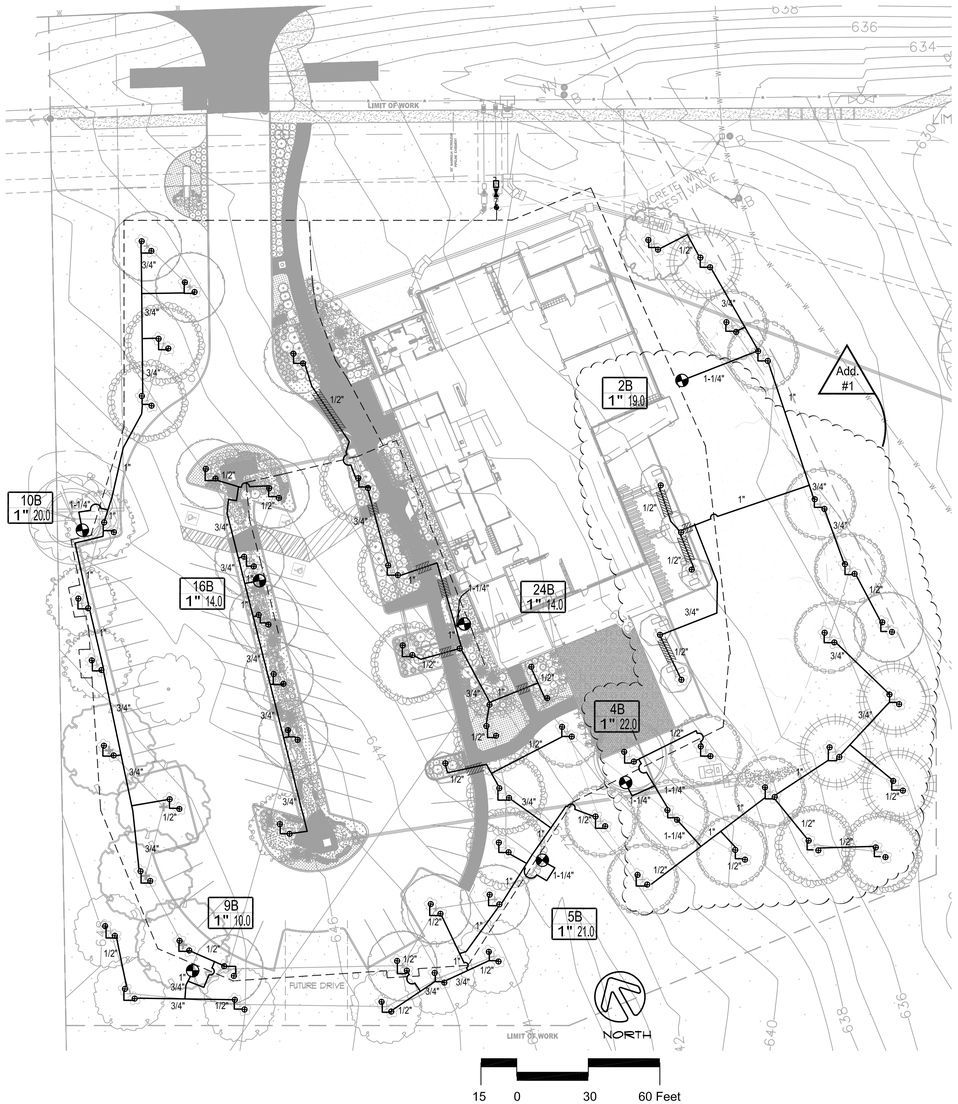
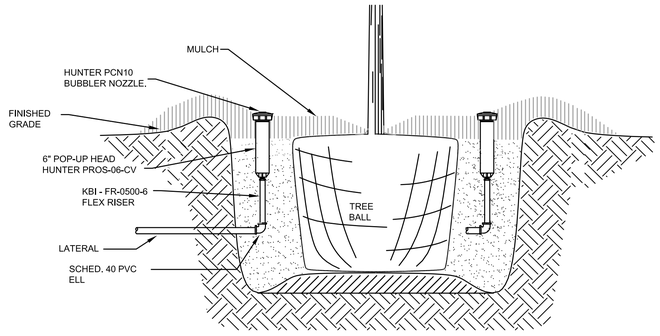
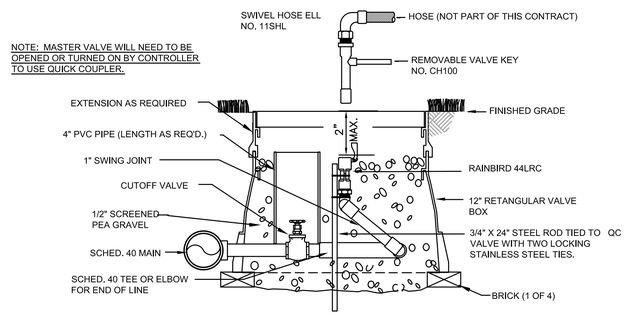


