH OR DEEPER AS DIRECT BY LANDSCAPE ARCHITECT.

PALM PLANTING GUIDELINES

A. THE TOP OF THE ROOTBALL SHALL BE AT FINAL GRADE AND NOT MORE THAN 1FT. BELOW THE ORIGINAL GRADE.
B. INSTALL 4" PERFORATED SCH 40 PIPE WITH ENTIRE LENGTH WRAPPED WITH FILTER CLOTH. PLACE PIPE ADJACENT TO PALM BEFORE BACKFILLING. PIPE MUST EXTEND 5% BELOW THE BOTTOM OF THE ROOTBALL. AFFIX LOOSE FITTING CAP ON UPPER ENDS OF PIPE, SO TAPE CAN BE LOWERED INTO PIPE TO CHECK WATER LEVEL. MONITOR DAILY PRIOR TO APPLICATION OF SUPPLEMENTAL WATER.
C. BACKFILL MIX:
   C.a. BACK FILL PITS WITH WASHED PLASTER SAND UP TO THE LEVEL WHERE THE ROOTBALL WILL BE SET.
   C.b. WATER PIT AS IT IS BEING BACKFILLED USING 6' LONG PIPE STICKER TOPPED WITH 90° ELBOW, PLACED ON END OF MIN. ¾" HOSE, WITH ADEQUATE VOLUME. STICKER SHALL BE WORKED UP AND DOWN, AS THE PIT IS BACKFILLED.
   C.c. APPLY A MIXTURE OF 1 OZ. "BASIC H" BY SHAKLEE AND 2 TBSP. "STEM" BY PETERS. INTO 5 GAL. WATER. POUR IN WHEN BACKFILLING IS ALMOST COMPLETE AND THOROUGHLY SATURATE WITH WATER.
D. WATER PALMS WITH SOAKING OF 100–150 GALLONS WATER PER PALM, EVERY 5 DAYS.
E. AFTER 14th DAY. THEN MONTHLY. FRONDS SHALL BE SPRAYED (FOLIAR DRENCH) WITH THE FOLLOWING, AT THE RECOMMENDED RATES FOR A 100 GALLON TANK MIX:
   E.a. KOCIDE 101 W.P. (¾ LB) OR MAZATE (1 QT./1000 GALLONS)
   E.b. W.R. GRACE'S MINOR–GRO (½ CUP)
   E.c. HYDRATED UREA (5 CUPS OR 2–½ LB.)
   E.d. SPREADER STICKER (8 OZ.) "BASIC H"
   E.e. OPTION: ADD GENERAL INSECTICIDE

N.T.S

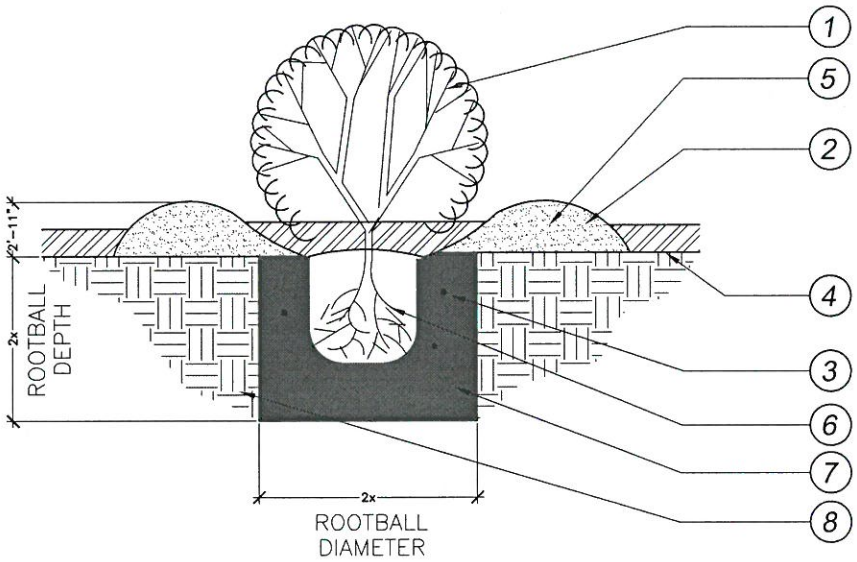
Mark	Revision	By	Date
△			

Approved: Ernest Wong Date: 9-6-16
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

