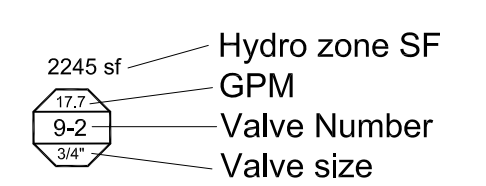


**IRRIGATION GENERAL NOTES**

- All main line piping and control wires under paving shall be installed in separate sleeves. Main line sleeve size shall be a minimum of twice (2x) the diameter of the pipe to be sleeved. Control wire sleeves shall be of sufficient size for the required number of wires under paving.
- All lateral line piping under paving shall be PVC schedule 40 pipe and shall be installed prior to paving.
- Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes shall be permitted, but substitutions of larger sizes may be approved. All damages and rejected pipe shall be removed from the site at the time of said rejection.
- Final location of the automatic controller shall be approved by owner's authorized representative.
- 120 VAC electrical power source at controller location shall be provided by others. The irrigation contractor shall make the final connection from the electrical source to the controller.
- All sprinkler heads shall be set perpendicular to finish grade unless otherwise specified.
- Spacing between on-grade drip line shall conform to those shown on the drawings, unless recommend by manufacture and approved by Landscape Architect prior to installation.
- The irrigation contractor shall flush and adjust all sprinkler heads and valves for optimum coverage with no overspray onto walks, streets, walls, etc.
- This design is diagrammatic. All piping, valves, etc. Shown within paved areas are for design clarification only and shall be installed in planting areas wherever possible. The contractor shall locate all valves in shrub areas.
- It is the responsibility of the irrigation contractor to familiarize himself with all grade differences, location of walls, retaining walls, structures and utilities. The irrigation contractor shall repair or replace all items damaged by his work. He shall coordinate his work with other contractors for the location and installation of pipe sleeves and laterals through walls, under roadways and paving, etc.
- Do not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that unknown obstructions, grade differences or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions or differences should be brought to the attention of the owner's authorized representative. In the event this notification is not performed, the irrigation contractor shall assume full responsibility for any revisions necessary.
- All irrigation equipment not otherwise detailed or specified shall be installed as per manufacturer's recommendations and specifications.
- ADV (anti-drain valves) units as shown in the details are for typical installation only, and may not be required on all heads. Prior to installation the contractor shall verify with the on-site grades. If there is an elevation difference of 24" or more between the highest head and lowest head on a system, the adv's shall be installed per the detail.



**IRRIGATION LEGEND:**

SYMBOL	DESCRIPTION	SIZE	DETAIL	NOTES
[M]	DOMESTIC WATER METER - PER CIVIL PLANS	-	-	
[A]	RAINBIRD ESP-ME3 CONTROLLER. 36 STATION			Installed inside weather-proof enclosure box.
[B]	BACKFLOW PREVENTOR ZURN MODEL ZX500XL			
[⊕]	HUNTER HC-100-FLOW IRRIGATION SUB-METER AND FLOW SENSOR			
[NIBCO]	NIBCO T-585 BRONZE BALL VALVE - DIAGRAMMATIC LOCATION	per mainline		
[RAINBIRD]	RAINBIRD XCZ-100-PRB REMOTE CONTROL VALVE KIT	per plan		
[XFD]	RAINBIRD XFD-06-18 ON-GARDE DRIP LINE WITH 12" EMITTING SPACING.			
[SCH. 40 PVC]	SCH. 40 PVC IRRIGATION MAINLINE	per plan		18" MIN. COVER
[SCH. 40 PVC]	SCH. 40 PVC NON-PRESSURE LATERAL LINE	1"		12" MIN. COVER
[SCH. 40 PVC]	SCH. 40 PVC SLEEVE, TWICE SIZE OF THE LINE			
[X]	DRIP LINE FLUSH POINT			
[ESP-SMT]	ESP-SMT RAIN SENSOR			
[⊙]	POINT OF CONNECTION			
[2"]	SIZE OF PIPE			
[---]	HYDRO ZONE BOUNDARY			
[G]	Quick Coupler Valve			

**HARBOR BLVD**

303 N. LA HABRA WATER EFFICIENT LANDSCAPE WORKSHEET FOR

Reference Evapotranspiration (Eto) = 50.1

Hydrozone # / Planting Description	Plant factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscaping Area (sr. ft.) (A)	ETAF x Area (B)	Estimated Total Water Use (ETWU)
1	0.5	drip	0.81	0.62	1087	670.99	20842.22
2	0.5	drip	0.81	0.62	1373	847.53	26326.00
3	0.5	drip	0.81	0.62	699	431.48	13402.68
4	0.5	drip	0.81	0.62	552	340.74	10584.09
5	0.5	drip	0.81	0.62	1265	780.86	24255.20
				Total	4976	3071.60	95410.19

Special Landscape Areas

	(c)	(d)
Total		
ETWU Total		95410.19

Hydrozone # / Planting Description  
 1) front lawn  
 2) low water use planting  
 3) medium water use planting

Irrigation Method  
 overhead spray or drip  
 Irrigation Efficiency  
 0.75 for spray head  
 0.81 for drip

ETWU (annual Gallon Required) = Eto x 0.62 x ETAF x Area

MAWA (Annual Gallon Allowed) = [Eto] x 0.62 x [(ETAF x LA) + (1 - ETAF) x SLA]

ETAF Calculation

Regulat Landscape Area	(B)	3071.60
Total ETAF x Area	(A)	4976
Total Area	B ÷ A	0.62

All Landscape Area

Total ETAF x Area	(B+D)	3071.60
Total Area	(A+C)	4976
Sitewide ETAF	(B+D) ÷ (A+C)	0.62

