



City of Brentwood

Standard Plans and Specifications

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STANDARD DETAILS

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ITEM

**MANUFACTURER/MODEL
(OR APPROVED EQUAL)**

BACKFLOW PREVENTER	FEBCO 825Y-BV
GATE VALVE	NIBCO 619 RW
BALL VALVE	BRASS OR SCH 80 PVC TRUE UNION TYPE
QUICK COUPLING VALVE	44 RLC (RECLAIMED WATER USE), RAINBIRD 44NP 1"
PRESSURE REDUCING VALVE	WILKINS
REMOTE CONTROL VALVE	RAINBIRD PEB SERIES OR EFB-CP SERIES
VALVE BOXES IN PLANTING AREAS WITH STAINLESS STEEL LOCK-DOWN BOLTS	CARSON 1419-12
GATE & QC VALVE BOX W/ STAINLESS STEEL LOCK-DOWN BOLTS	CARSON 10" ROUND (# 1100 OR # 910)
VALVE BOXES IN PAVED AREAS	CHRISTY, B9X WITH C.I. TRAFFIC LID
CONTROLLER	MAXICOM COMPONENT RAINMASTER EVOLUTION (ETS ASSEMBLY)
CONTROLLER ENCLOSURE	TOP ENTRY STRONG BOX -SS
BACKFLOW ENCLOSURE	LEMEUR, GUARD SHACK CGS SERIES OR STRONGBOX (STAINLESS STEEL)
SHRUB STREAM ROTOR	RAINBIRD
POP-UP STREAM ROTOR	RAINBIRD OR TORO
GEAR DRIVEN ROTARY	HUNTER OR TORO
LAWN POP-UP SPRAY	RAINBIRD 1800 (PRS) OR TORO 6" POP-UP
SHRUB POP-UP SPRAY	RAINBIRD 1800 (PRS) OR TORO 6" & 12" POP-UP
BUBBLER	RAINBIRD 1401 - BUBBLE NOZZLE (.25 GPM)

(Not To Scale)



**ENGINEERING
DEPARTMENT**



IRRIGATION EQUIPMENT LIST

Allen S. Baquilar
ALLEN S. BAQUILAR

CITY ENGINEER

DATE: JUNE 20, 2003

REVISED: SEP. 26, 2024

SHEET No.

I-1a

ITEM

**MANUFACTURER/MODEL
(OR APPROVED EQUAL)**

3" WIDE DETECTABLE MARKING TAPE

CHRISTY'S

DRAIN ROCK

3/4" - VIRGIN

TREE PROTECTION FOR EXISTING TREE

HIGH DENSITY 4' HIGH, ORANGE COLOR,
POLYETHYLENE FENCING

(Not To Scale)



**ENGINEERING
DEPARTMENT**



IRRIGATION EQUIPMENT LIST

Allen Baquilar
ALLEN S. BAQUILAR

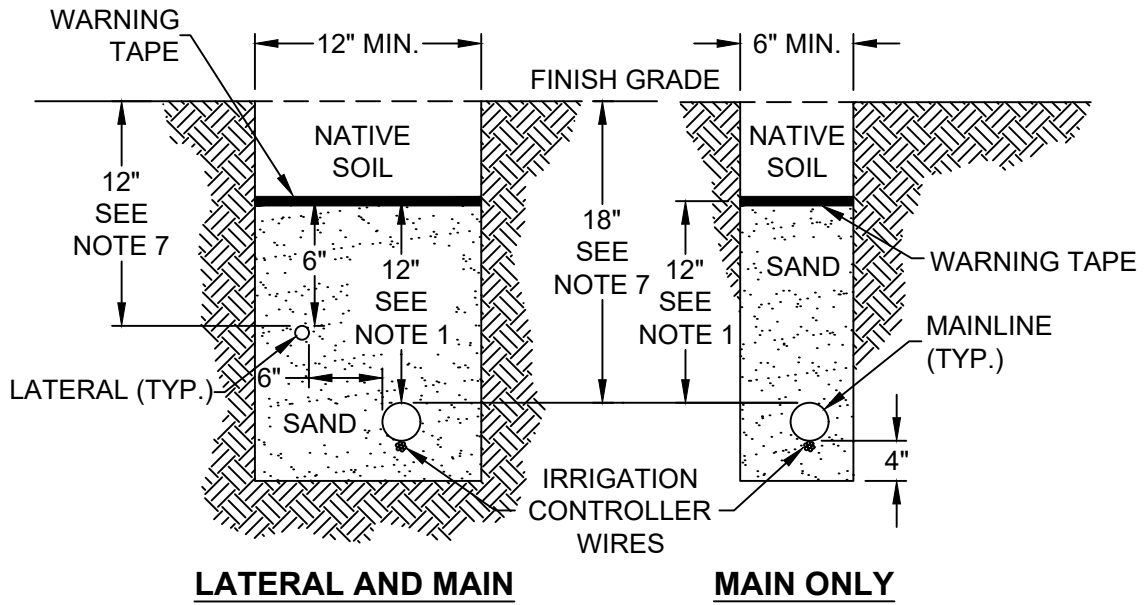
CITY ENGINEER

DATE: SEP. 26, 2024

REVISED:

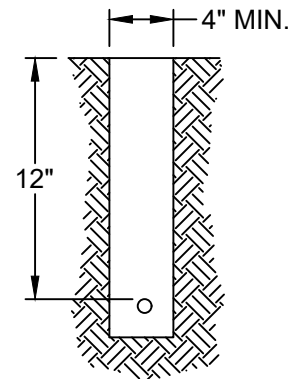
SHEET No.

I-1b



NOTES:

1. INSTALL 3" WIDE DETECTABLE WARNING TAPE (CHRISTY'S) 12" MIN ABOVE MAINLINE.
2. SALVAGED EXCAVATED FILL COMPACTED TO ORIGINAL DENSITY IN LANDSCAPED AREAS ONLY; ALL OTHER AREAS SHALL BE AT 95% COMPACTION AND AT 2% OPTIMUM MOISTURE.
3. FOR ANY PIPE UNDER PAVEMENT, SEE ST-25.
4. THE pH VALUE OF ALL BACKFILL MATERIAL SHALL BE TESTED TO BE WITHIN 6.5 TO 7.5 RANGE.
5. IRRIGATION CONTROLLER WIRES SHALL BE INSTALLED UNDER MAIN LINE AS SHOWN.
6. INSTALL 10 GAUGE INSULATED LOCATION WIRE TAPED TO PIPE EVERY 10'.
7. WHEN 8" - 12" SPRINKLER HEADS ARE USED, MAIN LINE DEPTH FROM THE FINISH GRADE SHALL INCREASE TO 24" AND LATERALS TO 18".



(Not To Scale)



**ENGINEERING
DEPARTMENT**



IRRIGATION SYSTEM TRENCHING

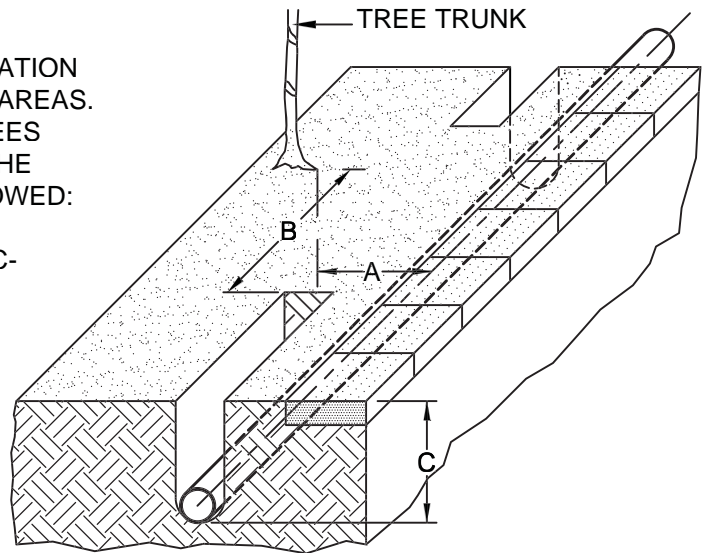
Allen S. Baquilar
ALLEN S. BAQUILAR CITY ENGINEER

DATE: JUNE 16, 2003
REVISED: SEP. 5, 2024

SHEET No.
I-2

NOTES:

CARE SHALL BE TAKEN WHEN PIPE INSTALLATION IS REQUIRED WITHIN EXISTING TREE ROOT AREAS. AVOID TRENCHING WITHIN DRIPLINE OF TREES WHERE POSSIBLE. WHEN NOT POSSIBLE, THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:



1. OPEN TRENCHES CAN BE DUG MECHANICALLY UNTIL REACHING THE DRIPLINE OF THE TREE. TRENCHES WITHIN THE DRIPLINE OF THE TREE SHOULD BE CONTINUED BY HAND. DAMAGED ROOTS OVER 1-1/2" IN DIAMETER SHALL BE CUT LEAVING A CLEAN, SMOOTH SURFACE. ROOTS OVER 4" IN DIAMETER SHALL BE CAREFULLY HAND DUG UNDER. IF MANY ROOTS ARE CUT, THE TOP OF THE TREE SHOULD BE THINNED PROPORTIONALLY; CONSULT WITH LANDSCAPE ARCHITECT OR ARBORIST PRIOR TO THINNING.
2. IF PIPE INSTALLATION IS TO PASS BY THE TREE TRUNK WITHIN DIMENSION "A", THEN TRENCH FROM OPPOSITE SIDES OF THE TREE UNTIL DIMENSION "B" IS REACHED. A TUNNEL IS THEN TO BE AUGURED BETWEEN THESE TRENCHES AT THE CORRESPONDING DIMENSION "C" DEPTH AND PIPE INSTALLED. TO AVOID POSSIBLE TAP ROOTS, NEVER TUNNEL DIRECTLY BELOW TREE TRUNK.
3. ONCE THE ABOVE PROCEDURES ARE COMPLETED, IMMEDIATELY INSTALL PIPES, CONTROL WIRE, ETC., BACKFILL TRENCH AND SOAK.

TREE DIAMETER		DISTANCE OF TUNNEL FROM EACH SIDE OF TREE TRUNK "A"		DISTANCE OF OPEN TRENCH FROM TREE TRUNK "B"		DEPTH OF TUNNEL OR TRENCH "C"	
mm	in	m	ft	m	ft	m	ft
50	2	0.6	2	0.9	3	0.9	3.00
75	3	0.9	3	1.8	6	1.0	3.25
150	6	1.5	5	3.0	10	1.0	3.33
300	12	1.8	6	3.6	12	1.1	3.67
450	18	2.1	7	4.2	14	1.2	4.00
600	24	2.4	8	4.8	16	1.3	4.33
750	30	2.7	9	5.5	18	1.4	4.67
900	36	3.0	10	6.0	20	1.5	4.83
1050	42	3.6	12	6.6	22	1.5	5.00

(Not To Scale)