PALM PLANTING

Standard Drawing No. 454



1. SHRUB PER PLANTING PLAN
2. WOOD MULCH– DEPTH PER PLANTING PLAN
3. PLANT TABLETS PER PLANTING SPECS / NOTES
4. FINISH GRADE
5. EARTH WATERING BASIN (RAKE SMOOTH PRIOR TO PLANTING GROUNDCOVER)
6. ROOTBALL: SET CROWN SLIGHTLY ABOVE FINISH GRADE
7. COMPACT BACKFILL MIX PER PLANTING SPECS / NOTES
8. NATIVE SOIL

N.T.S

Mark	Revision	By	Date
△			

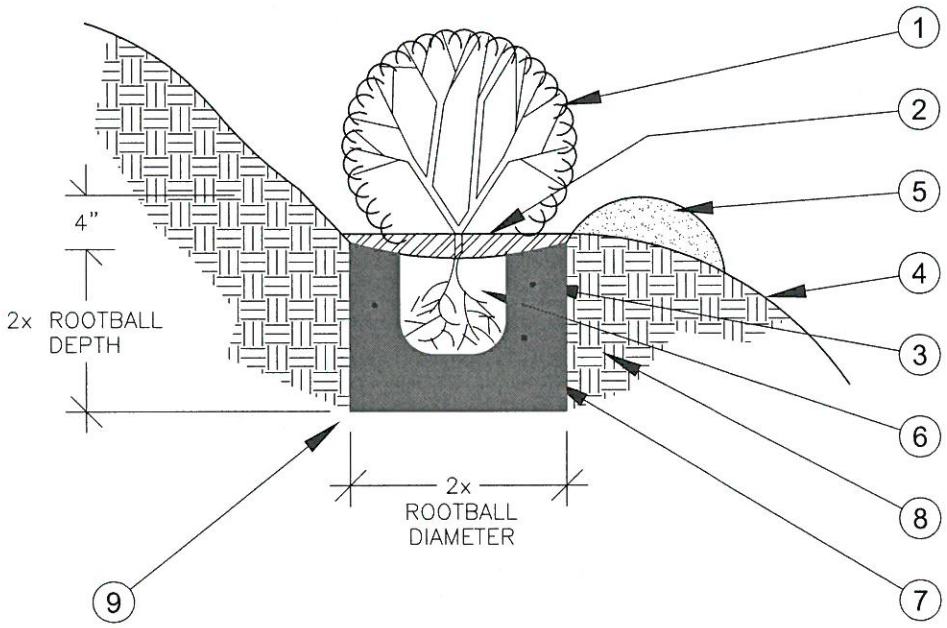
Approved: Ernest Wong Date: 9-6-16

Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

SHRUB PLANTING

Standard Drawing No. 455



1. SHRUB PER PLANTING PLAN
2. MULCH – TYPE & DEPTH PER PLANTING PLAN
3. PLANT TABLETS PER PLANTING SPECIFICATIONS
4. FINISH GRADE
5. EARTH WATERING BASIN
6. ROOTBALL: SET CROWN FLUSH WITH FINISH GRADE
7. COMPACT BACKFILL MIX PER PLANTING SPECIFICATIONS / NOTES
8. NATIVE SOIL
9. CUT PLANTING PIT INTO SLOPE TO CREATE LEVEL BASIN

N.T.S

Mark	Revision	By	Date
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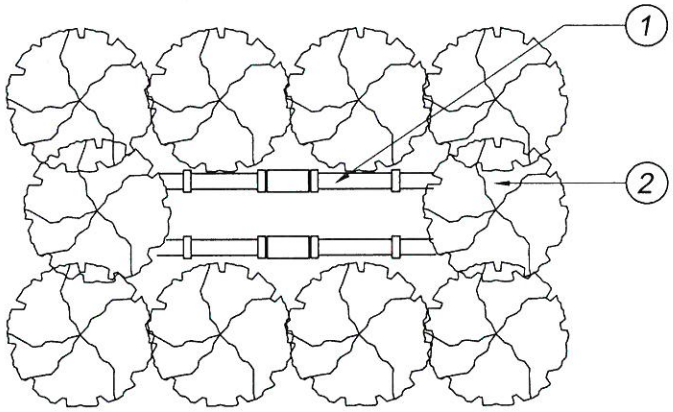
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

SHRUB PLANTING SLOPE

Standard Drawing No. 456



DETAIL NOTES:

1. BACKFLOW PREVENTION DEVICE; REFER TO IRRIGATION PLAN FOR LOCATION
2. MINIMUM 2' TALL SHRUBS. REFER TO PLANTING PLAN FOR TYPE AND SIZE. SHRUBS SHALL VISIBLY SCREEN THE BACKFLOW UNIT FROM VIEW ON ALL FOUR (4) SIDES.