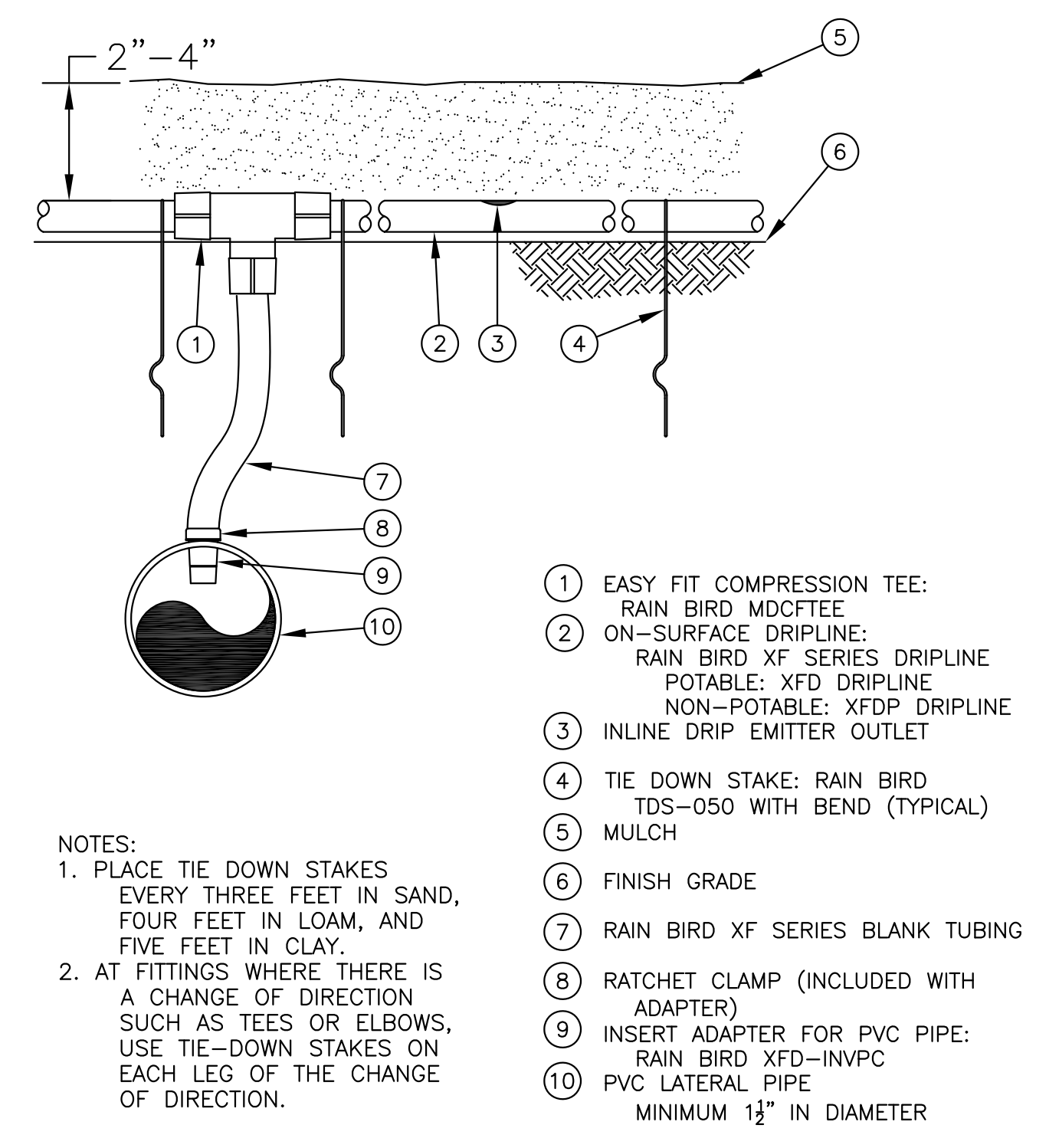
Date	Revision



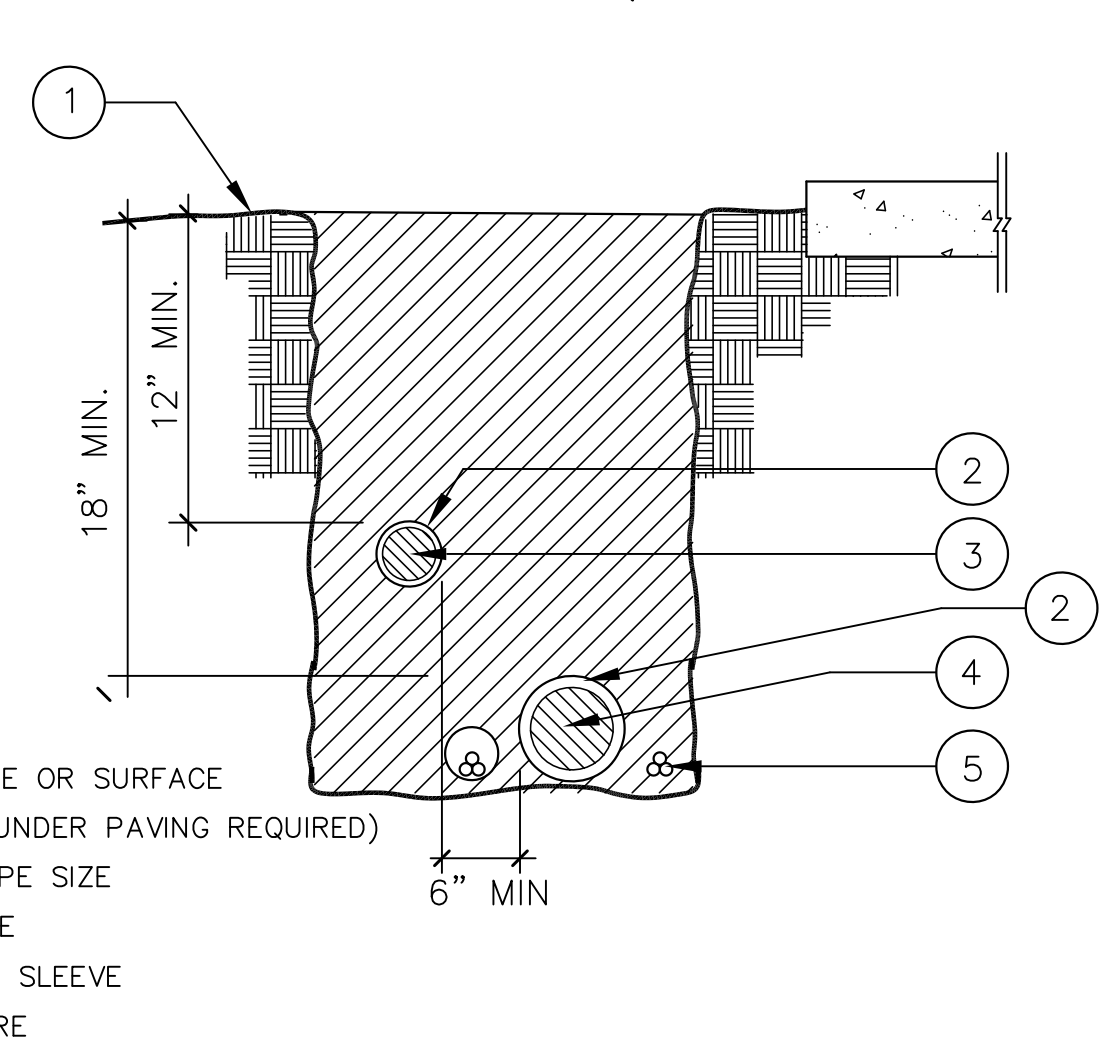
Sheet Title:  
**PLANTING PLAN**

Job No. : 90631-03  
 Scale: 1/16" = 1'-0"  
 Drawn: LCW  
 Checked: LCW

Sheet Number:



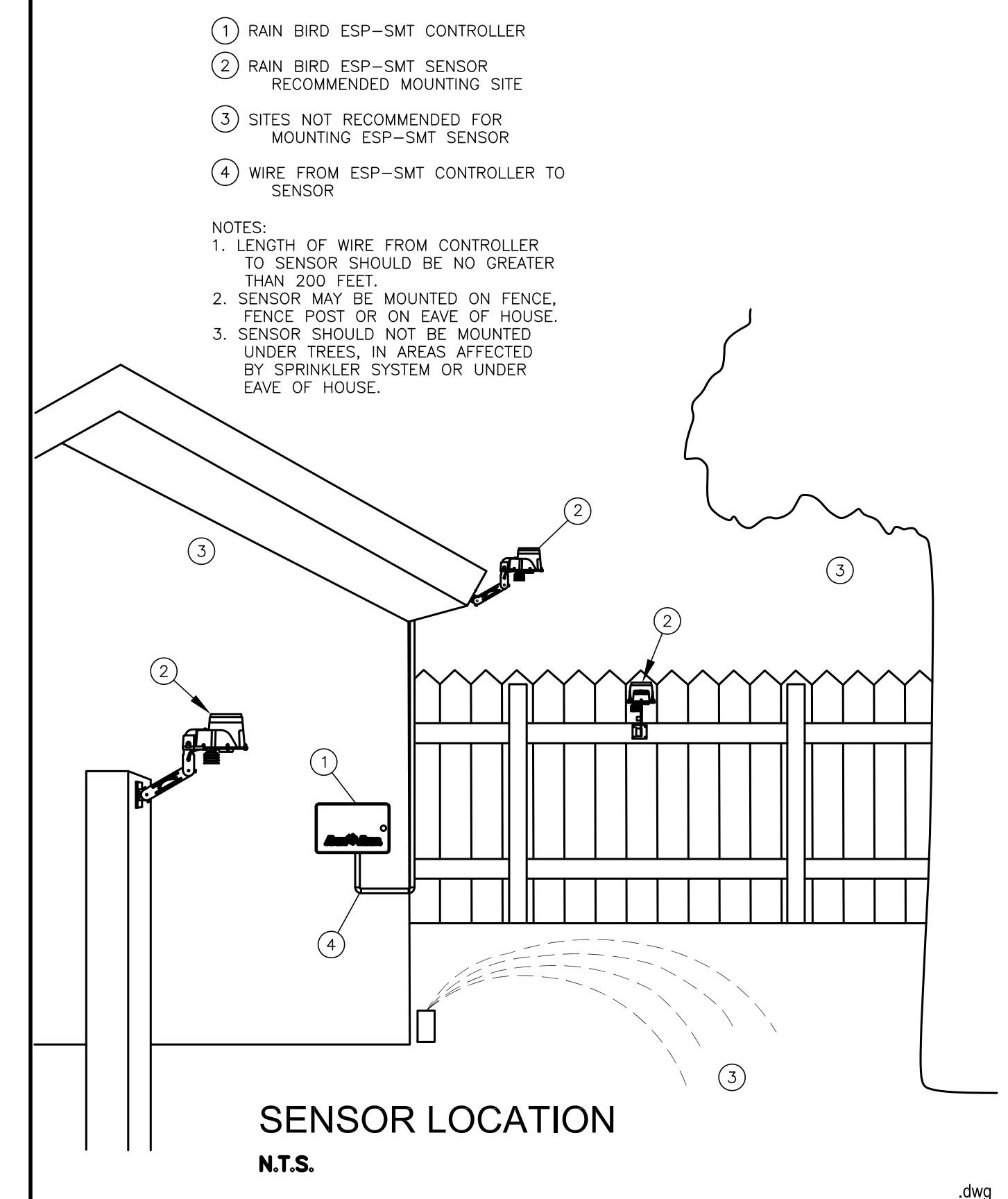
**5 ON SURFACE DRIPLINE**  
Scale: NTS



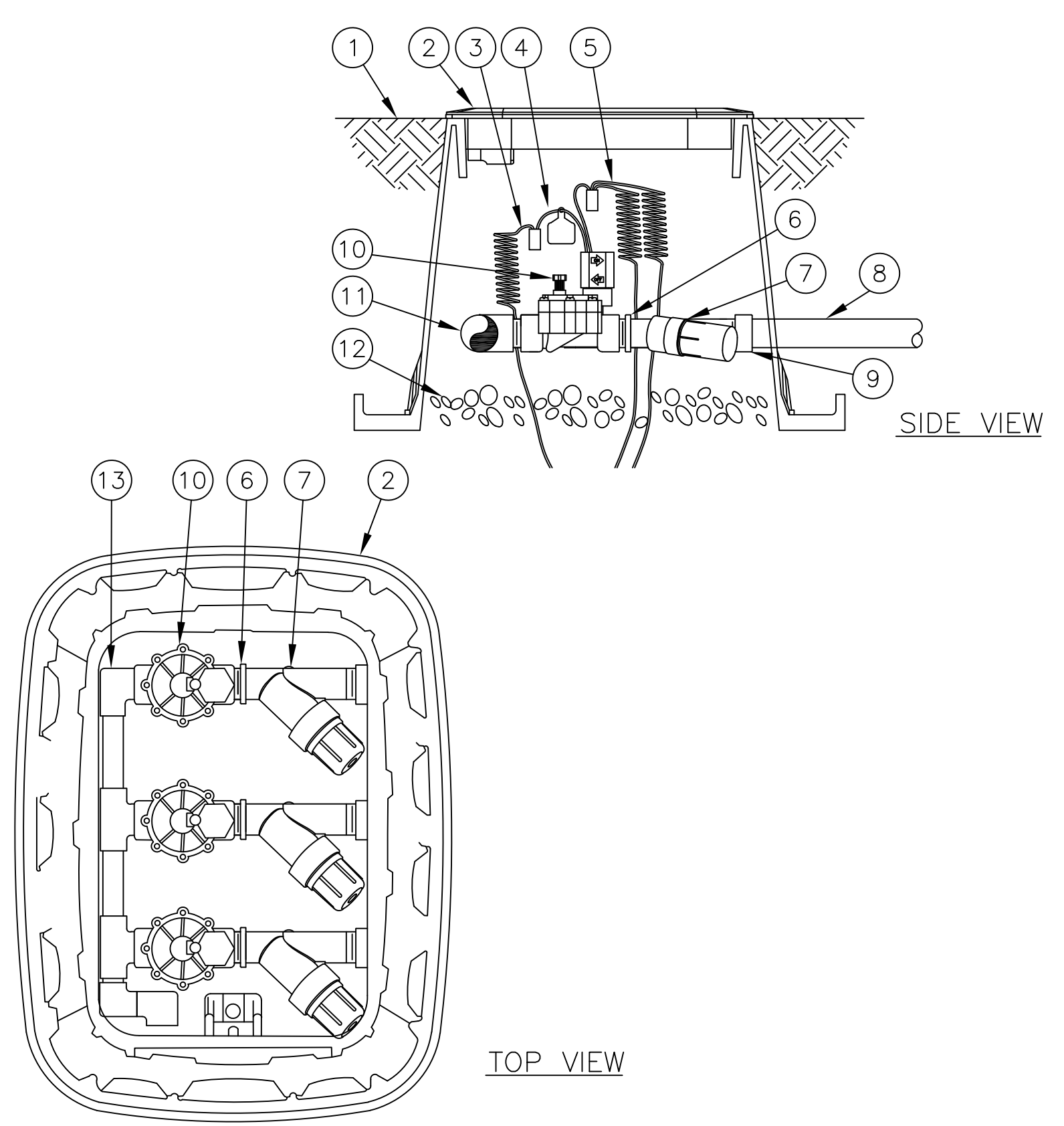
**3 TRENCHING / SLEEVING**  
Scale: NTS

LEGEND  
1. FINISH GRADE OR SURFACE  
2. SLEEVE (IF UNDER PAVING REQUIRED) TWICE OF PIPE SIZE  
3. LATERAL LINE  
4. MAINLINE OR SLEEVE  
5. CONTROL WIRE

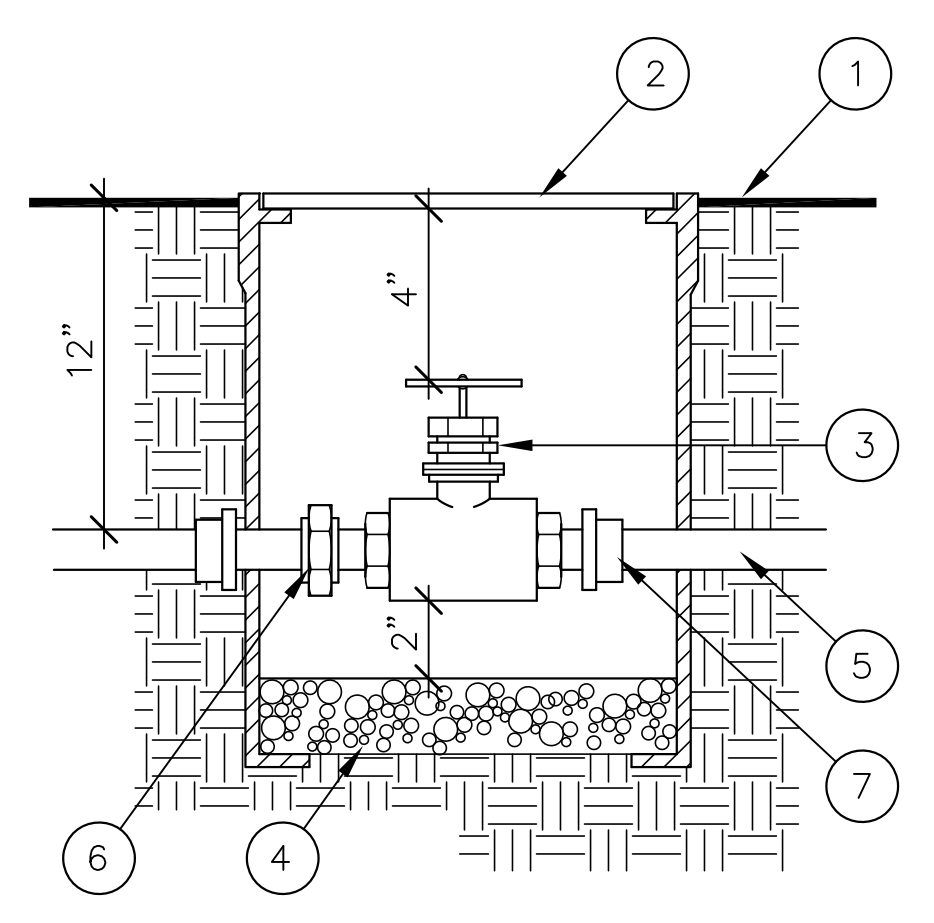
NOTE:  
1. ALL PLASTIC PIPING TO BE SNAKED IN TRENCHES  
2. BUNDLE AND TAPE WIRING AT 10' INTERVALS  
3. TIE A LOOSE 20' LOOP IN WIRING AT CHANGE OF DIRECTION GREATER THAN 30°. UNTIL ALL LOOPS AFTER ALL CONNECTIONS HAVE BEEN MADE  
4. INSTALL ALL CONTROL WIRE ON THE UNDERSIDE OF THE MAIN LINE PIPE  
5. SEE IRRIGATION SPECIFICATIONS FOR BACKFILL AND COMPACTION REQUIREMENTS  
6. PIPE DEPTH FOR 2" DIA. AND LARGER SHALL BE 24"  
7. PIPE DEPTH FOR 2" DIA. AND SMALLER SHALL BE 18"  
8. PIPE DEPTH FOR NON-PRESSURE LATERAL LINES SHALL BE 12"