ENGINEERING DEPARTMENT



TUNNELING

Balwinder S. Grewal

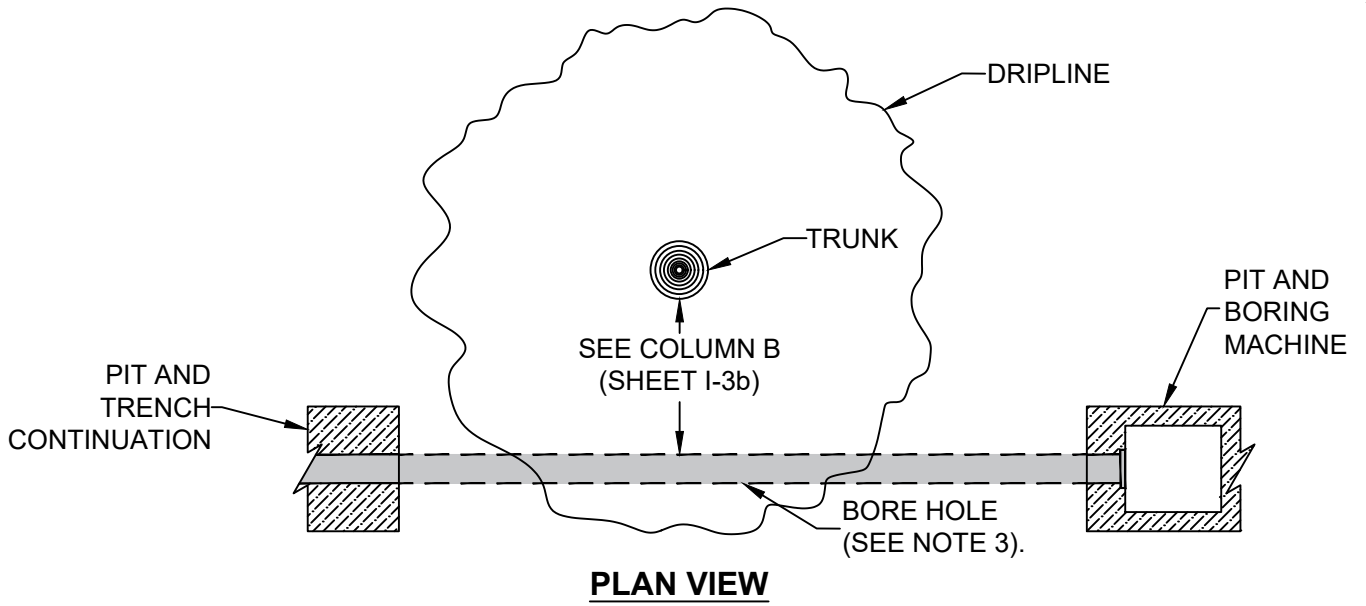
BALWINDER S. GREWAL CITY ENGINEER

DATE: MAY 28, 1999

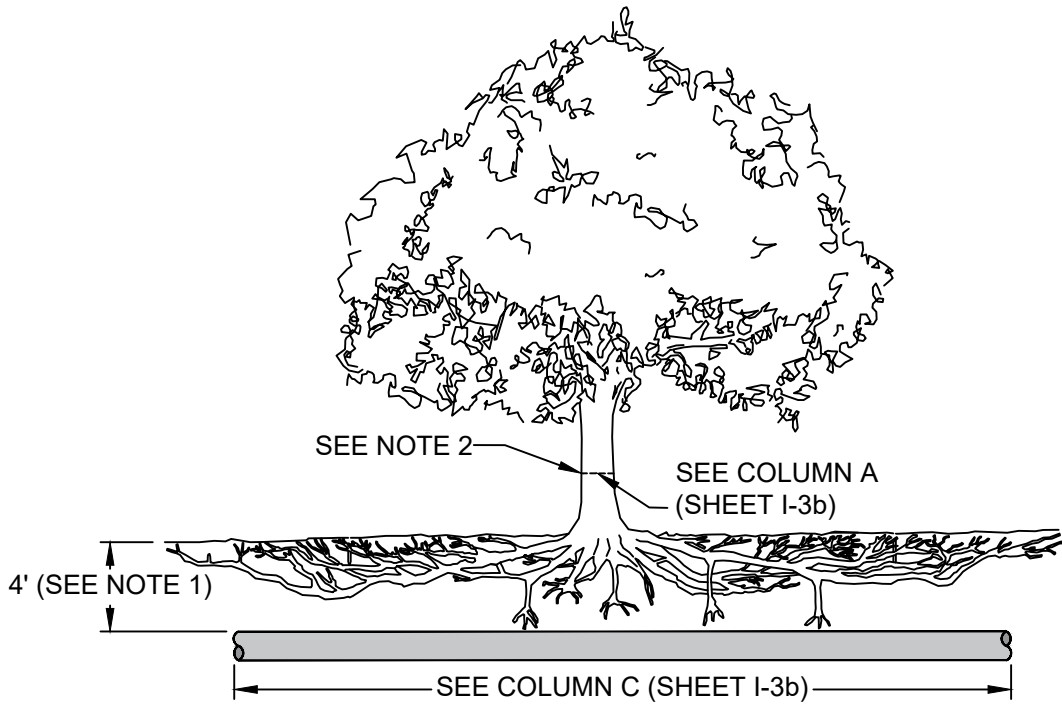
REVISED: DEC. 31, 2013

SHEET No.

I-3



PLAN VIEW



SECTION VIEW

NOTE: SEE SHEET I-3b FOR MATRIX TABLE AND DETAIL NOTES.

(Not To Scale)



**ENGINEERING
DEPARTMENT**



TUNNELING

Allen S. Baquilar
ALLEN S. BAQUILAR CITY ENGINEER

DATE: SEP. 11, 2024
REVISED:

SHEET No.
I-3a

MATRIX TABLE

A TREE DIAMETER MEASURE AT 4 ½ FEET FROM SOIL	B MINIMUM OFFSET DISTANCE FROM TRUNK FACE TO EDGE OF BORE HOLE	C MINIMUM LENGTH OF BORE HOLE (CENTERED ON TRUNK)
<u>INCHES</u>	<u>FEET</u>	<u>FEET</u>
2	1	2
3	2	3
5	5	5
10	10	10
15	12	15
20	15	20

NOTES:

1. BORING ACTIVITY SHOULD OCCUR AT LEAST 4 FEET BELOW SOIL SURFACE PER THE URBAN TREE FOUNDATION.
2. MEASURE TRUNK DIAMETER AT 4.5 FEET FROM SOIL LINE.
3. THE BORE HOLE SHOULD NOT BE LOCATED DIRECTLY BENEATH THE TRUNK IN ORDER TO AVOID LARGE DOWNWARD GROWING OBLIQUE ROOTS.
4. THIS DETAIL IS BASED ON ANSI A300 COMPANION PUBLICATION TO PART 5: BEST MANAGEMENT PRACTICES, MANAGING TREES DURING CONSTRUCTION. INTERNATIONAL SOCIETY OF ARBORICULTURE COPYRIGHT 2008.
5. USE MATRIX TABLE TO CORRELATE TRUNK DIAMETER (A) TO THE MINIMUM OFFSET DISTANCE FROM TRUNK TO EDGE OF BORE HOLE (B), AND THE MINIMUM LENGTH OF THE BORE HOLE (C).
6. ADHERENCE TO THE DIMENSIONS PROVIDED IN COLUMNS B AND C OF THE MATRIX TABLE WILL HELP TO ENSURE THAT MOST, IF NOT ALL, STRUCTURALLY IMPORTANT ROOTS WILL REMAIN UNDAMAGED BY BORING ACTIVITIES.

(Not To Scale)



ENGINEERING DEPARTMENT

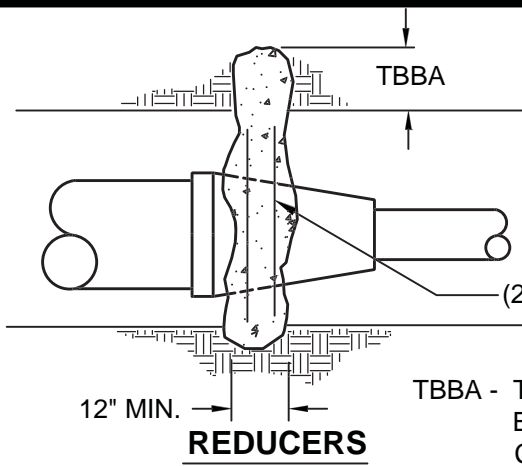


TUNNELING

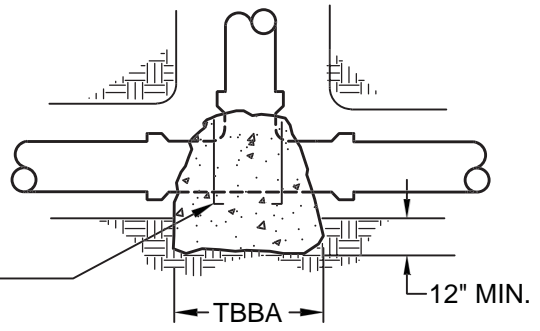
Allen Baquilar
ALLEN S. BAQUILAR CITY ENGINEER

DATE: SEP. 11, 2024
REVISED:

SHEET No.
I-3b

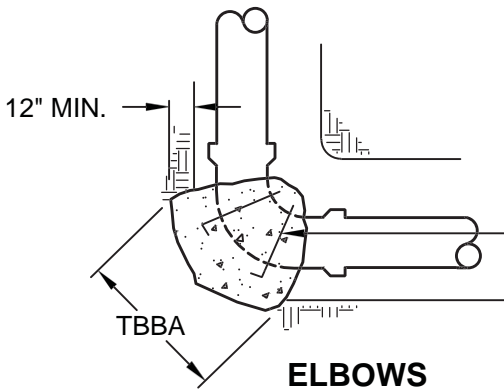


REDUCERS

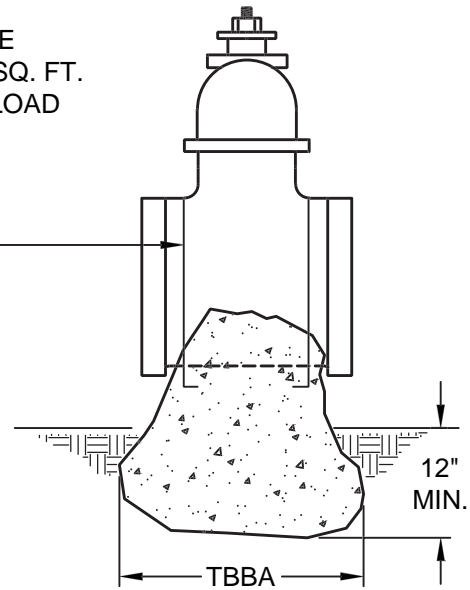


TEES & DEAD ENDS

TBBA - THRUST BLOCK BEARING AREA CALCULATED USING 125 P.S.I. TEST PRESSURE AND 1000 LBS./SQ. FT. SOIL BEARING LOAD



ELBOWS



VALVES

NOTES:

1. THRUST BLOCKS SHALL NOT PROJECT HIGHER THAN 1/2 THE DISTANCE FROM THE BOTTOM OF THE TRENCH TO FINISH GRADE.
2. DO NOT COVER ENDS OF FITTINGS OR BOLTS WITH CONCRETE.
3. CONCRETE SHALL HAVE COMPRESSION STRENGTH OF 2000 PSI.
4. CONSULT MANUFACTURER'S LITERATURE FOR RECOMMENDED THRUST BEARING AREA (TBBA) BASED ON ACTUAL FIELD CONDITIONS. AT MINIMUM, TBBA SHALL BE SIZED AS FOLLOWS:

PIPE SIZE	90-DEGREE ELLS	45-DEGREE ELLS	VALVES, TEES REDUCERS, DEAD ENDS
4"	1.5 SQ. FT.	1.0 SQ.FT.	1.0 SQ. FT.*
6"	3.5 SQ. FT.	2.5 SQ. FT.	2.5 SQ. FT.*
8"	6.3 SQ. FT.	4.5 SQ. FT.	4.5 SQ. FT.*

* OR AS DESIGNED BY THE ENGINEER (Not To Scale)



**ENGINEERING
DEPARTMENT**

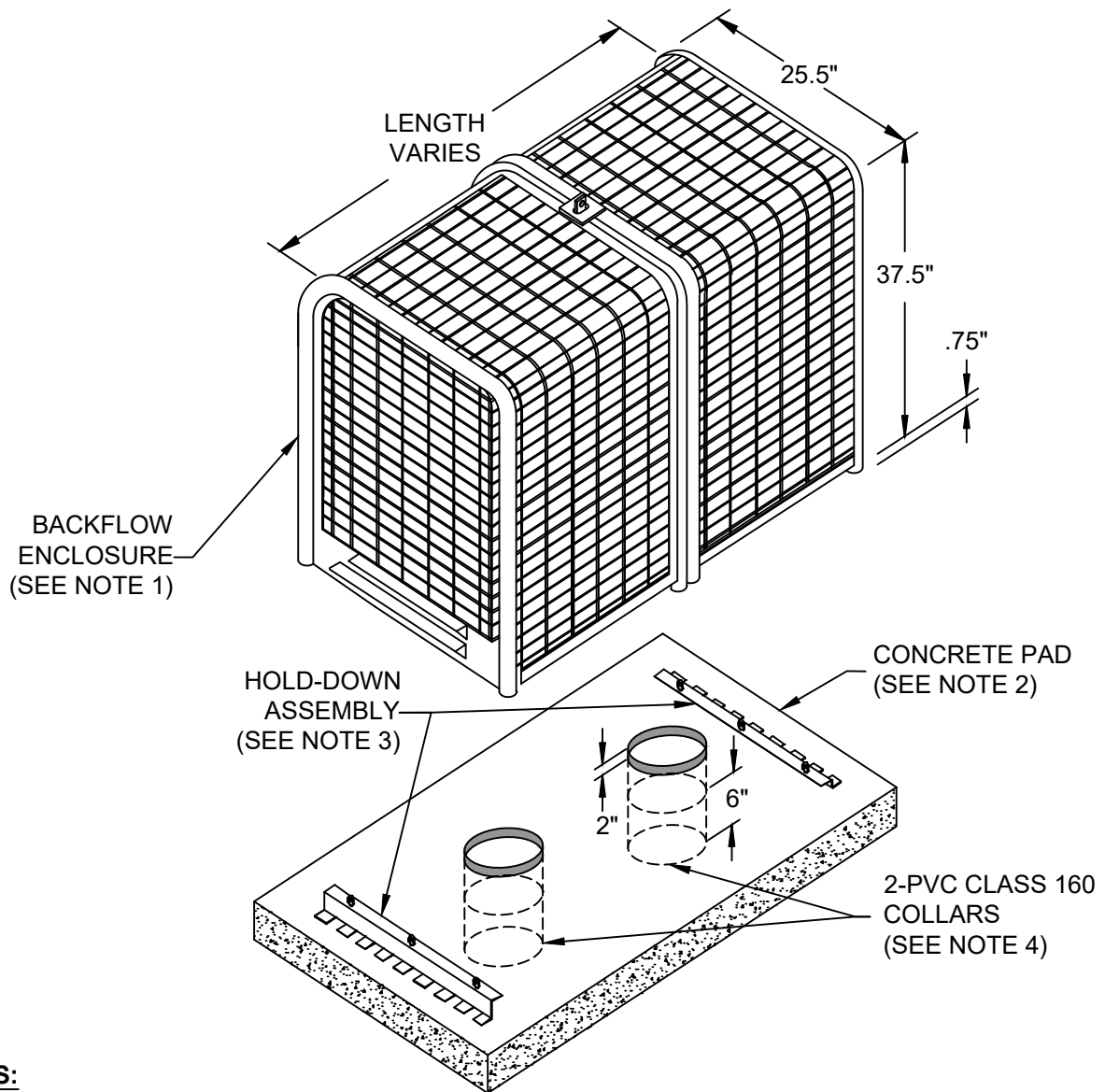


**IRRIGATION SYSTEM
THRUST BLOCKING**

Balwinder S. Grewal
BALWINDER S. GREWAL CITY ENGINEER

DATE: APRIL 15, 1999
REVISED: DEC. 31, 2013

SHEET No.
I-4



NOTES:

1. APPROVED STAINLESS STEEL LOCKABLE BACKFLOW PREVENTION ENCLOSURE WITH MARINE GRADE ALUMINUM AND STAINLESS STEEL HARDWARE.
2. CONTRACTOR INSTALLED CONCRETE PAD, MINIMUM 6" THICK TO EXTEND 6" OUT FROM ALL SIDES OF ENCLOSURE.
3. EMBED HOLD-DOWN ASSEMBLY INC CONCRETE EQUIPMENT PAD PER MANUFACTURER'S SPECIFICATIONS.
4. PVC COLLAR THROUGH CONCRETE PAD SHALL EXTEND A MINIMUM OF 2" ABOVE THE TOP OF CONCRETE PAD AND A MINIMUM OF 6" BEYOND THE BOTTOM OF CONCRETE PAD.