N.T.S

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Ernest Wong, Public Works Director/City Engineer

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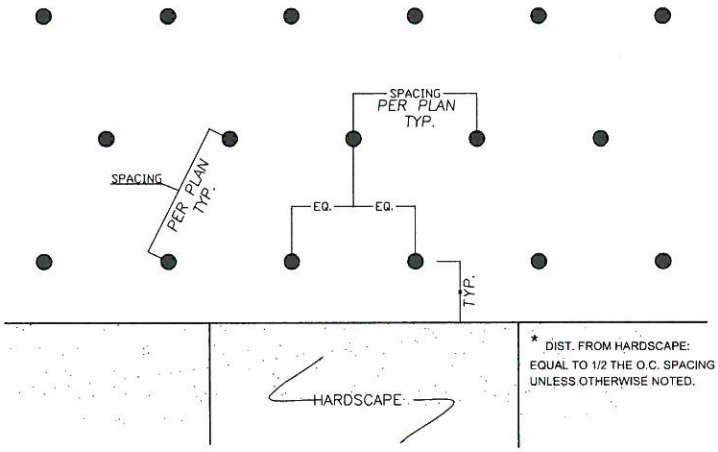
SHRUB PLANTING
BACKFLOW SCREENING

Standard Drawing No. 457



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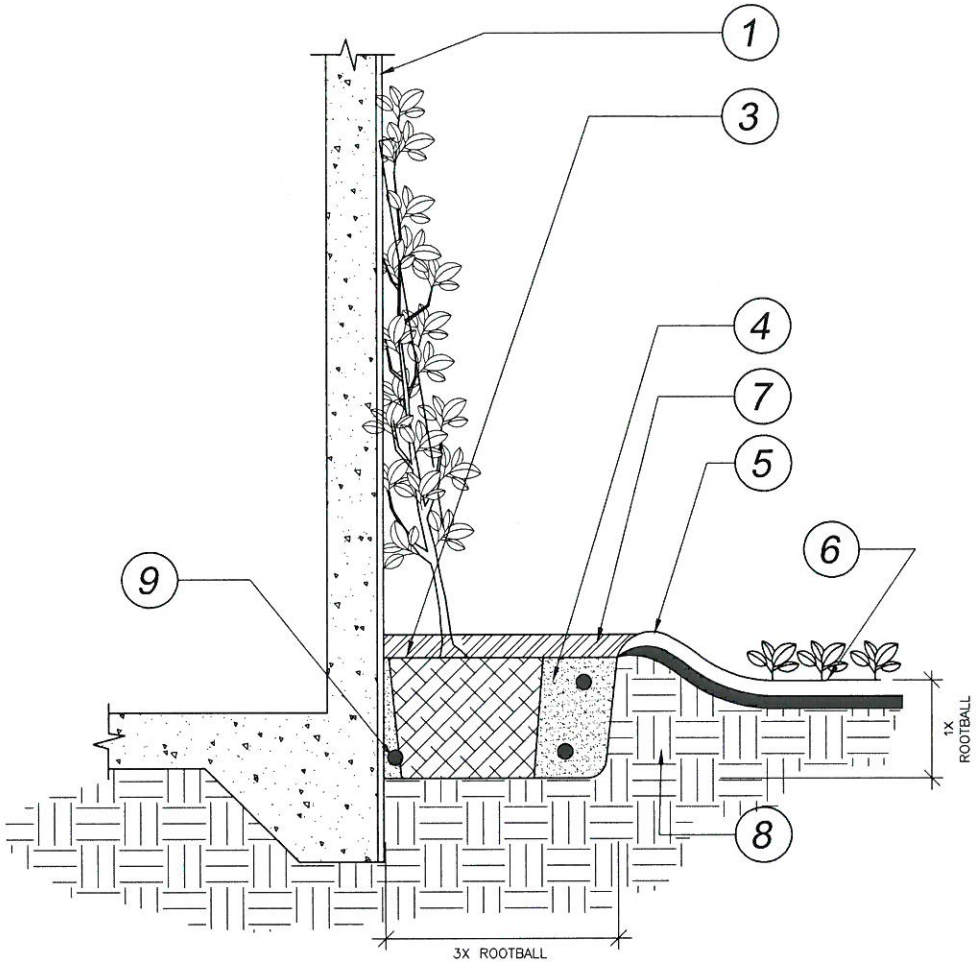
CITY OF HIGHLAND