**1 C-ESP-SMT-SENSORLOCATE.DWG**  
Scale: NTS



**6 X CZ CONTROL ZONE KIT IN SQUARE VALVE BOX**  
Scale: 1/2" = 1'-0"

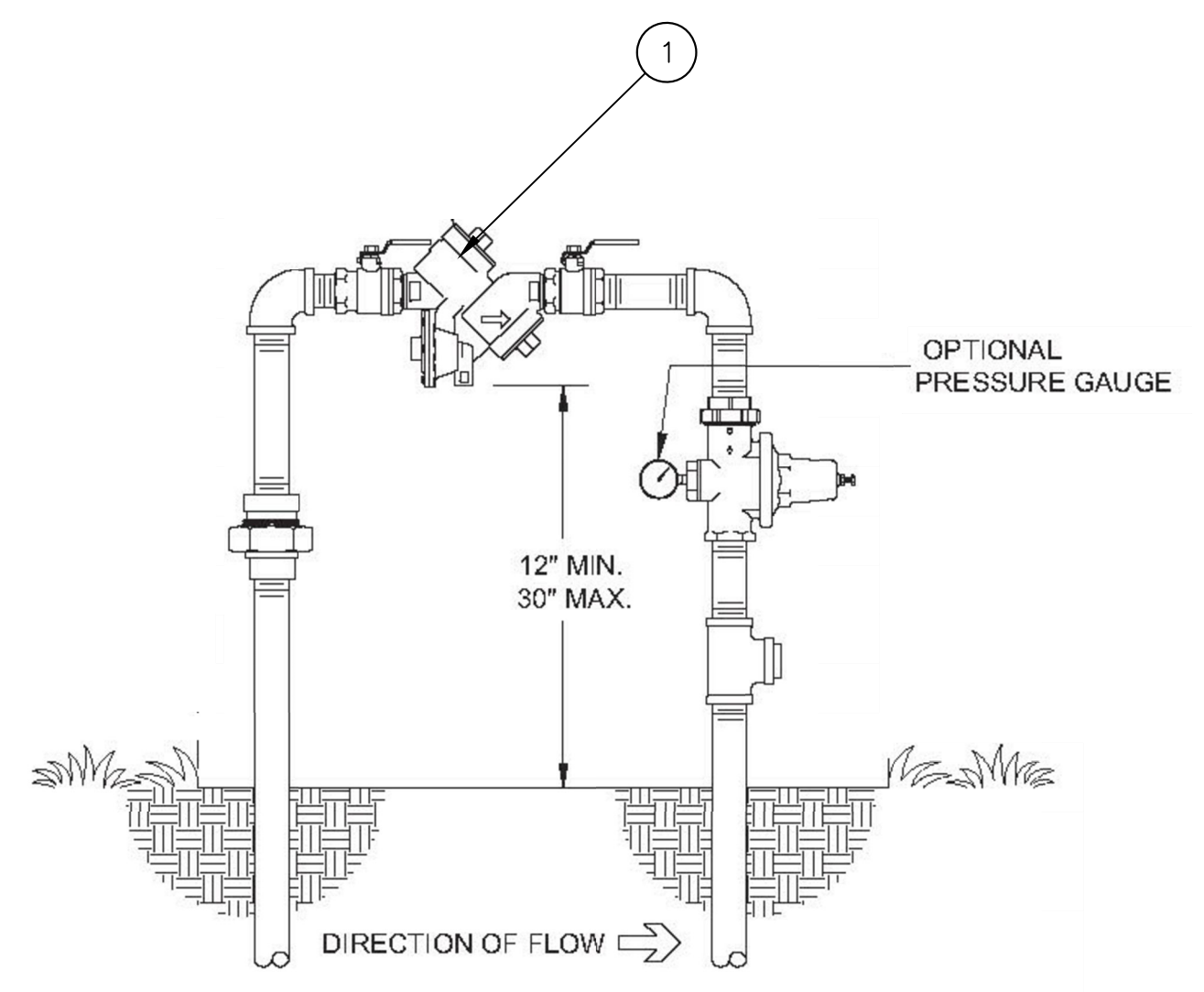


**4 GATE VALVE**  
Scale: NTS

LEGEND  
1. FINISH GRADE  
2. PLASTIC VALVE BOX WITH LOCKING LID MARKED "G.V."  
3. GATE VALVE  
4. ONE CUBIC FT. OF [ ] CRUSHED ROCK  
5. PVC MAIN LINE  
6. BRASS UNION  
7. PVC MALE ADAPTOR (2 REQUIRED)

NOTE:  
1. INSTALL VALVE BOX SUCH THAT THE TOP OF THE COVER IS 2" ABOVE FINISH GRADE IN GROUND COVER AREAS AND FLUSH WITH CONCRETE AND TURF AREAS  
2. ALL GATE VALVES OVER 2" IN SIZE SHALL BE BOX HANDLE GATE VALVES

**4 GATE VALVE**  
Scale: NTS



**2 BACKFLOW PREVENTER UNIT**  
Scale: NTS

LEGEND  
1. BACKFLOW UNIT PER LEGEND

**2 BACKFLOW PREVENTER UNIT**  
Scale: NTS

Date	Revision



Sheet Title:

**IRRIGATION DETAILS**

Job No.: 90631-03  
Scale: see details  
Drawn: LCW  
Checked: LCW

Sheet Number:

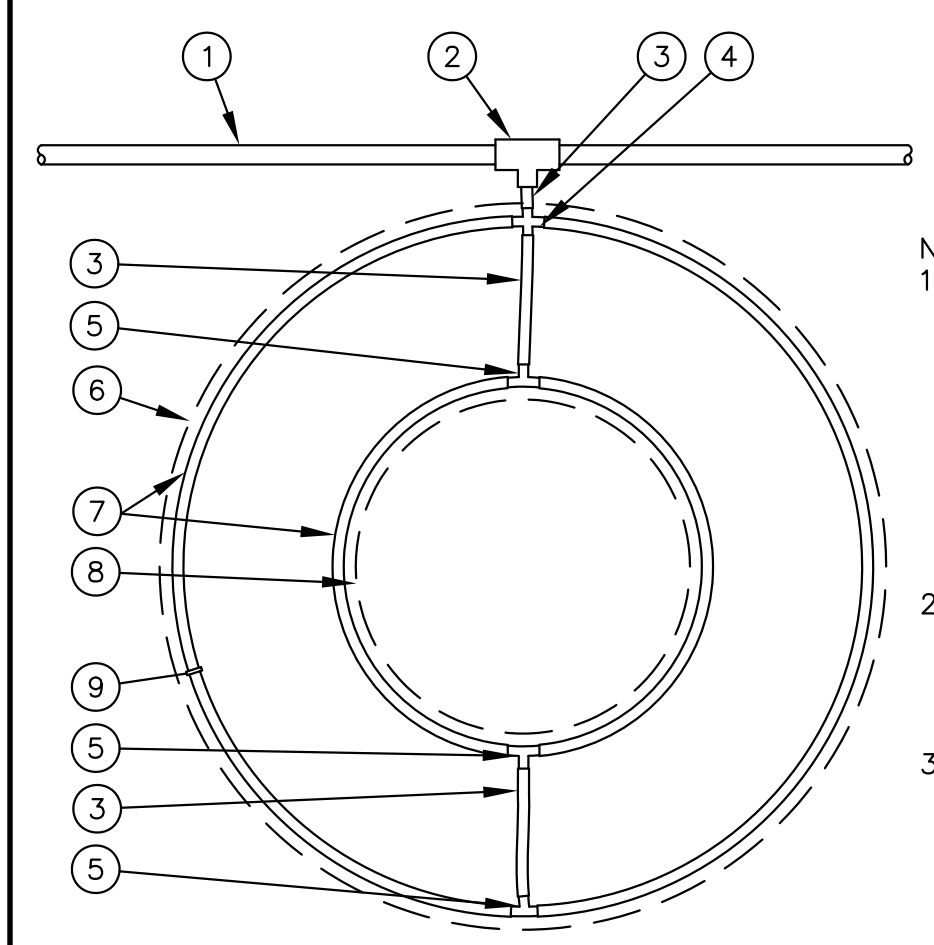
Date	Revision



Sheet Title:  
**IRRIGATION DETAILS**

Job No. : 90631-03  
Scale: see details  
Drawn: LCW  
Checked: LCW

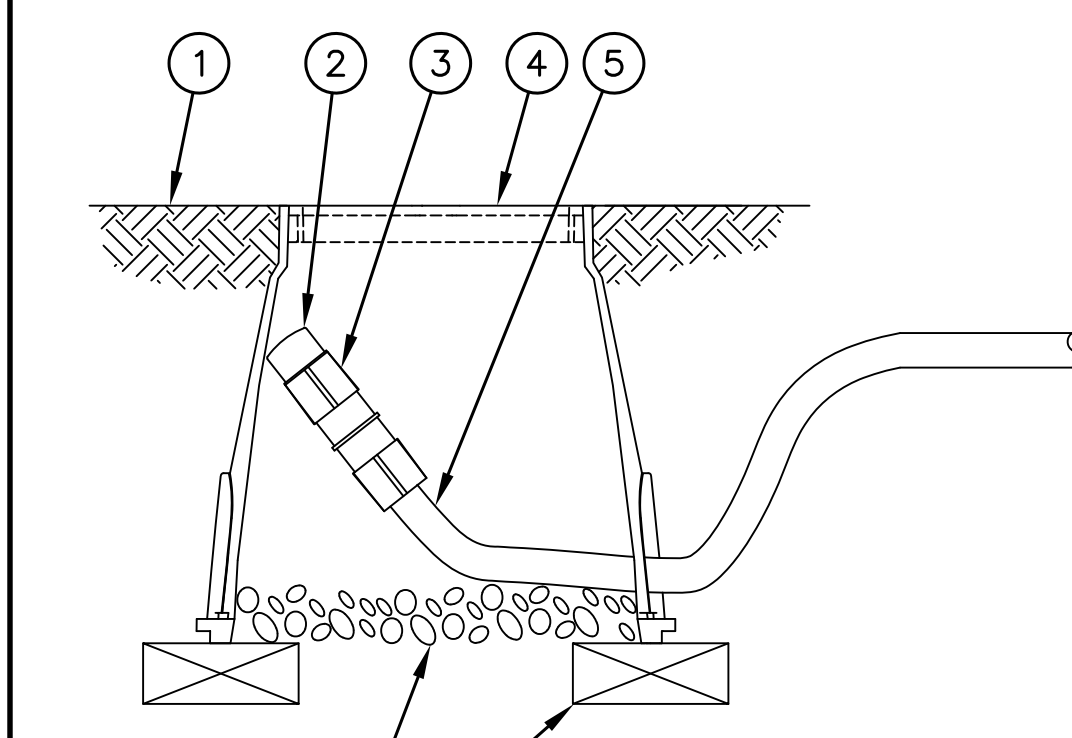
Sheet Number:



- NOTES:
- DISTANCE BETWEEN LATERAL RINGS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, AND TREE CANOPY. SEE INSTALLATION SPECIFICATIONS ON RAIN BIRD WEB SITE (WWW.RAINBIRD.COM) FOR SUGGESTED SPACING.
  - PLACE TIE-DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
  - AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.

- PVC DRIP MANIFOLD PIPE
- PVC SCH 40 TEE OR EL
- RAIN BIRD XF SERIES BLANK TUBING
- BARB CROSS INSERT FITTING: RAIN BIRD XFD-CROSS
- BARB TEE INSERT FITTING: RAIN BIRD XFF-TEE
- PROJECTED CANOPY LINE OF TREE
- ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE  
POTABLE: XFD DRIPLINE  
NON-POTABLE: XFDP DRIPLINE  
PLACE AS SHOWN (LENGTH AS REQUIRED)
- ROOT BALL
- TIE DOWN STAKE: RAIN BIRD TDS-050 WITH BEND (QUANTITY AS REQUIRED, SEE NOTES 2-3 BELOW)

**1 AROUND TREE ON SURFACE DRIPLINE** Scale: NTS

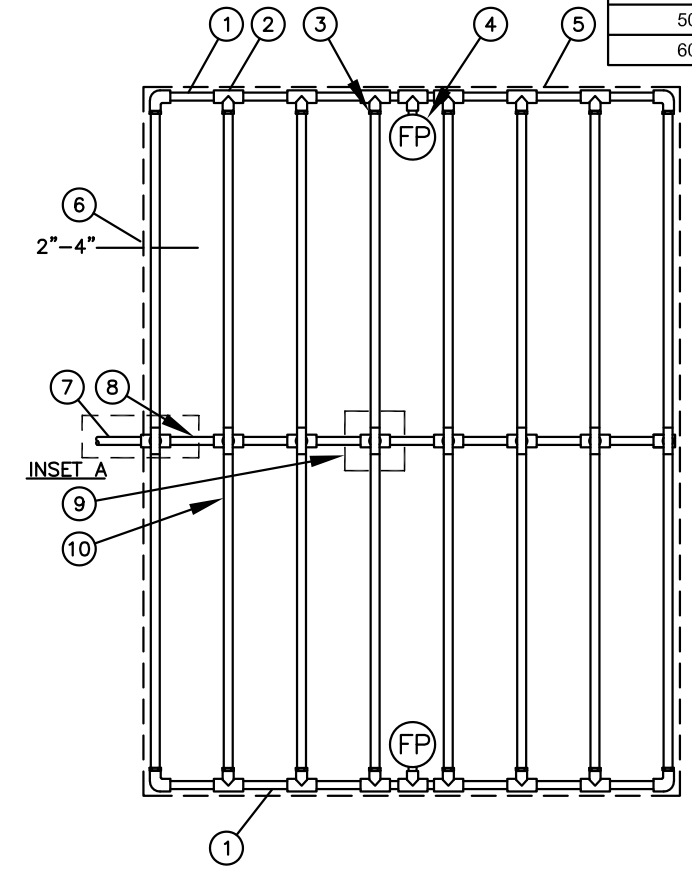


- FINISH GRADE
- FLUSH CAP FOR EASY FIT COMPRESSION FITTINGS: POTABLE: RAIN BIRD MDCFCAP  
NON-POTABLE: RAIN BIRD MDCFCPCAP
- EASY FIT COUPLING: RAIN BIRD MDCFCOUP
- SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
- SUB-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE  
POTABLE: XFS DRIPLINE  
NON-POTABLE: XFSP DRIPLINE
- 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
- BRICK (1 OF 2)

NOTE:  
1. ALLOW A MINIMUM OF 6-INCHES OF DRIPLINE TUBING IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

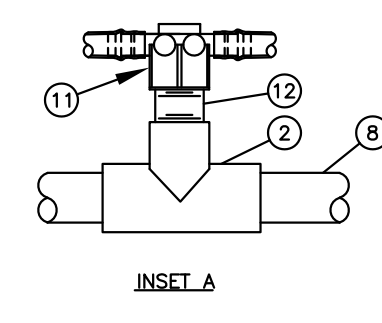
**2 DRIPLINE FLUSH POINT** Scale: NTS

Inlet Pressure psi	12' Spacing		18' Spacing		24' Spacing	
	Nominal Flow (gph)	0.6	0.9	Nominal Flow (gph)	0.6	0.9
15	273	155	314	250	424	322
20	318	169	353	294	508	366
30	360	230	413	350	586	414
40	395	255	465	402	652	474
50	417	285	528	420	720	488
60	460	290	596	455	780	514