(Not To Scale)



**ENGINEERING
DEPARTMENT**

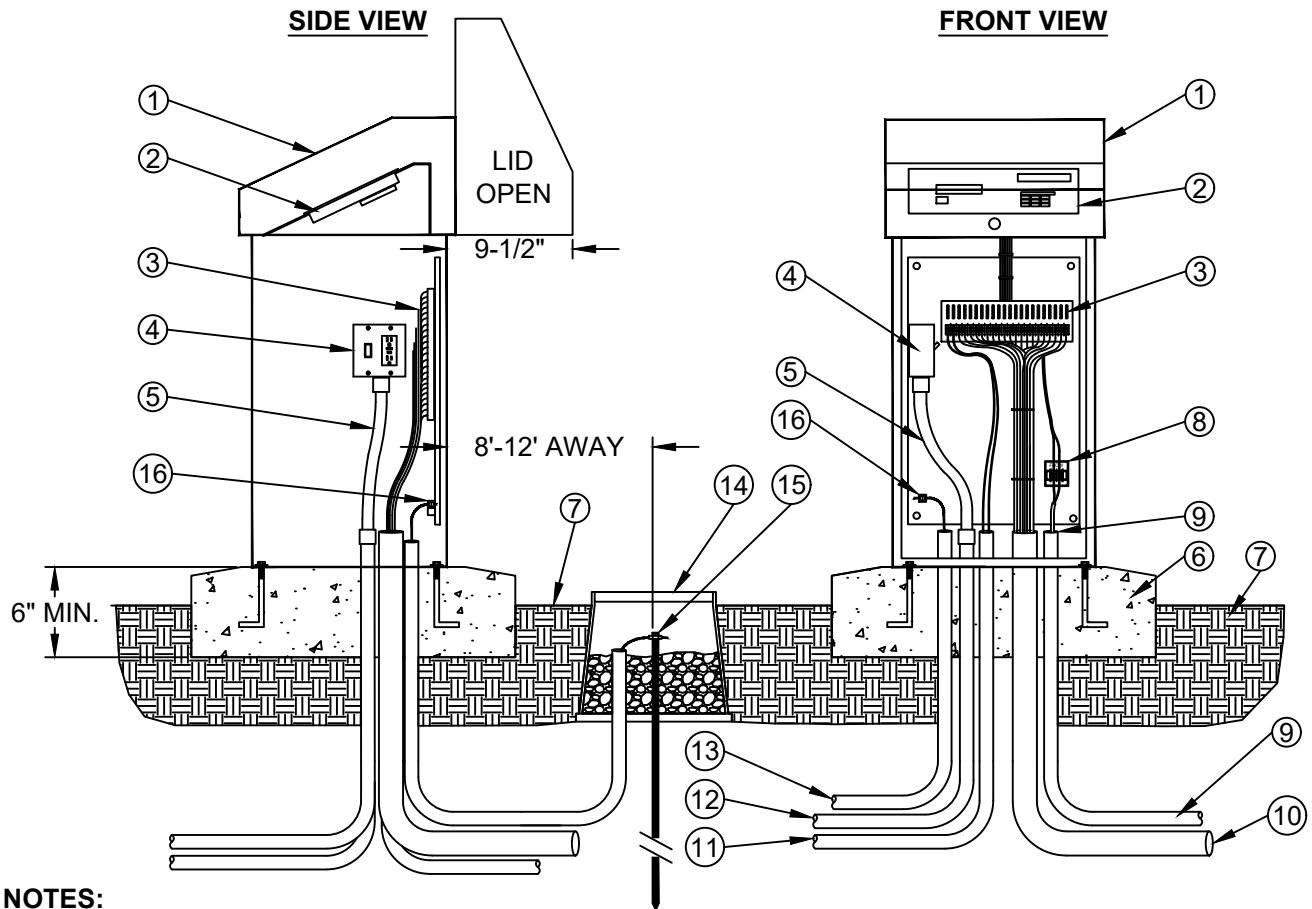


BACKFLOW PREVENTER ENCLOSURE

Allen S. Baquilar
ALLEN S. BAQUILAR CITY ENGINEER

DATE: SEP. 26, 2024
REVISED:

SHEET No.
I-5



NOTES:

1. STRONGBOX STAINLESS STEEL NEMA 3R RAINPROOF ENCLOSURE (UL LISTED).
2. RAINMASTER DXICA CELLULAR COMMUNICATION.
3. TERMINAL STRIP FOR VALVE WIRES.
4. POWER SWITCH / GFCI RECEPTACLE.
5. ELECTRICAL FLEX CONDUIT FOR POWER.
6. 6" MIN THICK, CONCRETE PAD WITH ANCHOR BOLTS PER MANUFACTURER RECOMMENDATIONS.
7. FINISHED GRADE.
8. FLOW SENSOR TERMINAL BOARD.
9. 1" CONDUIT AND SWEEP ELL WITH FLOW SENSOR CABLE.
10. 3" CONDUIT AND SWEEP ELL FOR LEAD WIRES.
11. 1" CONDUIT AND SWEEP ELL FOR MASTER VALVE WIRES.
12. 1" CONDUIT AND SWEEP ELL FOR 110 VAC POWER LINE.
13. 1" CONDUIT AND SWEEP ELL FOR GROUND WIRE.
14. 10" ROUND VALVE BOX AROUND GROUND ROD. FILL WITH $\frac{3}{4}$ " CRUSHED ROCK.
15. $\frac{5}{8}$ " X 8' GROUND ROD WITH #6 GROUND WIRE AND CLAMP. LOCATE 8'-12' FROM ENCLOSURE.
16. #6 GROUND WIRE SECURED TO BACKBOARD GROUND TERMINAL.
17. SEE IRRIGATION LEGEND CALL OUT FOR INCLUDED SATELLITE COMMUNICATION COMPONENTS. SUGGESTED CONDUIT SIZES MAY NEED TO BE LARGER.

(Not To Scale)



**ENGINEERING
DEPARTMENT**

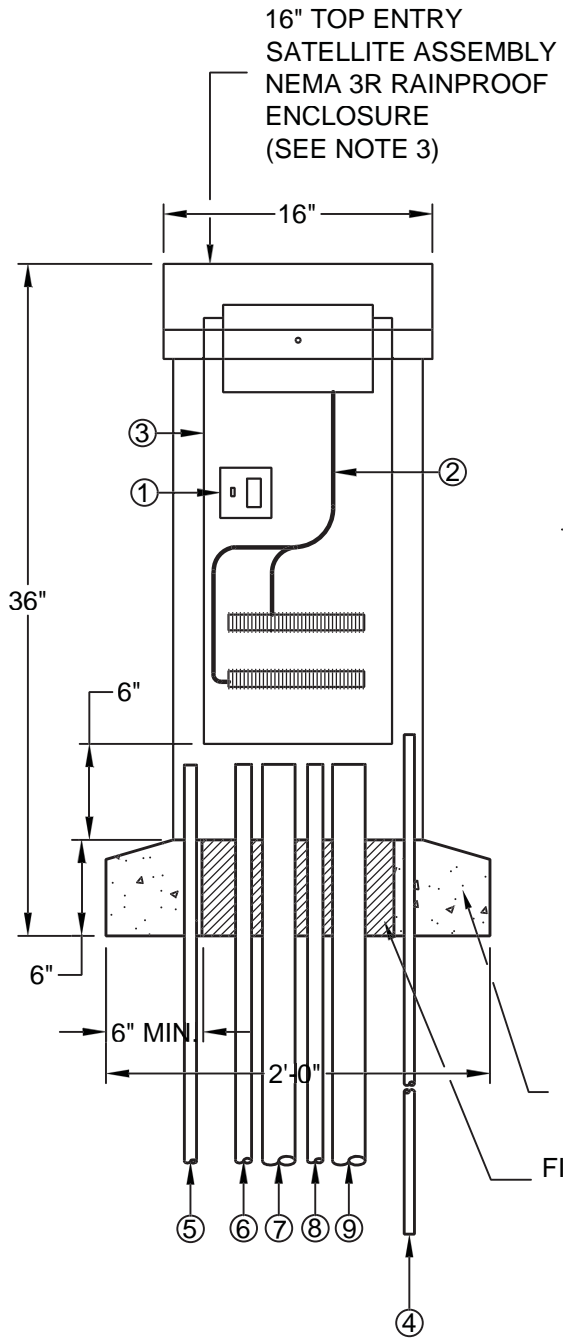


**RAINMASTER DXICA WITH TOP ENTRY
ENCLOSURE AND CONCRETE PAD**

Allen S. Baquilar
ALLEN S. BAQUILAR CITY ENGINEER

DATE: SEP. 16, 2024
REVISED:

SHEET No.
I-6

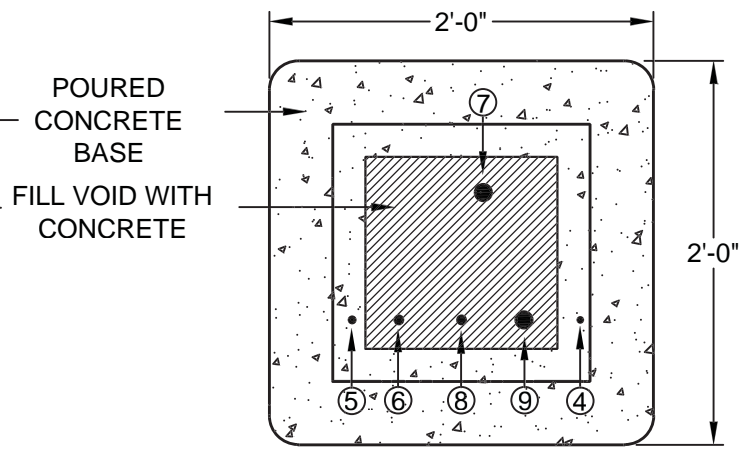


LEGEND:

- ① POWER SWITCH/GFI RECEPTACLE
- ② TERMINAL STRIP FOR VALVES
- ③ PHONE INTERFACE BOX
- ④ 5/8" Ø x 8' GROUND ROD WITH #8 BONDING WIRE & CLAMP
- ⑤ 3/4" PVC CONDUIT FOR 120 VAC FROM METERED POWER SUPPLY
- ⑥ 1" PVC CONDUIT FOR EV-CAB-COM
- ⑦ 3/4" PVC CONDUIT FOR CONTROL WIRES, SIZE AS REQUIRED
- ⑧ 1" PVC CONDUIT FOR FLOW & MOISTURE SENSING CABLE(S)
- ⑨ 2" PVC CONDUIT INSTALLED FOR PHONE WITH PULL ROPE

NOTES:

1. ALL CABLES AND ELECTRICAL WIRES MUST BE RUN IN CONDUIT.
2. PG & E WILL PROVIDE AND INSTALL THE ELECTRIC METER. CONTRACTOR SHALL COORDINATE WITH PG & E.
3. NO SUBSTITUTION IS ALLOWED ON THE ENTIRE ASSEMBLY UNLESS AN EQUALLY COMPARABLE ENCLOSURE ASSEMBLY HAS BEEN SUBMITTED TO AND APPROVED BY THE PARKS AND RECREATION DEPARTMENT.