GROUNDCOVER PLANTING

Standard Drawing No. 458



1. FACE OF WALL OR BUILDING
2. PROP TOP OF STAKE AGAINST WALL OR BUILDING
3. SET ROOTBALL TIGHT TO FOOTING, REMOVE ALL TRASH OR CONCRETE AT PLANTING HOLE
4. BACKFILL PER PLANTING NOTES/SPECS
5. EARTH WATERING BASIN (RAKE SMOOTH PRIOR TO PLANTING GROUNDCOVER)
6. FINISH GRADE PER PLAN
7. WOOD MULCH – DEPTH PER PLANTING PLAN
8. NATIVE SOIL
9. PLANT TABS PER PLANTING NOTES/SPECS

N.T.S

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△			

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Ernest Wong, Public Works Director/City Engineer

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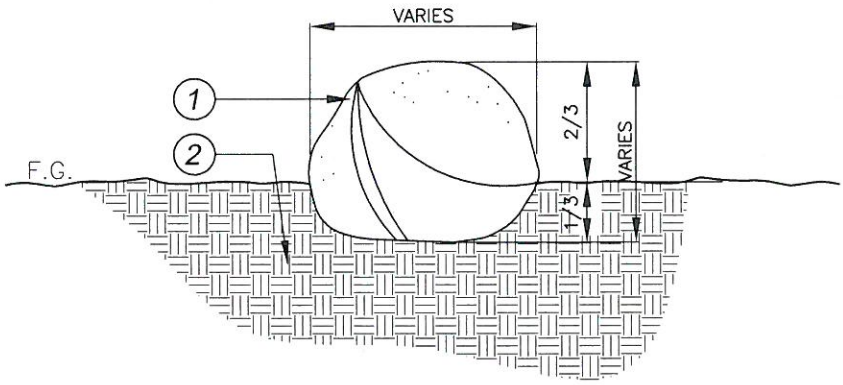
VINE PLANTING

Standard Drawing No. 459



DETAIL NOTES:

1. STONE OR BOULDER. REFER TO PLANS FOR TYPE, SIZE AND SUPPLIERS
2. 90% COMPACTED SUBGRADE

GENERAL NOTES:

BOULDERS SHALL BE PLACED SO AS TO APPEAR "NATURAL." AT NO TIME SHALL ANY BOULDER BE PLACED ON TOP OF SOIL OR D.G. WITHOUT EMBEDDING IN OR COMPACTING THE SURROUNDING SOIL.

N.T.S

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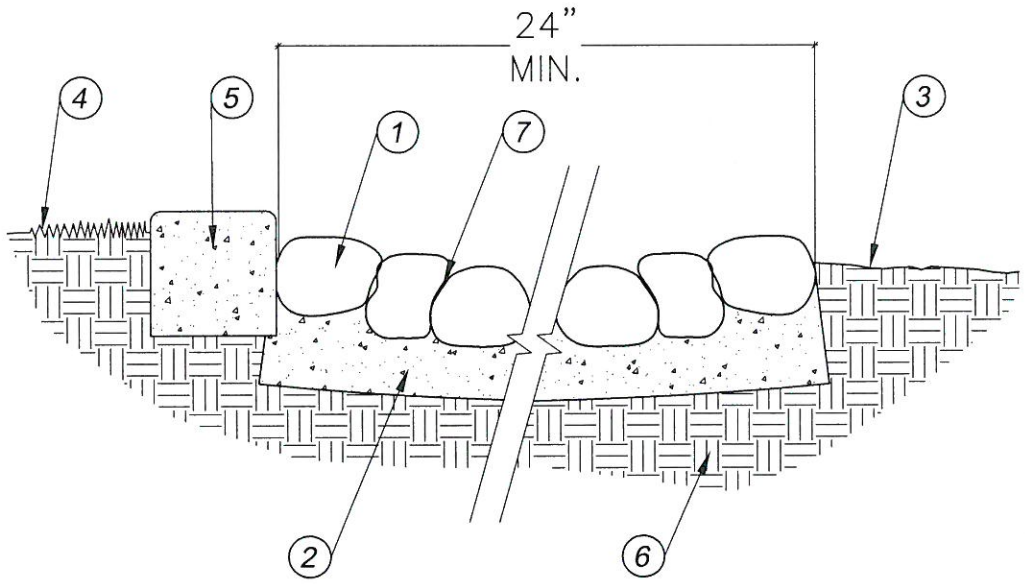
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