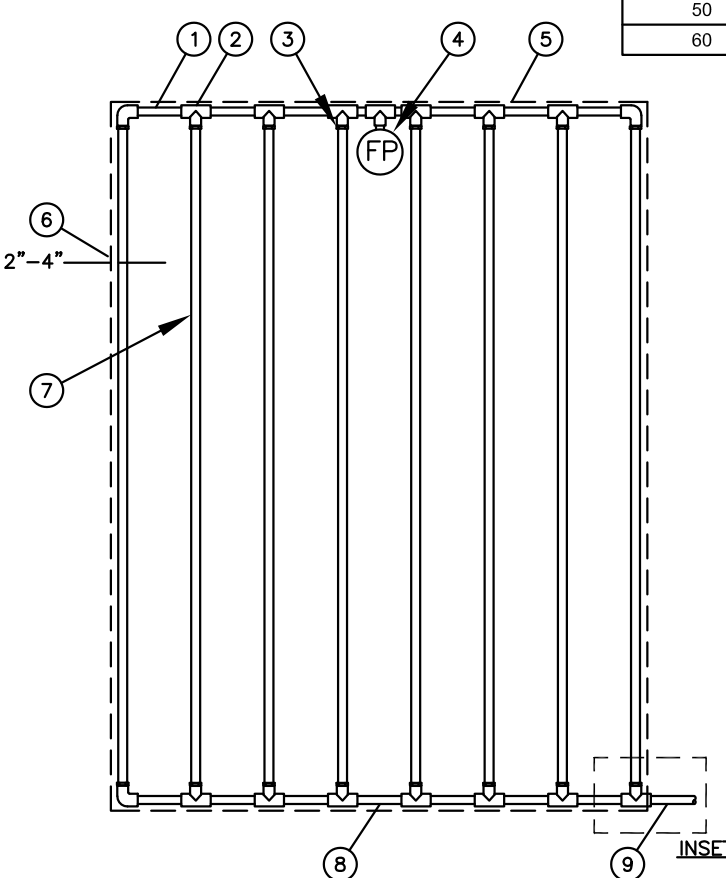
- PVC EXHAUST HEADER
- PVC SCH 40 TEE OR EL (TYPICAL)
- BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
- FLUSH POINT (TYPICAL) SEE RAIN BIRD DETAIL "XFD FLUSH POINT"
- PERIMETER OF AREA
- PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
- PVC SUPPLY PIPE FROM RAIN BIRD CONTROL ZONE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- PVC SUPPLY MANIFOLD
- CONNECTION FROM SUPPLY MANIFOLD TO DRIPLINE (TYPICAL) - SEE INSET A
- ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE (TYPICAL)  
POTABLE: XFD DRIPLINE  
NON-POTABLE: XFDP DRIPLINE
- BARB X FEMALE FITTING: RAIN BIRD XFD-TFA-075 FITTING
- 1/4" PVC NIPPLE, LENGTH AS NECESSARY

NOTES:  
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE INSTALLATION SPECIFICATIONS ON RAIN BIRD WEB SITE (WWW.RAINBIRD.COM) FOR SUGGESTED SPACING.  
2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM SPACING SHOWN IN THE ACCOMPANYING TABLE.  
3. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.



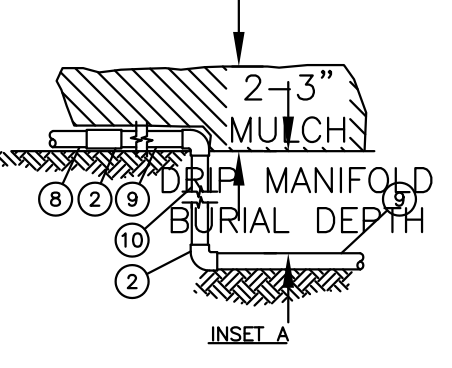
**3 CENTER FEE LAYOUT ON SURFACE DRIPLINE** Scale: NTS

Inlet Pressure psi	12' Spacing		18' Spacing		24' Spacing	
	Nominal Flow (gph)	0.6	0.9	Nominal Flow (gph)	0.6	0.9
15	273	155	314	250	424	322
20	318	169	353	294	508	366
30	360	230	413	350	586	414
40	395	255	465	402	652	474
50	417	285	528	420	720	488
60	460	290	596	455	780	514



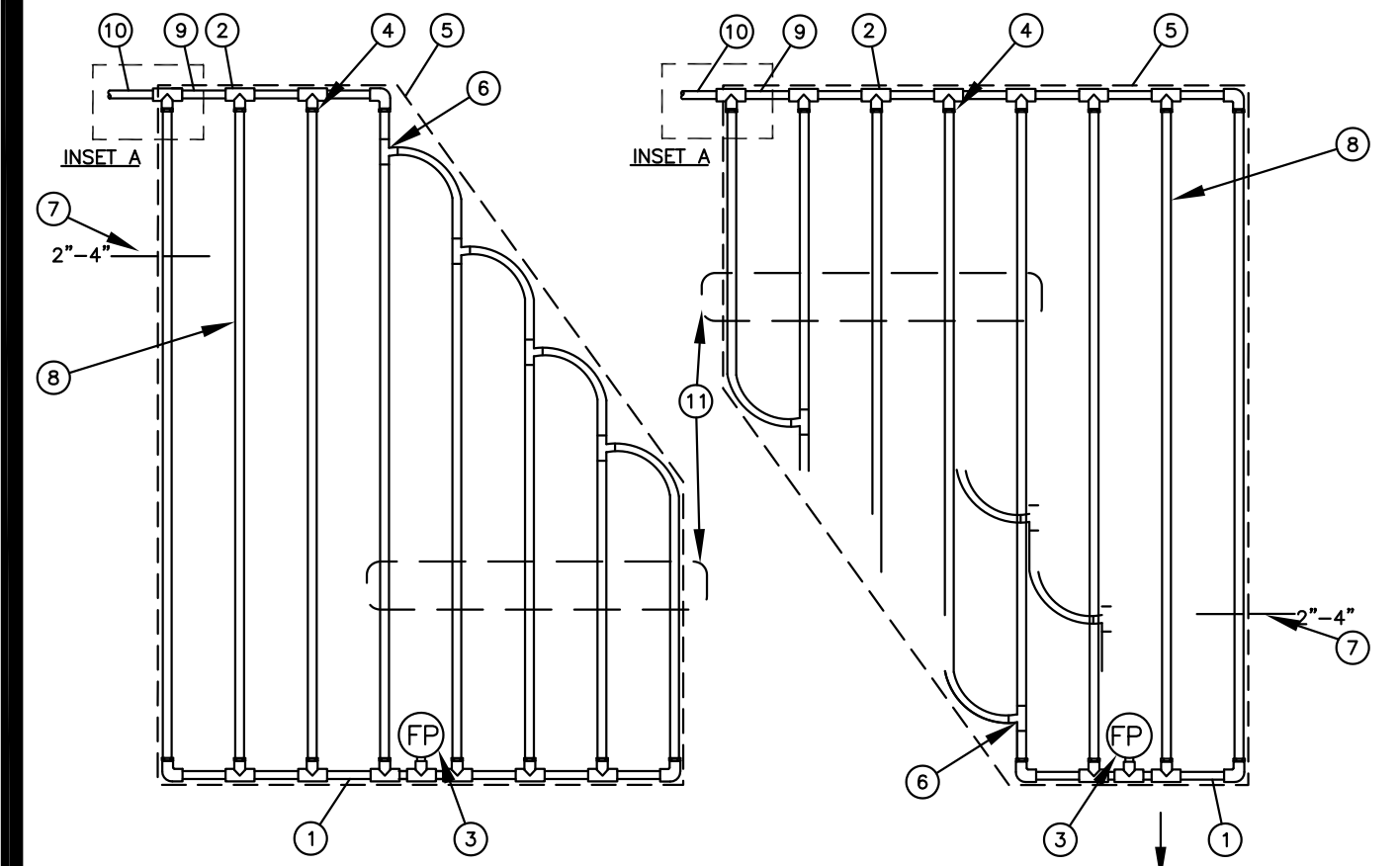
- PVC EXHAUST HEADER
- PVC SCH 40 TEE OR EL (TYPICAL)
- BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
- FLUSH POINT (TYPICAL) SEE RAIN BIRD DETAIL "XFD FLUSH POINT"
- PERIMETER OF AREA
- PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
- ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE (TYPICAL)  
POTABLE: XFD DRIPLINE  
NON-POTABLE: XFDP DRIPLINE
- PVC SUPPLY HEADER
- PVC DRIP MANIFOLD FROM RAIN BIRD CONTROL ZONE VALVE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- PVC SCH 40 RISER PIPE

NOTES:  
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE INSTALLATION SPECIFICATIONS ON RAIN BIRD WEB SITE (WWW.RAINBIRD.COM) FOR SUGGESTED SPACING.  
2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM SPACING SHOWN IN THE ACCOMPANYING TABLE.  
3. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.