(Not To Scale)



ENGINEERING DEPARTMENT

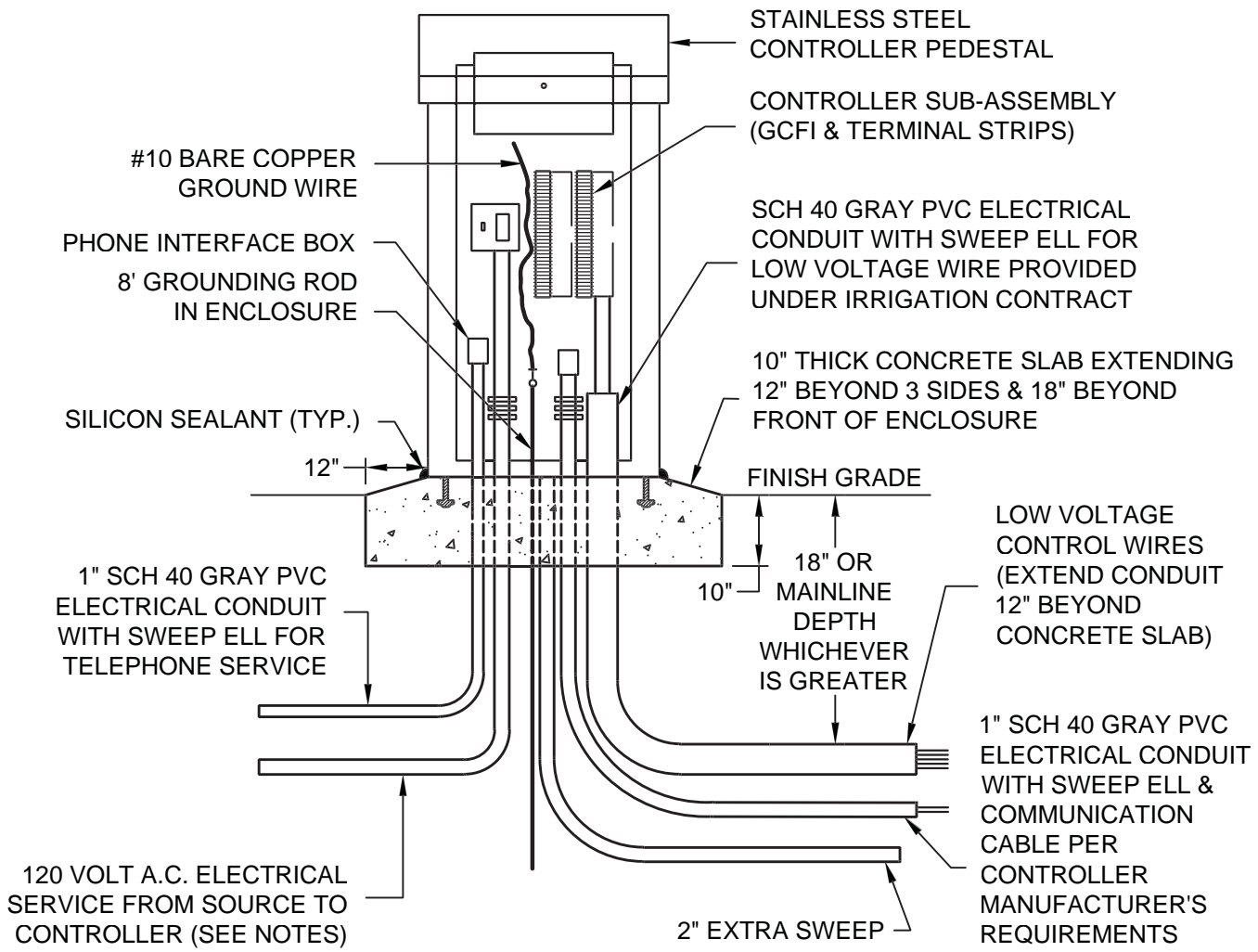


RAINMASTER DX2 IRRIGATION CONTROLLER

B. Grewal
BALWINDER S. GREWAL CITY ENGINEER

DATE: JUNE 20, 2003
REVISED: DEC. 31, 2013

SHEET No.
I-6a



NOTES:

1. ELECTRICAL SERVICE FROM SOURCE TO CONTROLLER LOCATION SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
2. IRRIGATION CONTRACTOR SHALL PROVIDE RIGID STEEL CONDUIT FROM SERVICE STUB-OUT TO CONTROLLER GCFI SWITCH AND SHALL COMPLETE ELECTRICAL SERVICE TO CONTROLLER.
3. ENCLOSURE'S FIELD LOCATION AND ORIENTATION SHALL BE APPROVED BY THE CITY ENGINEER OR DESIGNEE.

(Not To Scale)



**ENGINEERING
DEPARTMENT**



**RAINMASTER DX2 IRRIGATION CONTROLLER
ENCLOSURE TOP OPENING**

B. Grewal
BALWINDER S. GREWAL CITY ENGINEER

DATE: JULY 25, 2007
REVISED: DEC. 31, 2013

SHEET No.
I-6b

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(Not To Scale)



**ENGINEERING
DEPARTMENT**



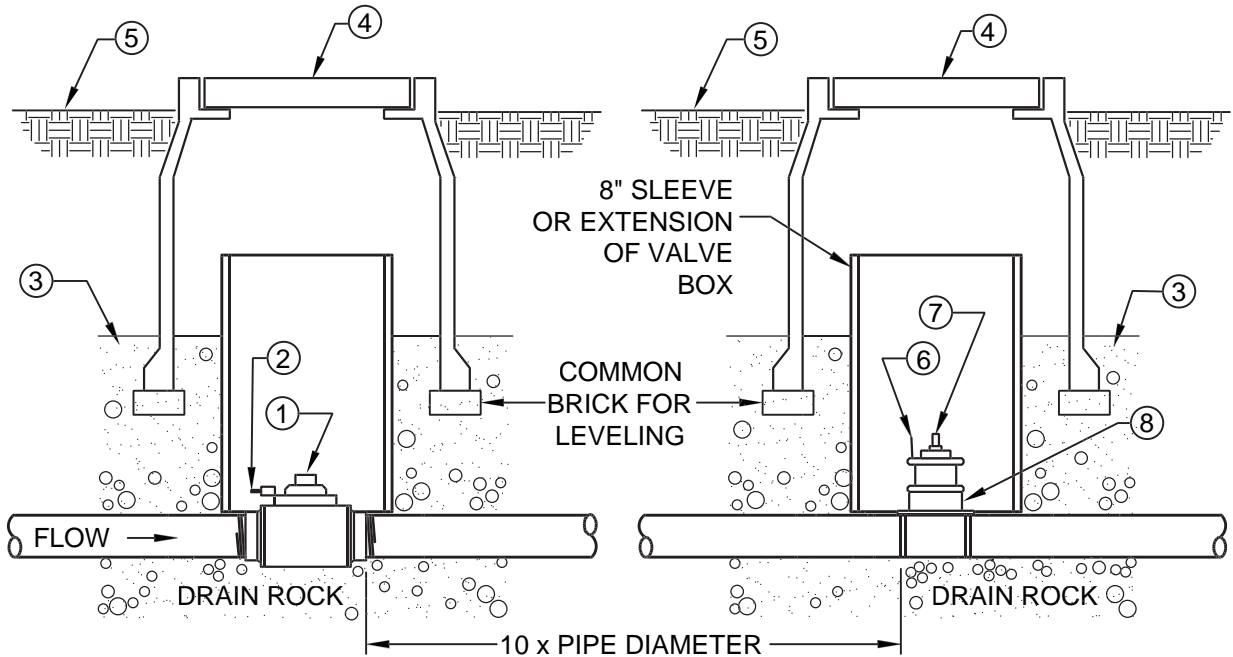

BALWINDER S. GREWAL CITY ENGINEER

DATE:

REVISED:

SHEET No.

I-7



LEGEND

- ① MASTER VALVE(S) (NORMALLY CLOSED)
- ② WIRE TO CONTROLLER ASSEMBLY (PE-89 SHIELDED CABLE)
- ③ 1/4" PEA GRAVEL
- ④ VALVE BOX (RECTANGULAR 1419-12 BOX ONLY OR APPROVED EQUAL)
- ⑤ FINISH GRADE (SOIL)
- ⑥ DATA INDUSTRIAL IR220 SERIES FLOW SENSOR(S)
- ⑦ WIRE TO FLOW SENSING EQUIPMENT AT CONTROLLER ASSEMBLY
- ⑧ DOUBLE-STRAP SADDLE - 4" AND LARGER

NOTE: SEE I-10 FOR FLOW SENSOR DETAIL.

(Not To Scale)



**ENGINEERING
DEPARTMENT**

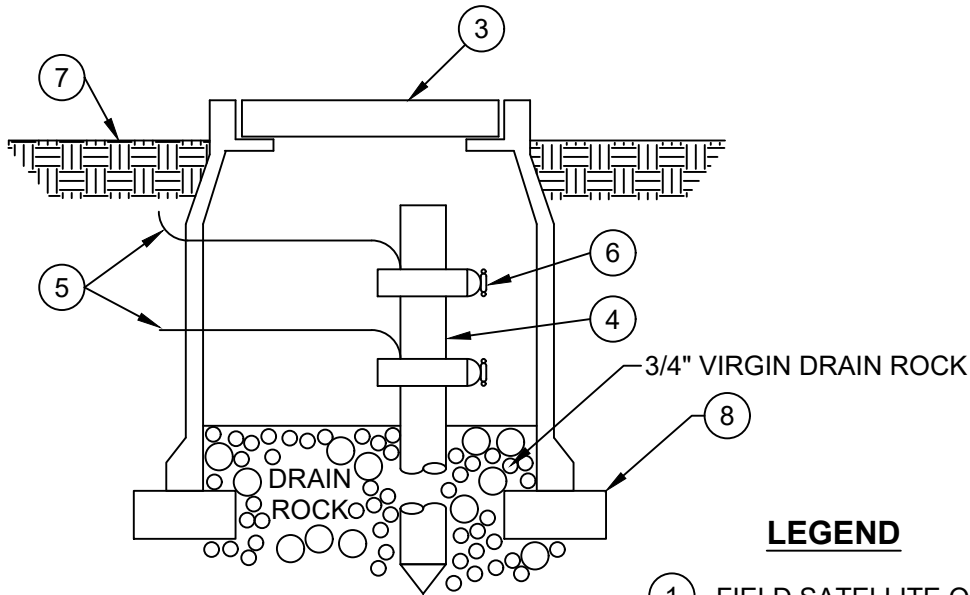


MASTER VALVE AND FLOW SENSOR

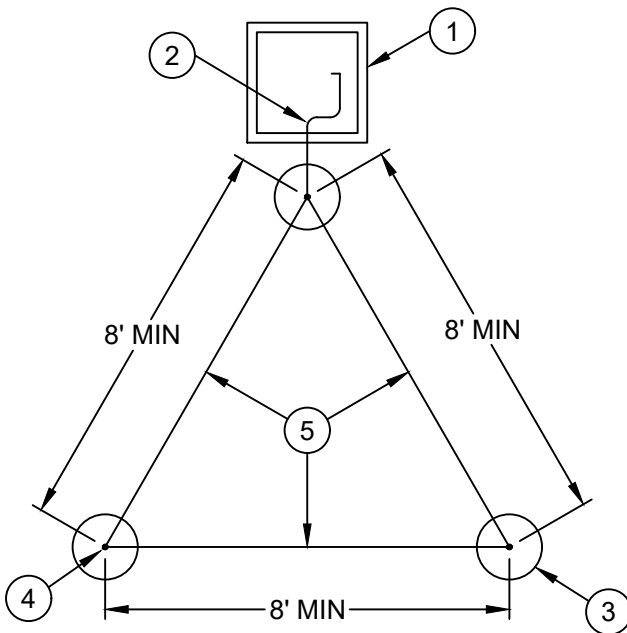
Balwinder S. Grewal
BALWINDER S. GREWAL CITY ENGINEER

DATE: JULY 12, 2007
REVISED: DEC. 31, 2013

SHEET No.
I-8



GROUND ROD ASSEMBLY



GROUND ROD LAYOUT

LEGEND

- ① FIELD SATELLITE OR CCU ASSEMBLY
- ② SOLID BARE COPPER WIRE (#10 AWG) FROM GROUNDING ROD TO SATELLITE OR CCU (MAKE WIRE AS SHORT AND STRAIGHT AS POSSIBLE)
- ③ COVER GROUNDING ROD WITH #10 ROUND VALVE BOX
- ④ 3/4" x 10' COPPER CLAD GROUNDING ROD; INSTALL RODS IN SOIL IN A TRIANGULAR PATTERN SPACED A MINIMUM OF 8' APART FROM EACH OTHER. GROUNDING GRID TO HAVE A RESISTANCE OF TEN (10) OHMS OR LESS
- ⑤ BARE COPPER WIRE (#10 AWG) BETWEEN GROUNDING RODS
- ⑥ GROUND ROD CLAMPS
- ⑦ FINISH GRADE
- ⑧ COMMON BRICK FOR LEVELING

(Not To Scale)