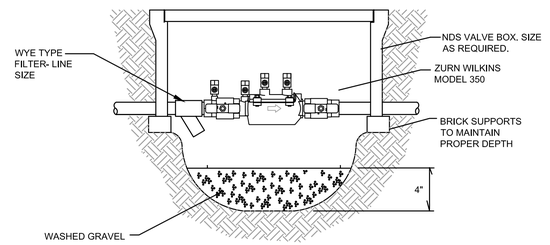
1 TREE BUBBLER PLAN
SCALE - 1"=30'



1 BUBBLERS AT TREE - SECTION
NOT TO SCALE



2 QUICK-COUPLING VALVE DETAIL
NOT TO SCALE



3 DOUBLE CHECK VALVE ASSEMBLY
NOT TO SCALE

MOST CRITICAL ZONE CHART	
PRESSURE REQUIREMENT CALCULATIONS AT ZONE NO.3M	
DESIGN STATISTICS FOR CALCULATIONS	
SPRINKLER HEAD REQUIREMENT:	40 PSI
TOTAL ZONE FLOW:	21.6 GPM
ELECTRIC VALVE SIZE:	
STATIC PRESSURE LESS 10%:	68 PSI
ACCUMULATIVE LOSSES FROM WATER SOURCE TO FURTHEST HEAD	
ZONE PIPE/FITTING LOSS:	1.4 PSI
1" ELECTRIC VALVE LOSS:	3 PSI
ELEVATION NET GAIN/LOSS:	0 PSI
SYSTEM MAINLINE LOSS:	0.5 PSI
SYSTEM MAIN LOOP LOSS:	2.2 PSI
BACKFLOW PREVENTER LOSS:	5 PSI
WATER METER LOSS:	2.6 PSI
1" MASTER VALVE LOSS:	3 PSI
TYPE K COPPER SERVICE LOSS:	2.5 PSI
TOTAL NET LOSS:	20.2 PSI
DESIGN PRESSURE:	60.2 PSI
NOTE:	
IF DESIGN PRESSURE IS LESS THAN STATIC PRESSURE, CONTACT IRRIGATION CONSULTANT.	

Scheduling Controller

Typical Weekly, Based on Precipitation Rate

Total Hours of Operation 22.06

ZONE TYPE	Precipitation Rate (in/hr)	Water Desired Inch/Week	Time per cycle (min)	No. of Zones	Total Minutes	Total Hours
MP ROTATOR	0.45	1.00	133.33	6	800.0	13.33
SHRUB	2.28	1.00	26.32	10	263.2	4.4
TREE BUBBLER	3.58	1.00	16.8	7	117.3	2.0
DRIP	0.42	1.00	142.9	1	142.9	2.4