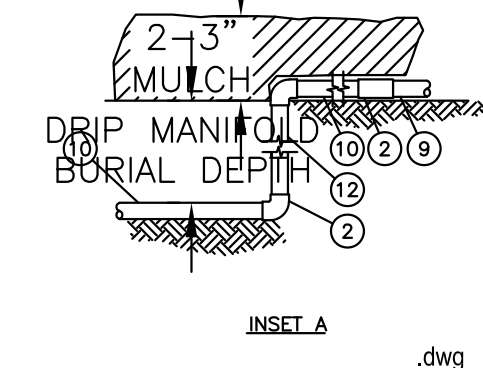


**4 END FEED LAYOUT ON SURFACE DRIPLINE** Scale: NTS

- PVC EXHAUST HEADER 2"-4" FROM PERIMETER OF AREA
- PVC SCH 40 TEE OR EL (TYPICAL)
- FLUSH POINT (TYPICAL) SEE RAIN BIRD DETAIL "XFD FLUSH POINT"
- BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
- PERIMETER OF AREA
- BARB X BARB INSERT TEE OR CROSS: RAIN BIRD XFF-TEE OR RAIN BIRD XFD-CROSS (TYPICAL)
- PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
- ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE (TYPICAL)  
POTABLE: XFD DRIPLINE  
NON-POTABLE: XFDP DRIPLINE
- PVC SUPPLY MANIFOLD
- PVC SUPPLY PIPE FROM RAIN BIRD CONTROL ZONE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- TOTAL LENGTH OF SELECTED DRIPLINE SHOULD NOT EXCEED LENGTH SHOWN IN TABLE
- PVC SCH 40 RISER PIPE



NOTES:  
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE INSTALLATION SPECIFICATIONS ON RAIN BIRD WEB SITE (WWW.RAINBIRD.COM) FOR SUGGESTED SPACING.  
2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM SPACING SHOWN IN THE ACCOMPANYING TABLE.  
3. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.



**5 IRREGULAR SHAPED LAYOUT ON SURFACE DRIPLINE** Scale: NTS

**6 ON SURFACE DRIPLINE** Scale: NTS



**LCW GROUP**

31473 Rancho Viejo Rd., Suite 208,  
San Juan Capistrano, CA 92675, USA  
Tel: 949-388-8588  
Email: lwang@thelcwgroup.com  
www.thelcwgroup.com

**LANDSCAPE & IRRIGATION PLANS FOR**

303 Harbor Blvd., La Habra, CA 90631

Client : Diamond Harbor LLC / 1235 Mahogany Ct.,  
Walnut, CA 91789

Date	Revision



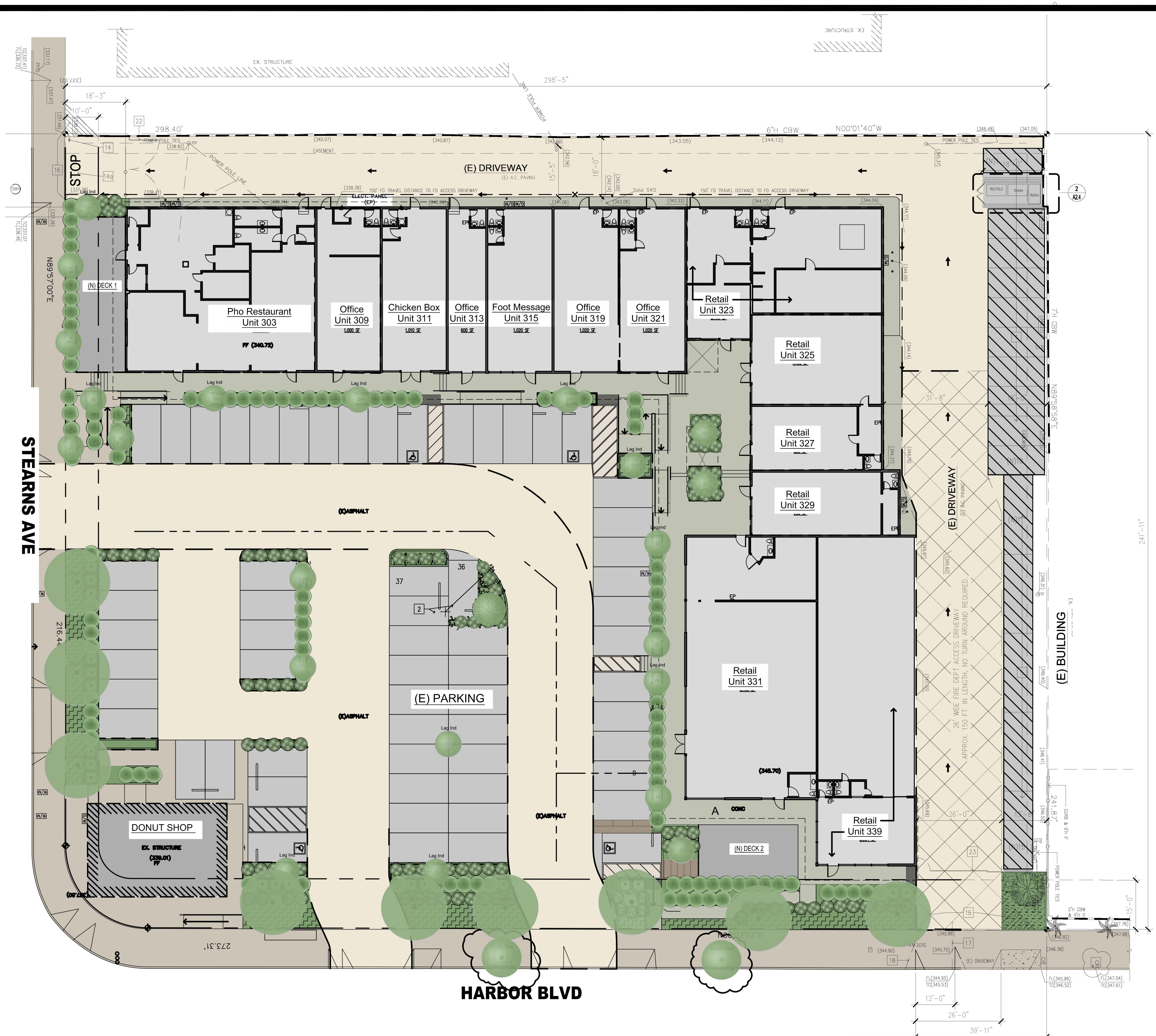
Sheet Title:

**PLANTING PLAN**

Job No. : 90631-03  
Scale: 1/16" = 1'-0"  
Drawn: LCW  
Checked: LCW

Sheet Number:

**LA-1.04**



**TREE SCHEDULE:**

KEY	BOTANICAL NAME	COMMON NAME	SIZE	FORM	STAKE/GUY	WUCOLS	QTY	COMMENTS
Lag Ind	Lagerstroemia indica 'Dynamite'	Crepe Myrtle	24 box	STD	Stake	L	22	Install root barrier manufacture recommendations if within 6' of paving
Ole Eur	Olea europaea	Common Olive	24 box	STD	Stake	M	10	Install root barrier manufacture recommendations if within 6' of paving
							144	Total Proposed

**SHRUB SCHEDULE:**

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	FORM	QTY	WUCOLS	COMMENTS
(Symbol)	Ligustrum japonicum 'Texanum'	Waxleaf Privet	5 gal.	-	-	M	
(Symbol)	Rhaphiolepis indica 'Clara'	Clara Indian Hawthorn	5 gal.	-	-	L	

**GROUND COVER SCHEDULE:**

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY	WUCOLS	COMMENTS
(Symbol)	Rosmarinus officinalis 'Prostratus'	Creeping Rosemary	Flat	18" o.c.	-	L	