**ENGINEERING
DEPARTMENT**

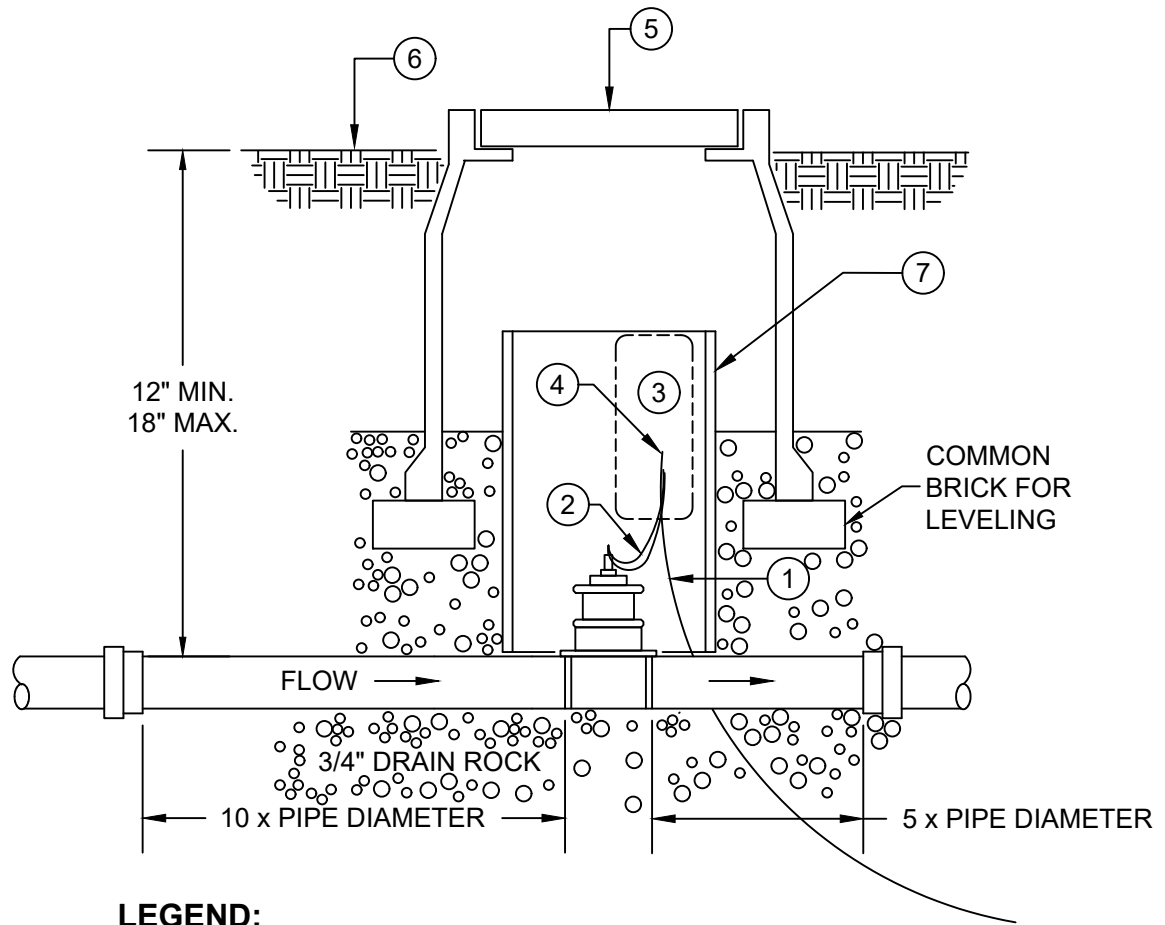


**CCU OR FIELD SATELLITE
GROUNDING GRID**

Allen S. Baquilar
ALLEN S. BAQUILAR CITY ENGINEER

DATE: JUNE 16, 2003
REVISED: SEP. 5, 2024

SHEET No.
I-9



LEGEND:

- ① SHIELDED CABLE AS PER MANUFACTURER'S RECOMMENDATION
- ② FLOW SENSOR WIRES
- ③ PREFORMED SUPER SERWISEAL WATERPROOF WIRE SPLICE KIT
- ④ 3M-DBR/Y-6 WIRE CONNECTION (SEE I-12)
- ⑤ VALVE BOX (RECTANGULAR 1419-12 BOX ONLY OR APPROVED EQUAL)
- ⑥ FINISH GRADE (SOIL)
- ⑦ 6" Ø SLEEVE

(Not To Scale)



**ENGINEERING
DEPARTMENT**

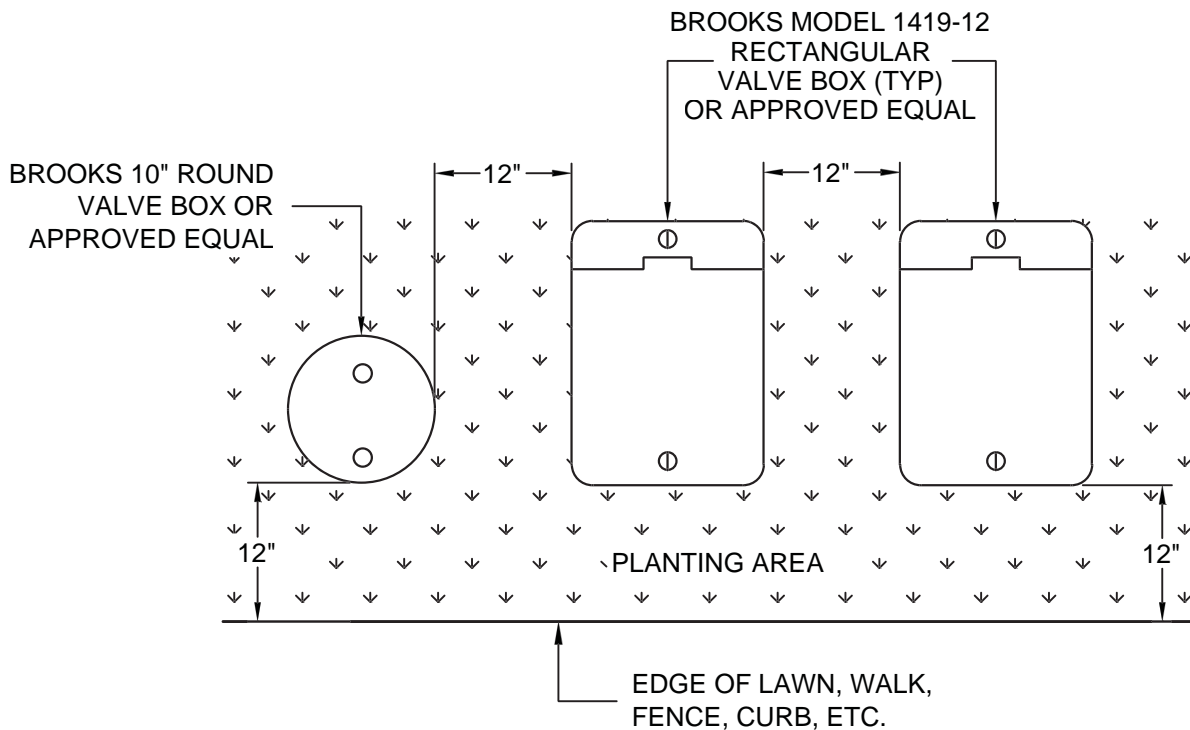


FLOW SENSOR WIRE SPLICE

Allen S. Baquilar
ALLEN S. BAQUILAR CITY ENGINEER

DATE: JULY 12, 2007
REVISED: SEP. 5, 2024

SHEET No.
I-10



INSTALLATION NOTES:

1. CENTER BOXES OVER VALVES.
2. SET BOXES IN GROUND COVER/SHRUB ARE WHERE POSSIBLE.
3. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE.
4. AVOID HEAVILY COMPACTING SOIL AROUND BOXES TO PREVENT DAMAGING VALVE BOXES.
5. TAG VALVES WITH STATION NUMBERS.
6. HEAT BRAND STATION NUMBER TO LID CONTROL VALVE COVER WITH 1¼" LETTERS.
7. INSTALL STAINLESS STEEL BOLTS IN LOCKING COVER.
8. WHEN USED AS RECLAIMED WATER, LIDS SHALL BE COLOR-CODED PURPLE.
9. FOR ALL VALVES 1 ½" AND LARGER, JUMBO BOX SHALL BE USED.

(Not To Scale)



**ENGINEERING
DEPARTMENT**



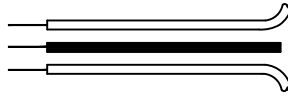
IRRIGATION VALVE BOX INSTALLATION

B. Grewal
BALWINDER S. GREWAL CITY ENGINEER

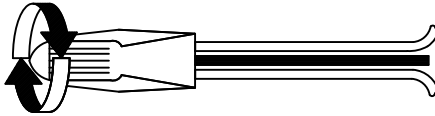
DATE: APR. 29, 2005
REVISED: DEC. 31, 2013

SHEET No.
I-11

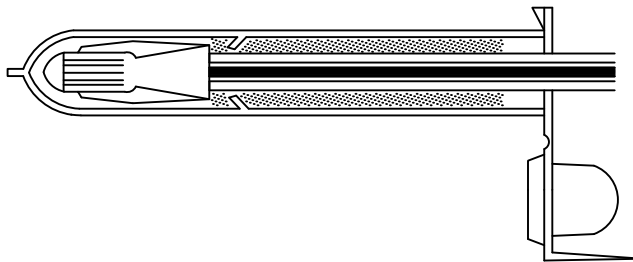
STEP 1: STRIP WIRES 3/4" FROM ENDS.



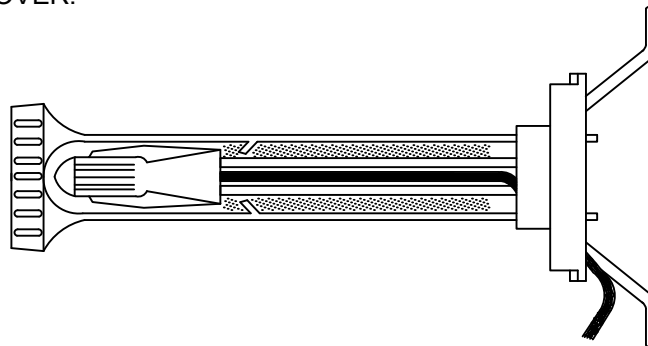
STEP 2: APPLY SCOTCHLOK OR APPROVED EQUAL Y SPRING CONNECTOR IN A CLOCKWISE DIRECTION (FOR CLOCKS ONLY).



STEP 3: INSERT SPLICE TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT BOTTOM OF TUBE.



STEP 4: POSITION WIRES IN WIRE CHANNELS AND CLOSE INSULATOR TUBE COVER.



NOTE: MAXIMUM WIRE SIZES PER CONNECTOR ARE 3 - #4'S OR 2 - #12'S.


(Not To Scale)



**ENGINEERING
DEPARTMENT**

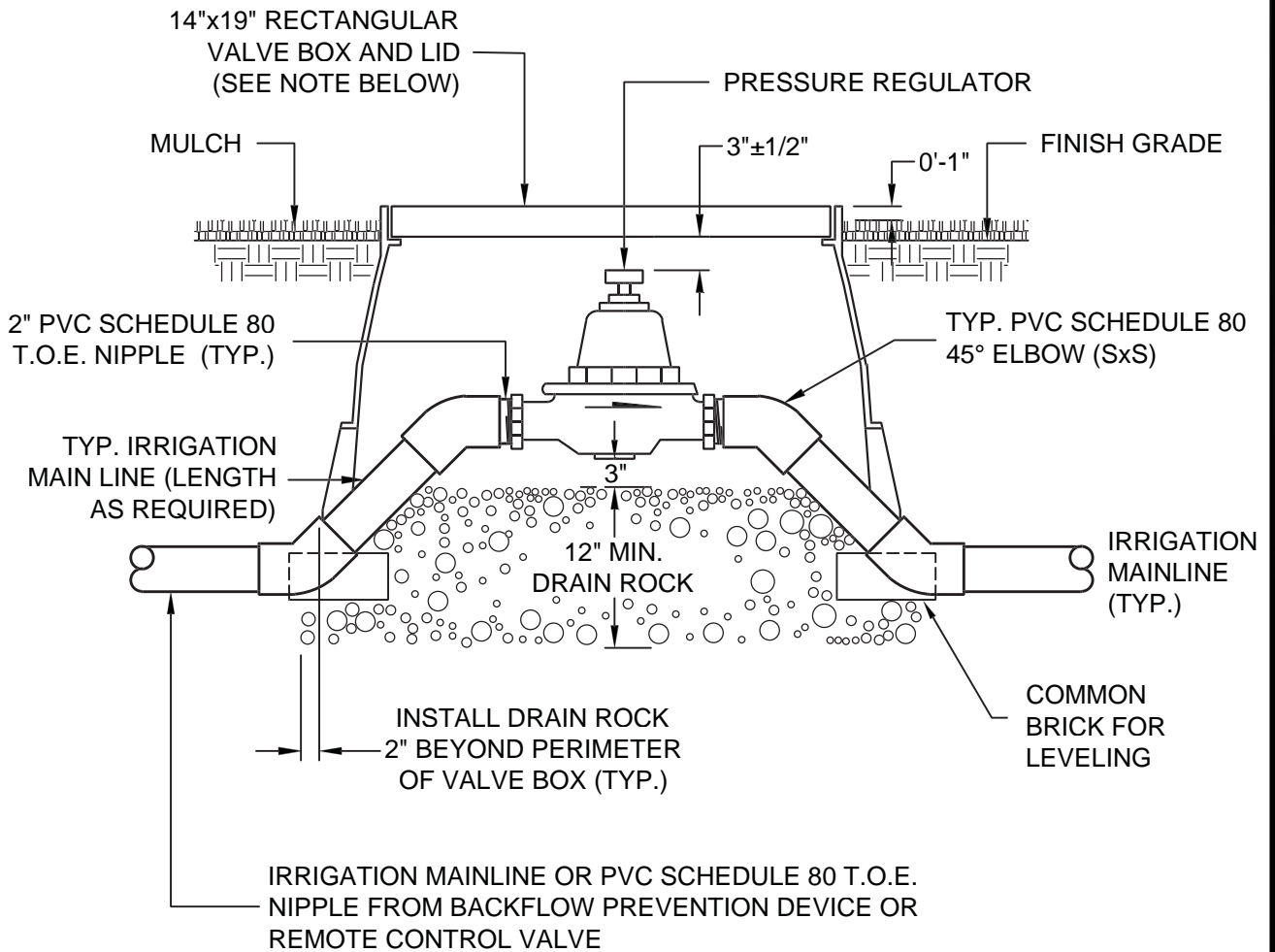


3M DBR/Y-6 WIRE CONNECTION


ALLEN S. BAQUILAR CITY ENGINEER

DATE: JUN. 18, 1999
REVISED: OCT. 23, 2024

SHEET No.
I-12



NOTE:

SET TOP OF BOX FLUSH WITH FINISH GRADE IN TURF AREAS.