NOTE:
IT WILL BE NECESSARY TO DIVIDE TIME INTO 2 TO 3 CYCLES TO MINIMIZE RUNOFF. A TYPICAL SCHEDULE WOULD ALLOW WATERING TO OCCUR TWO DAYS PER WEEK. TOTAL WATERIN TIME WOUD BE DIVIDED BY THE NUMBER OF WATERING DAYS. THIS SCHEDULE IS DESIGNED FOR SUMMER WATER USAGE. CONTRACTOR RESPONSIBLE FOR WATERING SCHEDULE DURING ESTABLISHMENT. FOLLOW LOCAL ORDINANCES DURING DROUGHT RESTRICTIONS

GENERAL NOTES

1. SPRINKLER LINES AS SHOWN ARE DIAGRAMMATIC BUT SHOULD BE REASONABLY FOLLOWED. LOCATIONS OF SPRINKLER HEADS SHALL BE ESTABLISHED BY THE CONTRACTOR BUT DESIGN SPACING MAY NOT BE EXCEEDED WITHOUT AUTHORIZATION FROM LANDSCAPE ARCH.

2. INSTALL ALL VALVES IN 12" RECTANGULAR VALVE BOXES. VALVE SHOULD BE CENTERED IN BOX TO ALLOW EASY ACCESS TO SOLENOID ASSEMBLY AND COVER BOLTS.

3. ZONE PIPE SIZING IS PARTICULARLY IMPORTANT ON PROJECTS WHERE LONG RUNS ARE NECESSARY. "RULE OF THUMB" SIZING IS NOT ALLOWED ON THIS PROJECT. SIZING AS SHOWN MUST BE FOLLOWED.

4. INSTALL RAIN & FREEZE SWITCHES IN AN ELEVATED LOCATION CLEAR OF TREES OR OTHER OBSTRUCTIONS. INSTALL IN LOCATION EXPOSED TO EXTERIOR AMBIENT CONDITION.

5. ALLOW A MINIMUM OF 4" CLEARANCE FROM ANY STRUCTURE WHEN INSTALLING SPRINKLER HEADS. THIS INCLUDES SIDEWALKS, CURBS, BUILDINGS, ETC..

6. INSTALL SLEEVING SUCH THAT A MINIMUM OF 6" EXTENDS BEYOND CURBS, WALKS, OR WALLS.

7. AFTER INSTALLATION SYSTEM MUST BE BALANCED BY ADJUSTING FLOW CONTROLS ON VALVES. SPRAY ZONES SHALL BE ADJUSTED TO 25 PSI-30 PSI AT THE FURTHEST HEAD IN EACH ZONE.

8. SYSTEM SHALL REQUIRE MINIMUM OF 61 LBS. STATIC PRESSURE FOR SYSTEM TO OPERATE PROPERLY. IRRIGATION CONTRACTOR SHALL NOTIFY SPRINKLER SYSTEM DESIGNER OF PRESSURE DEFICIENCIES OR ANY OTHER SITE PROBLEMS THAT MAY ALTER THE EFFECTIVENESS OF THE SYSTEM.

9. ONLY HAND TRENCHING IS ALLOWED WITHIN THE ROOT PROTECTION ZONES OF EXISTING ZONES. NO CUTTING OF ROOTS LARGER THAN 2 INCHES.

GARZA CONSULTING
IRRIGATION DESIGN
PLANNING & COST ANALYSIS
P.O. BOX 681974
SAN ANTONIO, TEXAS
PHONE(210) 490-1191

LPA
t. 210.829.1730
e. lpa@lpainc.com
p. 210.829.1737
w. lpainc.com
114 East Carrillos Street
San Antonio, Texas 78204

LAWRENCE C. CLARK
LANDSCAPE ARCHITECT
1211
TX REGISTRATION NO.
2014-10-17
DATE

Landscape Architecture
Urban Design
Planning
830 North Alamo Street
San Antonio, Texas 78215
210-892-9221
www.bwdesign.com
BENDER WELLS CLARK DESIGN