BOULDER INSTALLMENT

Standard Drawing No. 460



1. 3"ø–12"ø RIVER ROCK
2. 3" CONCRETE MORTAR BASE
3. FINISH GRADE IN PLANTER AREAS
4. FINISH GRADE IN TURF AREAS
5. CONCRETE MOWCURB AT TURF AREAS ONLY PER DETAIL 'B', SHEET LC–6
6. COMPACTED SUBGRADE PER SOILS REPORT
7. 1/4" – 1/2" MORTAR JOINTS. 3/4" OF COBBLE TO BE IN MORTAR

N.T.S

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△			

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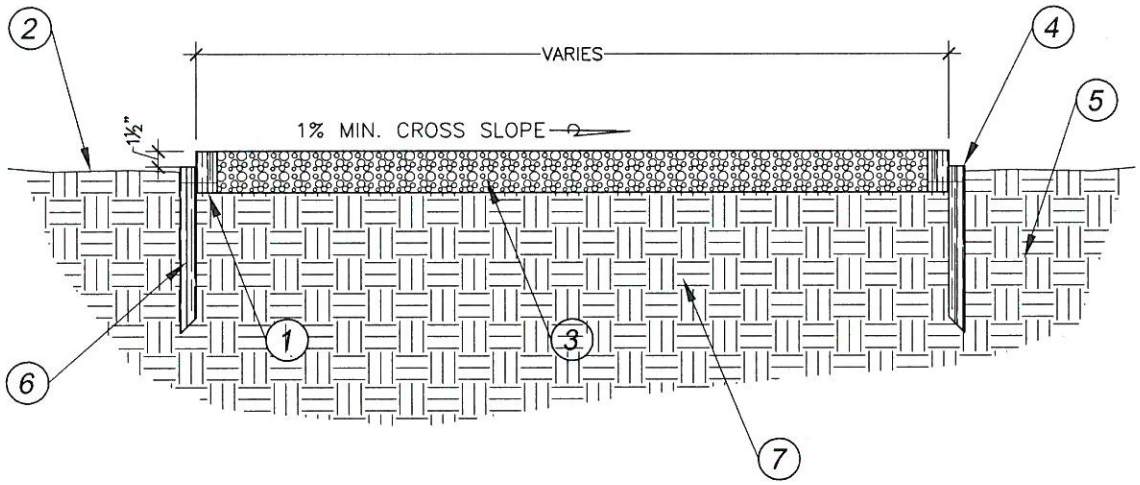
Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

ROCK
COBBLE

Standard Drawing No.
461



1. 2x4 REDWOOD OR RECYCLED BENDABOARD
2. FINISH GRADE (TYP.)
3. 4" MIN. DEPTH 1/8"ø–1/4"ø GRAVEL
4. 45 DEGREE BEVELED EDGE
5. UNDISTURBED NATIVE SOIL
6. 1 1/2" X 18" FLAT STEEL STAKES; TOP OF STAKE SHALL BE 1/1/2" BELOW TOP OF EDGING – POINTED, LOCATE AT ALL SPLICES, CORNERS & AT 5' INTERVALS MAX.
7. 90% COMPACTED SUBGRADE

NOTES:

ALL WOOD TO BE CONSTRUCTION GRADE REDWOOD HEADER STOCK TO BE IN LENGTHS OF 10' MINIMUM. NAIL HEADERS TO STAKES WITH (2) GALVANIZED NAILS USE SPLICE PLATES (1"x4"x24") AT ALL BUTT JOINTS, CENTERED ON THE JOINT & NAILED TO EACH HEADER WITH (4) 10D GALVANIZED NAILS.

N.T.S

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Approved: Ernest Wong Date: 9-6-16

Ernest Wong, Public Works Director/City Engineer

CITY OF HIGHLAND

DECOMPOSED GRANITE (NON-TRAIL)

Standard Drawing No. 462