(Not To Scale)



**ENGINEERING
DEPARTMENT**

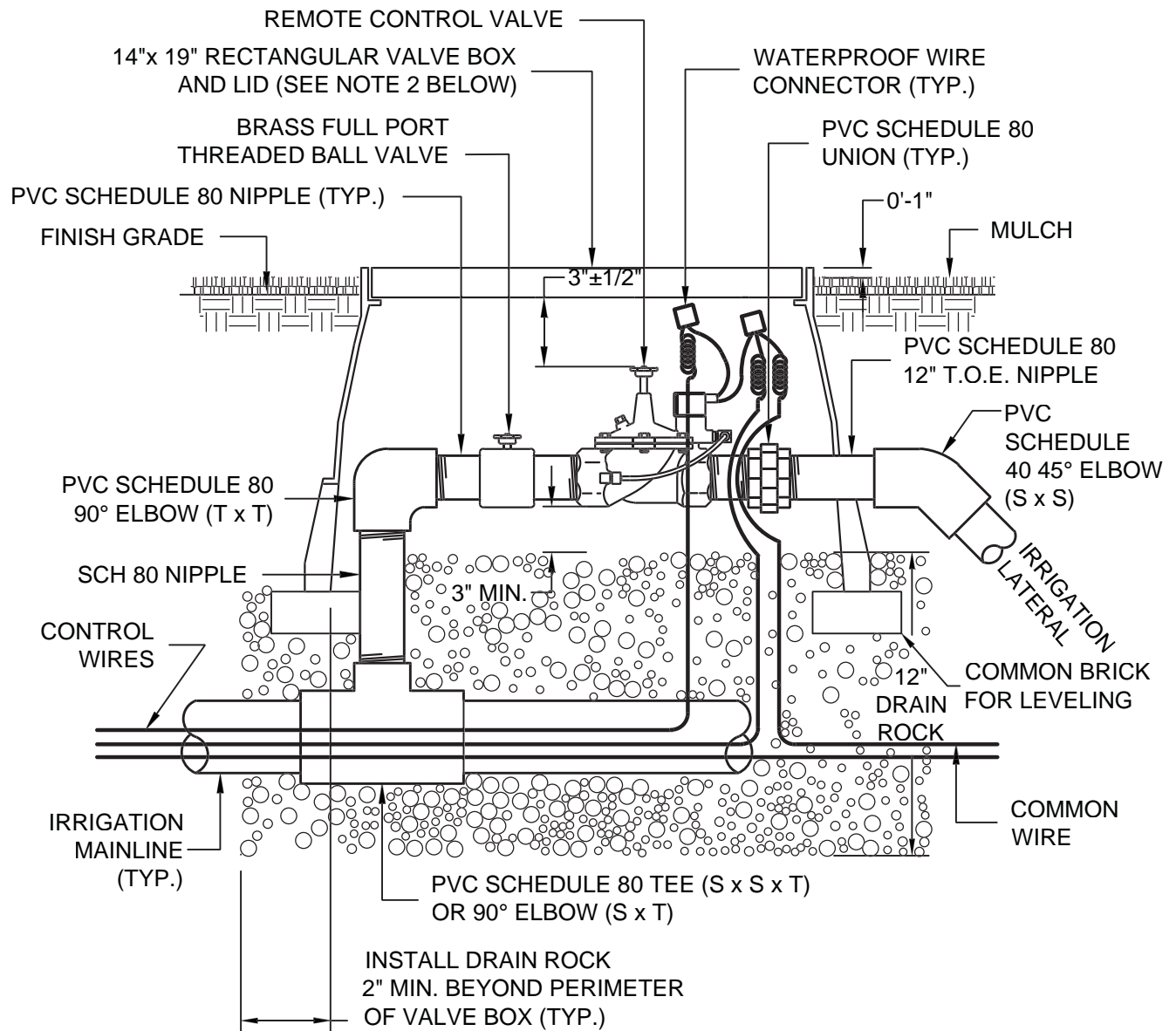


PRESSURE REGULATOR

BALWINDER S. GREWAL CITY ENGINEER

DATE: JULY 12, 2007
REVISED: DEC. 31, 2013

SHEET No.
I-13



NOTES:

1. SET TOP OF BOX FLUSH WITH FINISH GRADE IN TURF AREAS.
2. VALVE NUMBERS SHALL BE HEAT BRANDED ON THE VALVE BOX LID AND TAGGED ON ALL VALVES.
3. WHEN USED WITH RECLAIMED WATER, DESIGNATE PURPLE COLOR-CODING ON APPROPRIATE APPURTENANCE.

(Not To Scale)



**ENGINEERING
DEPARTMENT**

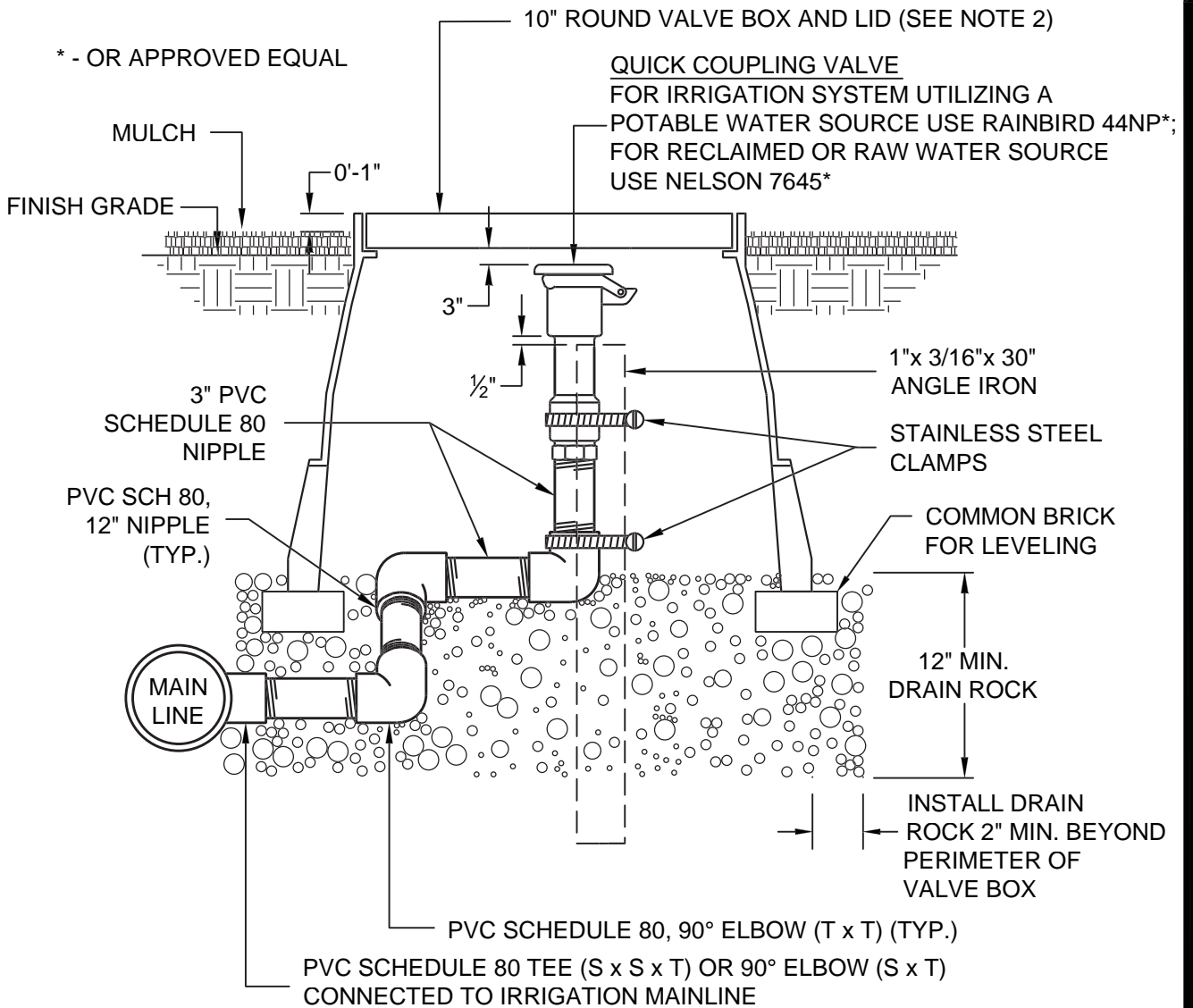


REMOTE CONTROL VALVE

BALWINDER S. GREWAL CITY ENGINEER

DATE: JULY 12, 2007
REVISED: DEC. 31, 2013

SHEET No.
I-14



NOTES:

1. SET TOP OF BOX EVEN WITH FINISH GRADES IN TURF AREAS.
2. VALVE BOX LIDS SHALL BE TAGGED AND HEAT BRANDED WITH STATION NUMBERS.
3. INSTALL STAINLESS STEEL BOLT IN LOCKING COVER.
4. WHEN USED WITH RECLAIMED WATER, DESIGNATE PURPLE COLOR-CODING ON APPROPRIATE APPURTENANCE.

(Not To Scale)



**ENGINEERING
DEPARTMENT**

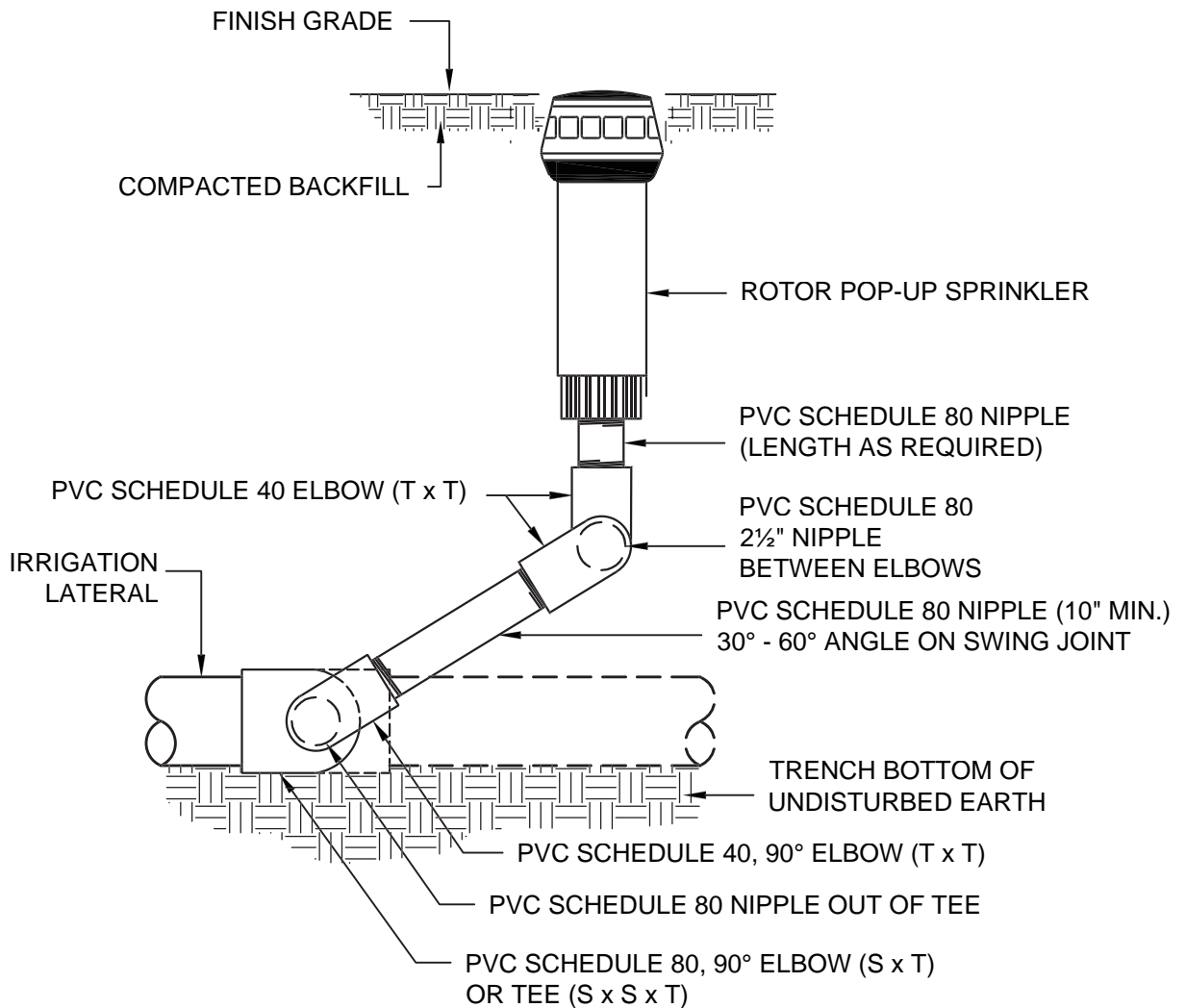


QUICK COUPLING VALVE

BALWINDER S. GREWAL CITY ENGINEER

DATE: JULY 11, 2007
REVISED: DEC. 31, 2013

SHEET No.
I-15



NOTE:

SPRINKLER BODY SHALL BE COLOR-CODED PURPLE.