Date	Revision

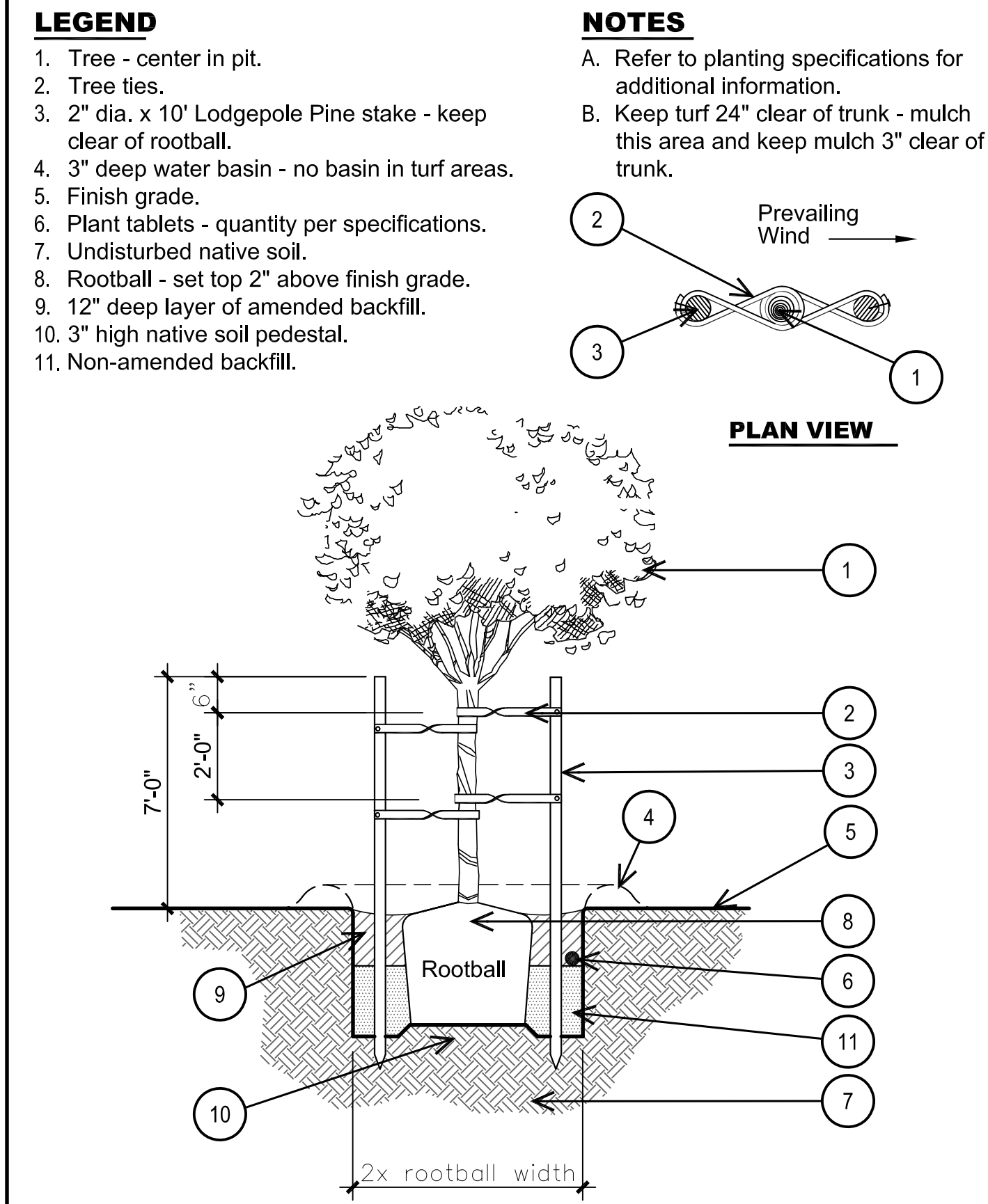


Sheet Title:  
**PLANTING DETAILS**

Job No. : 90631-03  
 Scale: see details  
 Drawn: LCW  
 Checked: LCW

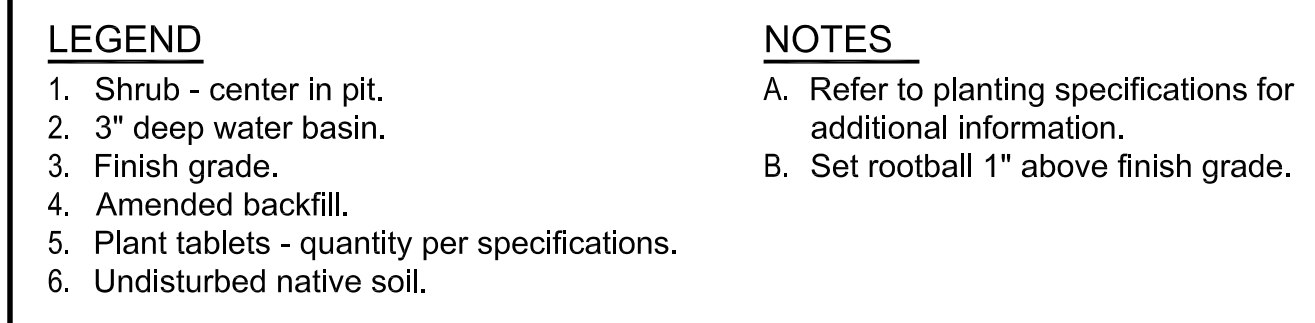
Sheet Number:

**LA-1.05**



PL-TR-02.dwg  
 Scale: NTS

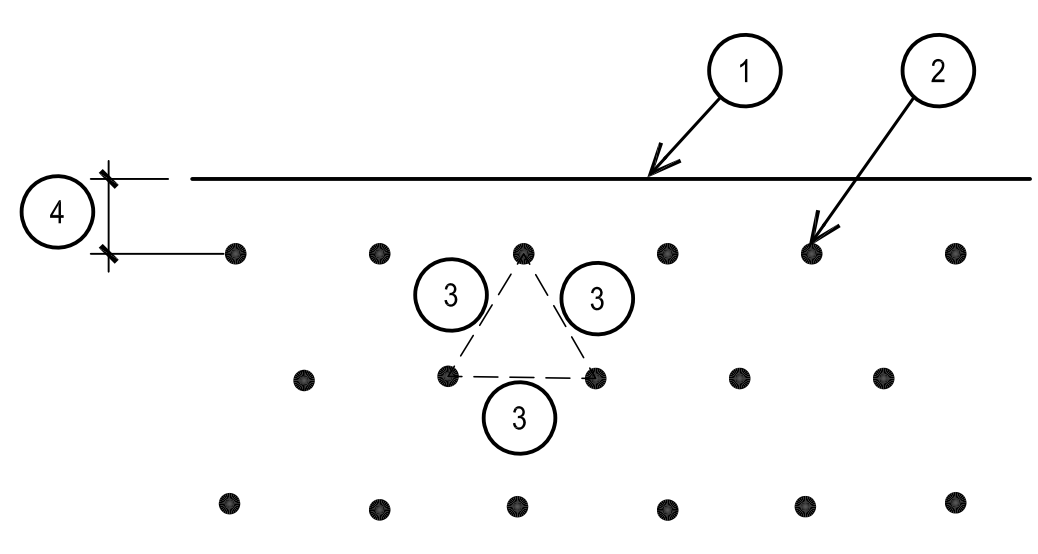
**1 TREE PLANTING (Double-Staked)**



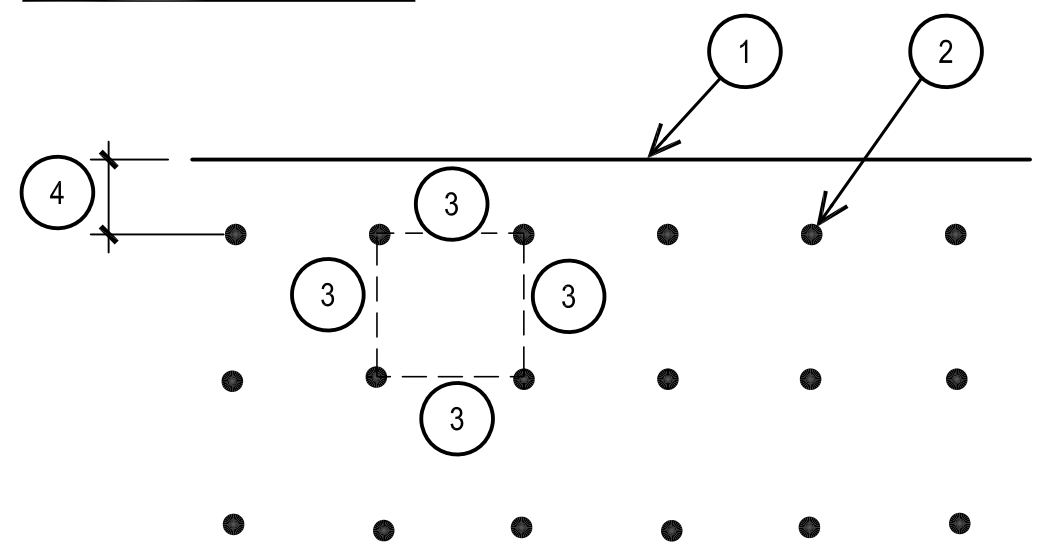
PL-SH-01.dwg  
 Scale: NTS

**2 SHRUB PLANTING**

- LEGEND**
1. Edge of paving, sidewalk, wall or curb
  2. Shrub or groundcover plant.
  3. Locate plant equal distance from each other. Spacing per Plant Legend.
  4. 1/2 of plant spacing distance - 12" min.



**TRIANGULAR SPACING**



**SQUARE SPACING**

PL-GC-01.dwg  
 Scale: N.T.S.

**3 SHRUB/GROUNDCOVER SPACING**

**5**

**6**