DISTRICT 2 BRANCH LIBRARY
U.S. HWY 87, SAN ANTONIO, TEXAS 78222
Developed for CITY OF SAN ANTONIO

This set of plans and specifications as instruments of service is and shall remain the property of LPA, INC. (LPA) whether the project for which they are made is executed or not. The reproduction, publication or use of these plans and specifications in any manner without the express written consent of LPA, INC. (LPA) is prohibited. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.
Project documents depict the design intent of work and are not intended to be construction documents. Contractor shall verify and coordinate all conditions and dimensions in the field and LPA's Consultants shall not be responsible for any discrepancies between project documents and field conditions existing prior to commencement of work.
© Copyright 2014

Revision	Date

Submittal	Date
ADDENDUM #1	11/07/2014

Job. No.	Project Number
Date	2014-10-17
Checked by	LCC
Scale	

TREE BUBBLER PLAN

IR1.2

MATCHLINE - SEE SHT. IR1.0

17S
1" 20.8

18S
1" 20.3

20S
1" 17.6

21S
1" 18.0

22S
1" 14.0

23S
1" 22.0

3M
1" 19.9

6M
1" 19.6

7M
1" 20.2

Add. #1

FINAL CONTROLLER LOCATION TO BE DETERMINED BY OWNER. PROVIDE CONDUIT FOR ALL WIRING ABOVE GRADE. ET SENSOR TO BE INSTALLED NEAR CONTROLLER, MINIMUM 10FT ABOVE GROUND. CONTROLLER TO BE HARD WIRED TO POWER SOURCE.

1-1/2" SCHD MAINLINE LOOP

FUTURE DRIVE

NORTH

5 0 10 20 Feet

1 IRRIGATION PLAN
SCALE - 1"=10'

GARZA CONSULTING
IRRIGATION DESIGN
PLANNING & COST ANALYSIS
P.O. BOX 681974
SAN ANTONIO, TEXAS
PHONE(210) 490-1191

LPA
t. 210.829.1730
e. lpa@lpainc.com
p. 210.829.1737
w. lpainc.com
114 East Carrollton Street
San Antonio, Texas 78204

LAWRENCE C. CLARK
LANDSCAPE ARCHITECT
1211
TX REGISTRATION NO.
2014-10-17
DATE

REGISTERED LANDSCAPE ARCHITECT
LAWRENCE C. CLARK
1211
STATE OF TEXAS

Landscape Architecture
Urban Design
Planning
830 North Alamo Street
San Antonio, Texas 78215
210.892.9221
www.bwdesign.com
BENDER WELLS CLARK DESIGN

DISTRICT 2 BRANCH LIBRARY

U.S. HWY 87, SAN ANTONIO, TEXAS 78222

Developed for CITY OF SAN ANTONIO

This set of plans, documents and all ideas, designs, arrangements and plans indicated or represented thereon, is the property of LPA, INC., (LPA) and cannot be used in any form or manner whatsoever without the express written permission of LPA, INC. LPA's consultants shall not be responsible for any reproduction or modification of these documents by any party other than LPA, INC. LPA's consultants. Unauthorized reproduction or modification of these documents by any party shall indemnify and hold harmless LPA, INC. LPA's consultants from any claim, loss or damage arising therefrom.

Project documents describe design intent of work and are not construction documents. Project documents are property of LPA's Consultants. Unauthorized reproduction or modification of these documents by any party other than LPA's Consultants shall indemnify and hold harmless LPA's Consultants from any claim, loss or damage arising therefrom. Dimensions govern over scaling. Contractor shall verify all dimensions, conditions and notify LPA's Consultants of discrepancies between project documents and existing conditions.

© Copyright 2014

Revision	Date

Submittal	Date
ADDENDUM #1	11/07/2014

Job. No.	Project Number
Date	2014-10-17
Checked by	LCC
Scale	

IRRIGATION PLAN

IR1.1