(Not To Scale)



**ENGINEERING
DEPARTMENT**



ROTARY POP-UP HEAD

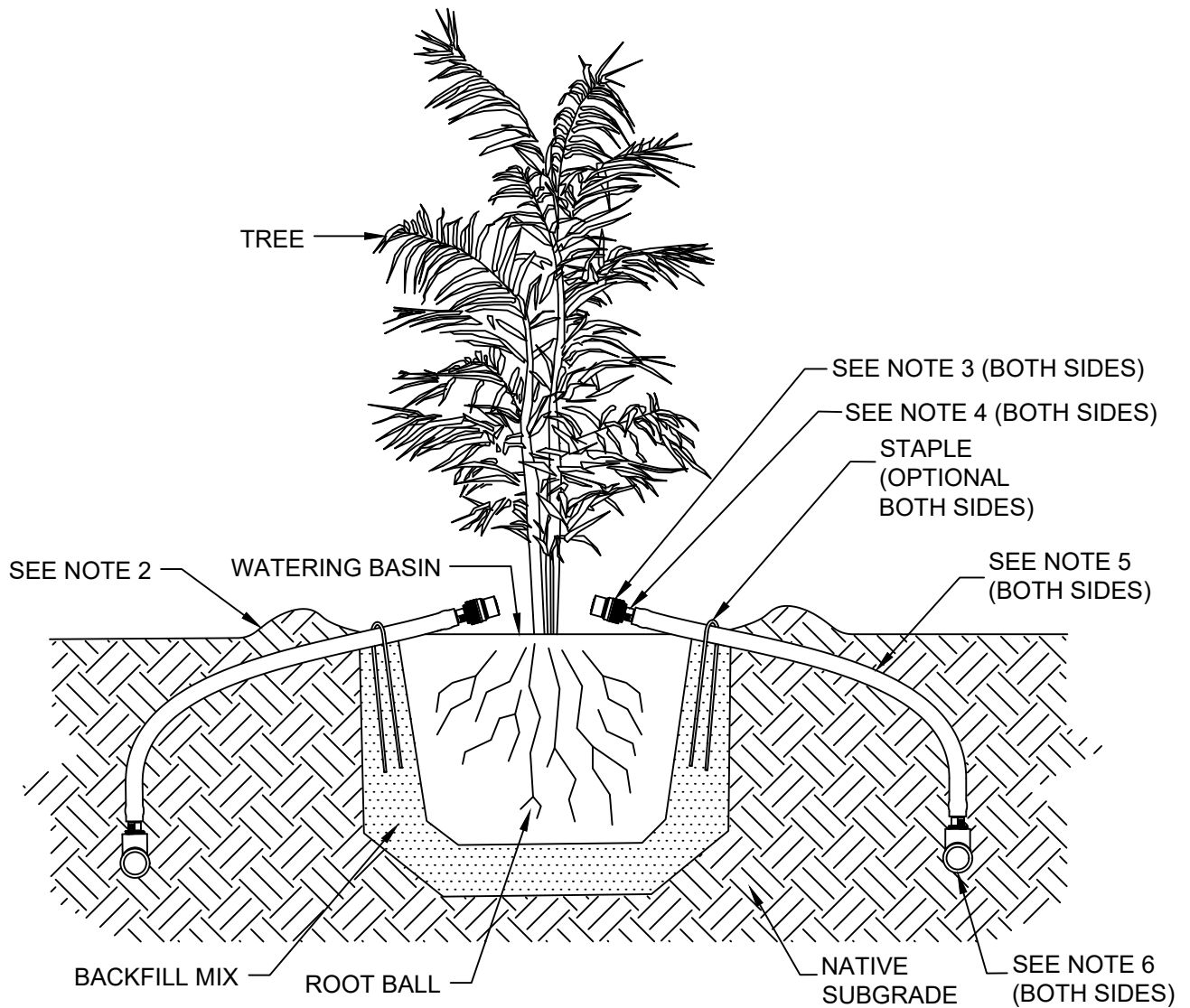
BALWINDER S. GREWAL CITY ENGINEER

DATE: JUNE 20, 2003

REVISED: DEC. 31, 2013

SHEET No.

I-16



NOTES:

1. INSTALL DRIP BUBBLER WITH BUBBLER INSIDE THE TREE WATERING BASIN ON THE UPHILL SIDE OF THE TREE, IF FINISH GRADE IS SLOPED.
2. TREE WATERING BASIN BERM TO BE WELL FORMED AND COMPACTED.
3. TOP OF DRIP BUBBLER TO BE 3" ABOVE TOP OF ROOT BALL.
4. MALE ADAPTER (1/2") PVC SCHEDULE 40.
5. POLYETHYLENE PIPE FOR RECLAIMED WATER. 5' MINIMUM LENGTH EACH SIDE, (2) REQUIRED.
6. PVC SCHEDULE 40 TEE OR ELL FITTING AND LATERAL PIPE.

(Not To Scale)



**ENGINEERING
DEPARTMENT**

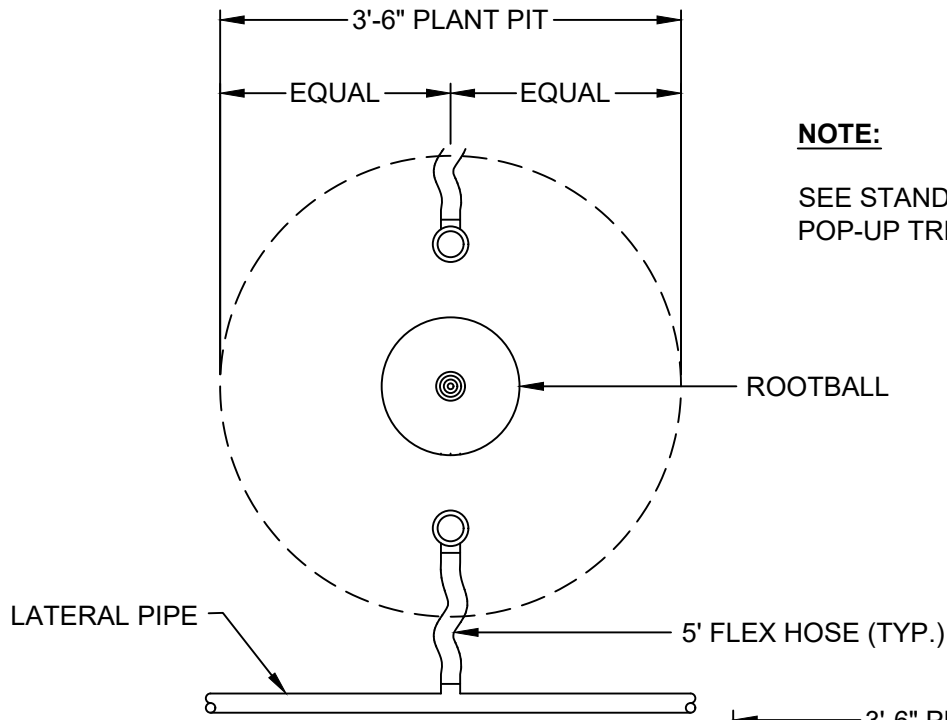


TREE BUBBLER

Allen S. Baquilar
ALLEN S. BAQUILAR CITY ENGINEER

DATE: JUNE 16, 2003
REVISED: SEP. 26, 2024

SHEET No.
I-17



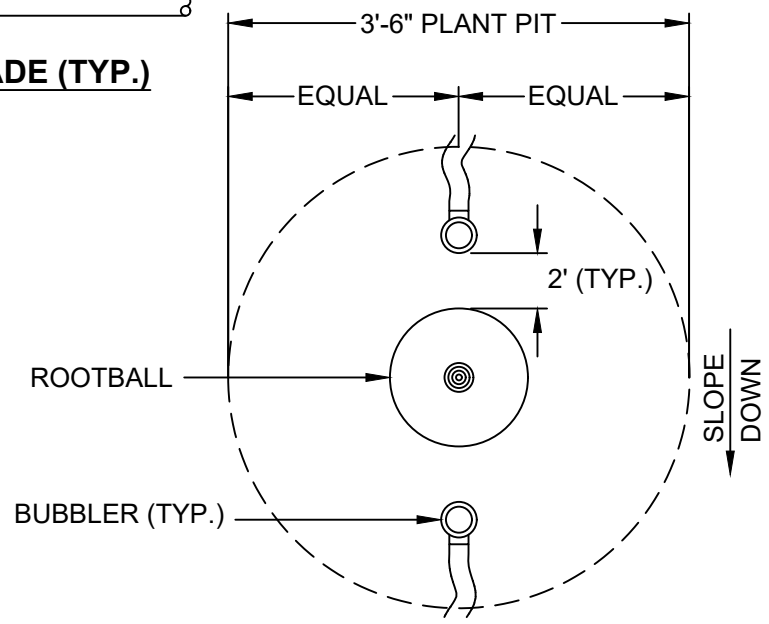
NOTE:

SEE STANDARD PLAN I-17 FOR THE POP-UP TREE BUBBLER.

ON FLAT GRADE (TYP.)

LEGEND:

- TREE TRUNK



ON SLOPES

(Not To Scale)



ENGINEERING DEPARTMENT

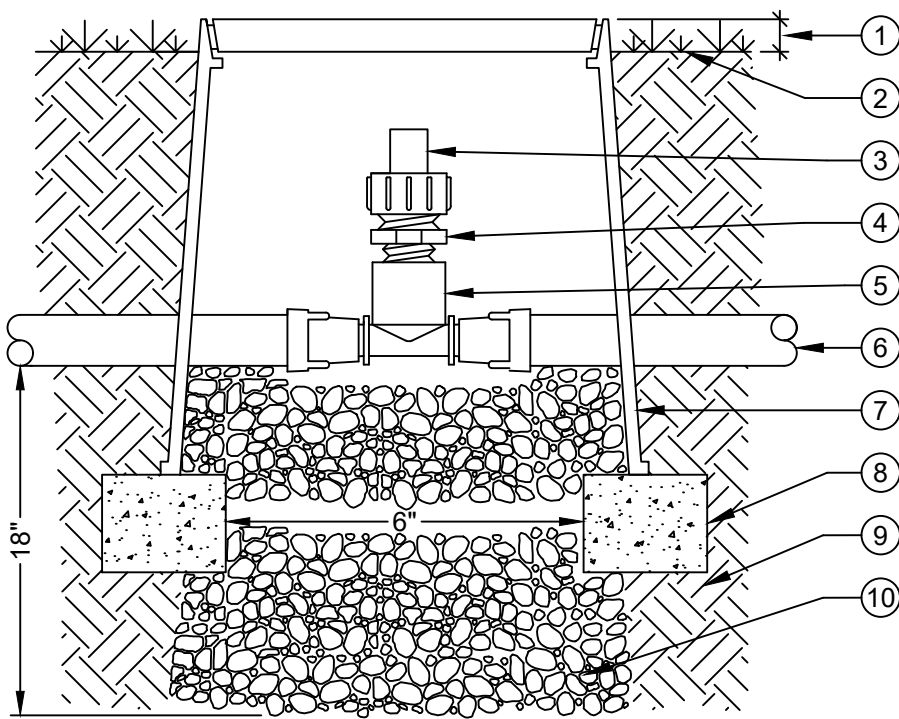


TREE BUBBLER-PLAN VIEW

Allen Baquilar
 ALLEN S. BAQUILAR CITY ENGINEER

DATE: APR. 29, 2005
 REVISED: SEP. 5, 2024

SHEET No.
I-18



- LEGEND:**
- ① 1" ABOVE FINISH GRADE.
 - ② FINISH GRADE.
 - ③ TORO DL2000 FLUSH VALVE (FCH-H-FIPT).
 - ④ PVC SCH 40 REDUCING NIPPLE, 3/4"-1/2" (TxT).
 - ⑤ TORO LOC-EZE X 1/2" FPT TEE (FTF16).
 - ⑥ TORO DL2000 TUBING (RGP-XX-XXX) OR TORO BLANK POLY TUBING (EHD1645-XXX).
 - ⑦ 6" ROUND PLASTIC VALVE BOX . HEAT BRAND "FV" ON LID IN 1" HIGH CHARACTERS.
 - ⑧ BRICK SUPPORTS (2 COMMON BRICKS REQUIRED).
 - ⑨ NATIVE SOIL PER SPECIFICATIONS.
 - ⑩ PEA GRAVEL SUMP (6" x 18").

SECTION/ELEVATION

NOTES:

1. USE ONE FLUSH VALVE FOR EVERY 7 GPM PER ZONE. LOCATE AT LOW POINTS. FLUSH RATE IS 0.8 GPM. FLUSH PRESSURE IS 2 PSI. REFER TO TORO PUBLICATION #ALT111 FOR SPECIFICATIONS.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. DO NOT SCALE DRAWING.
4. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

(Not To Scale)



**ENGINEERING
DEPARTMENT**



FLUSH VALVE

Allen S. Baquilar
ALLEN S. BAQUILAR CITY ENGINEER

DATE: MAY 28, 1999
REVISED: SEP. 9, 2024

SHEET No.
I-19

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(Not To Scale)



ENGINEERING
DEPARTMENT



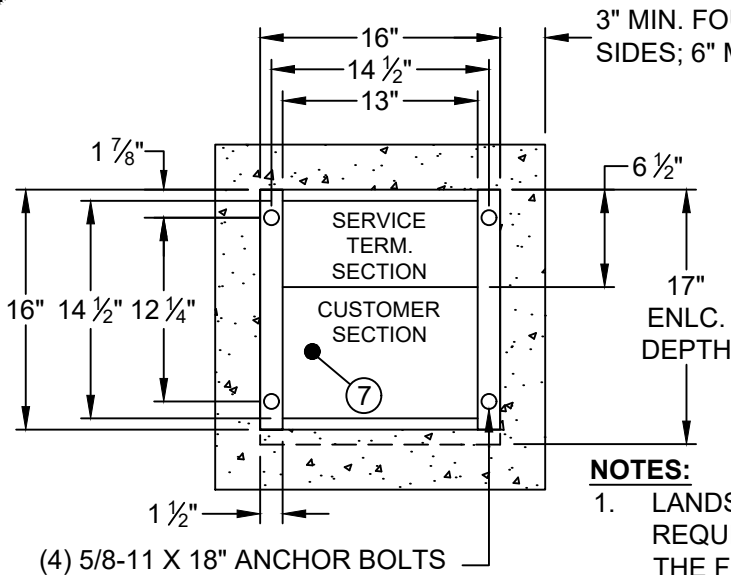

BALWINDER S. GREWAL CITY ENGINEER

DATE:

REVISED:

SHEET No.

I-20



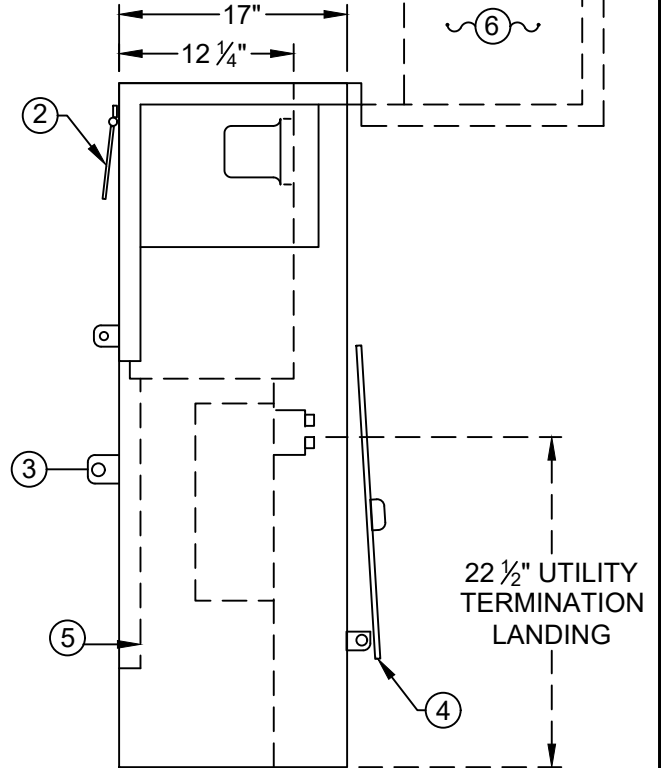
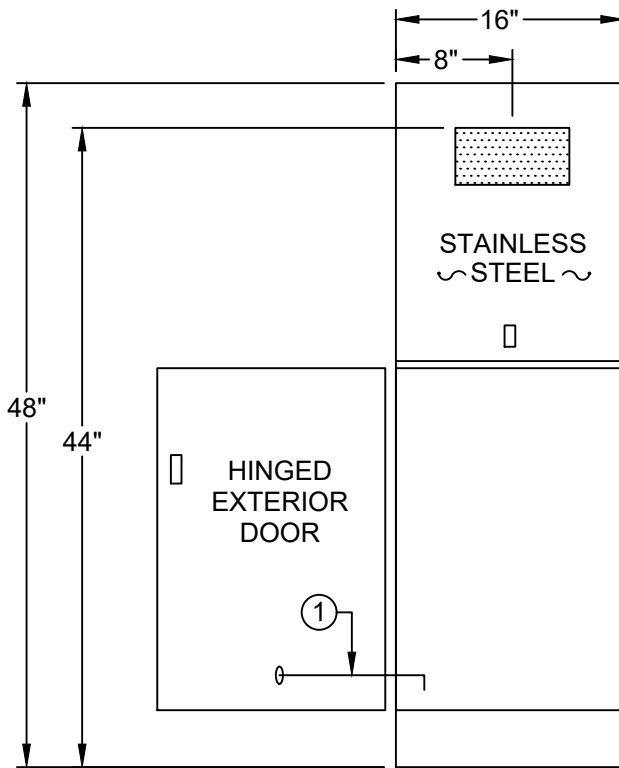
MOUNTING BASE

NOTES:

1. LANDSCAPE SCREENING SHALL BE REQUIRED WITH 36" MIN. CLEARANCE ON THE FRONT AND BACK OF THE ENCLOSURE.
2. SERVICE CABINET SHALL BE TYPE MILBANK OR TESCO CONTROL, INC. BRAND STAINLESS STEEL FOR 100-AMPERE MINIMUM OR APPROVED EQUAL.

LEGEND:

- ① MEANS PROVIDED TO HOLD DOOR IN OPEN POSITION
- ② DEMAND METER RESET COVER WITH WINDOW
- ③ PADLOCK BKT. EXTENDING THRU DOOR FOR SECURITY
- ④ LIFT OFF SERVICE COVER
- ⑤ HINGED DEADFRONT
- ⑥ FULLY HINGED METER/TEST SECTION COVER
- ⑦ GROUND ROD



(Not To Scale)



ENGINEERING DEPARTMENT



ELECTRIC METER PEDESTAL

Allen S. Baquilar
ALLEN S. BAQUILAR

CITY ENGINEER

DATE: JUNE 20, 2003

REVISED: SEP. 11, 2024

SHEET No.

I-21

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**ENGINEERING
DEPARTMENT**




BALWINDER S. GREWAL CITY ENGINEER

DATE:

REVISED:

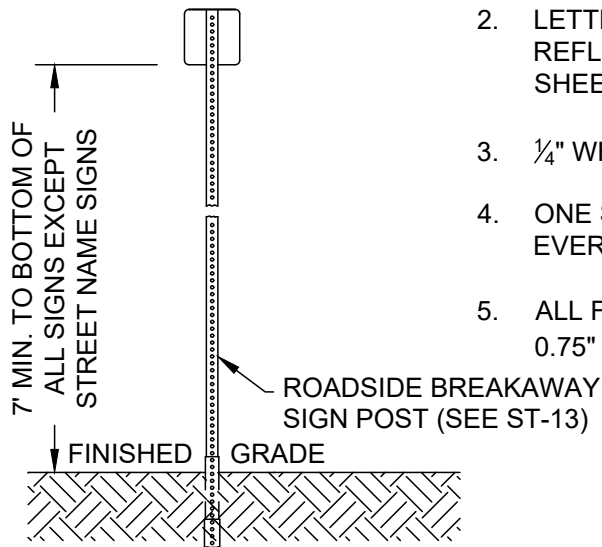
SHEET No.

I-22



NOTES:

1. ALL SIGNS MUST BE STAMPED "PROPERTY OF THE CITY OF BRENTWOOD", AND DATED.
2. LETTER STYLE, CITY LOGO, AND BORDER COLOR ARE REFLECTIVE WHITE AGAINST PURPLE, REFLECTIVE SHEETING.
3. 1/4" WHITE BORDER OFFSET 1/4" FROM EDGE OF SIGN.
4. ONE SIGN REQUIRED AT EACH ENTRANCE AND AT LEAST EVERY 500 FEET WHERE NO-POTABLE WATER IS USED.
5. ALL FONTS ARE HIGHWAY GOTHIC "D". FONT SIZES ARE 0.75" (3/4"), 0.50" (1/2") OR 0.25" (1/4") UPPER AND LOWER CASE.



(Not To Scale)



**ENGINEERING
DEPARTMENT**

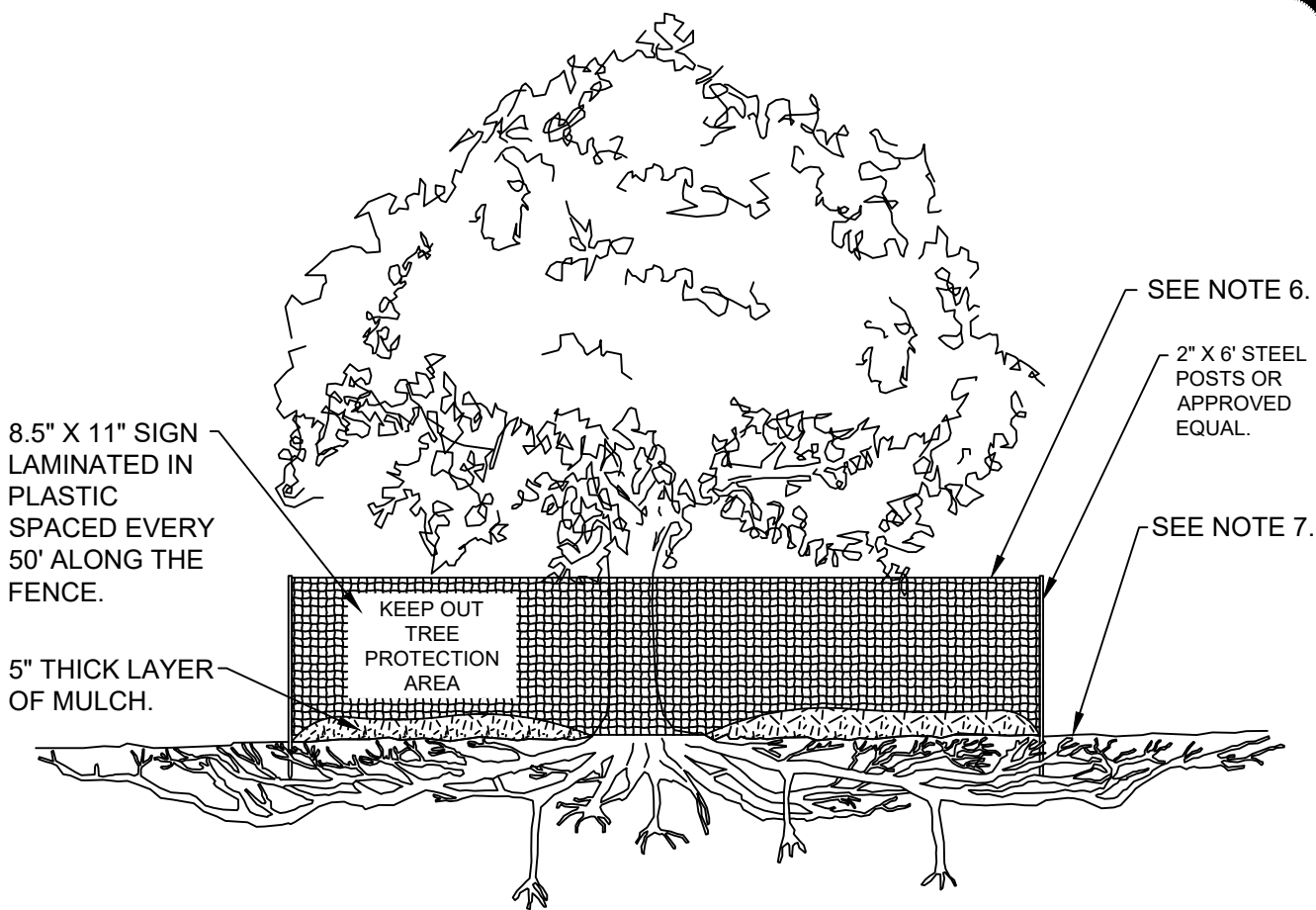


NON-POTABLE WATER SIGNAGE

B. Grewal
BALWINDER S. GREWAL CITY ENGINEER

DATE: JUNE, 2006
REVISED: DEC. 31, 2013

SHEET NO.
I-23



SECTION VIEW

NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
2. IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.
3. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
4. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
5. SEE SITE PREPARATION PLAN FOR ANY MODIFICATION WITH THE TREE PROTECTION AREA.
6. TREE PROTECTION: HIGH DENSITY POLYETHLENE FENCING WITH 3.5" X 1.5" OPENINGS; COLOR-ORANGE. STEEL POSTS INSTALLED AT 8' O.C.
7. MAINTAIN EXISTING GRADE WITH THE TREE PROTECTION FENCE UNLESS OTHERWISE INDICATED ON THE PLANS.

(Not To Scale)



**ENGINEERING
DEPARTMENT**



TREE PROTECTION

Allen S. Baquilar
 ALLEN S. BAQUILAR CITY ENGINEER

DATE: AUG. 27, 2024
 REVISED:

SHEET No.
I-24