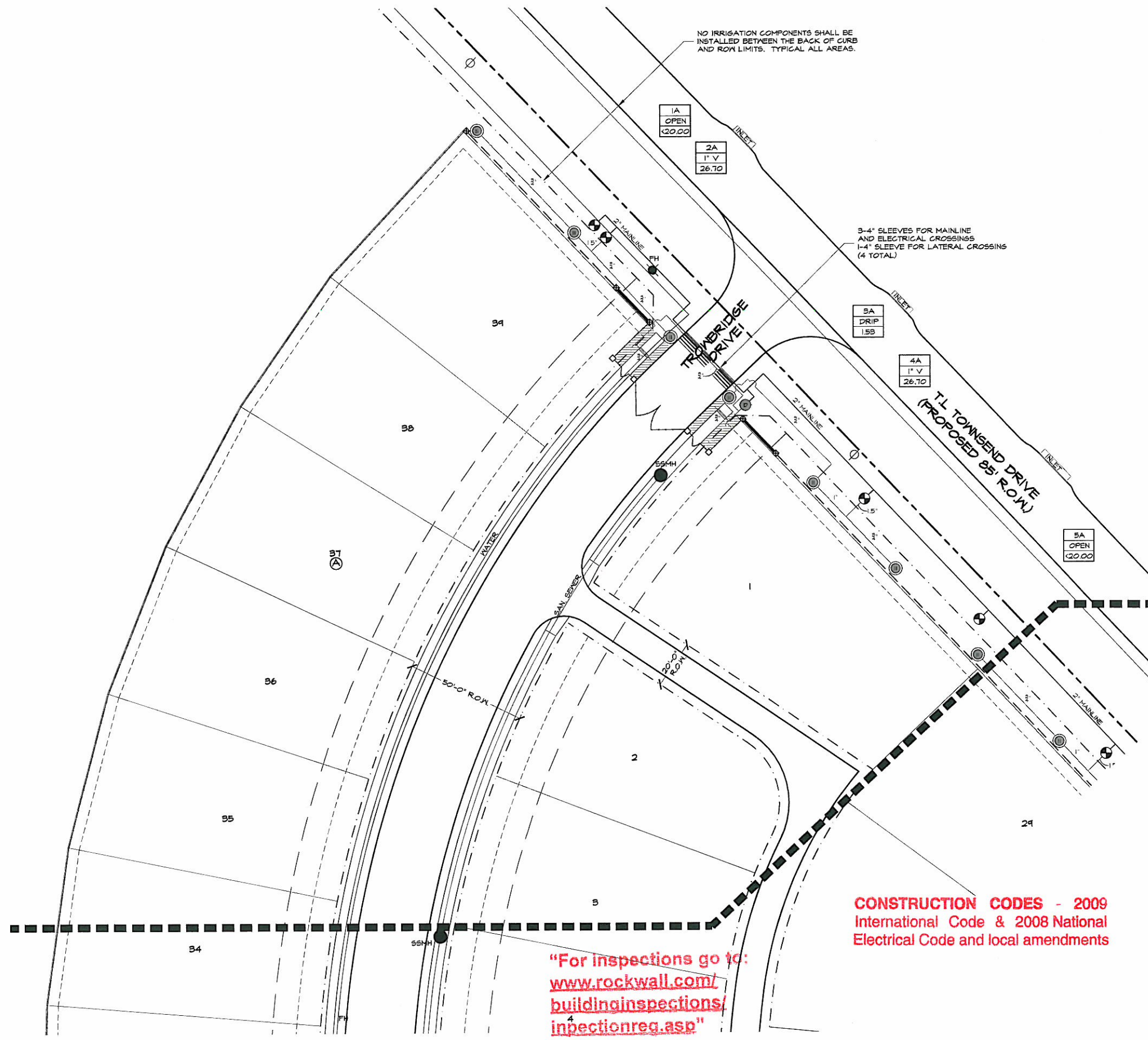


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NO IRRIGATION COMPONENTS SHALL BE INSTALLED BETWEEN THE BACK OF CURB AND ROW LIMITS. TYPICAL ALL AREAS.

3-4" SLEEVES FOR MAINLINE AND ELECTRICAL CROSSINGS  
1-4" SLEEVE FOR LATERAL CROSSING (4 TOTAL)

**CITY OF ROCKWALL**  
**APPROVED FOR CONSTRUCTION**  
**SUBJECT TO FIELD INSPECTION AND CODE COMPLIANCE**  
 DATE: 4-30-14 BY: [Signature]

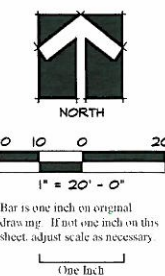
**CONSTRUCTION CODES - 2009**  
International Code & 2008 National Electrical Code and local amendments

**BUILDER'S COPY**  
Keep on Job Site At All Times For Inspector's Use

**"For inspections go to:**  
[www.rockwall.com/buildinginspections/inspectionreg.asp](http://www.rockwall.com/buildinginspections/inspectionreg.asp)"

ZONE VALVES LABELED AS 'OPEN' ARE INTENDED FOR THE USE OF SUPPLYING HUNTER AFB-ADJ TREE BUBBLERS ON EACH PROPOSED TREE. IRRIGATION CONTRACTOR SHALL FIELD VERIFY THAT THESE ZONES DO NOT EXCEED 20 GALLONS PER MINUTE. THE IRRIGATION CONTRACTOR SHALL STAKE EACH TREE BUBBLER HEAD LOCATION AND RECEIVE APPROVAL FROM THE OWNER AND/OR THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

**STUDIO 13 DESIGN GROUP**  
 Studio 13 Design Group, PLLC  
 519 Bennett Lane, Suite 203  
 Lewisville, Texas 75057  
 469-635-1900  
 TBAE Firm #BR641



**LANDSCAPE AND SCREENING**

Irrigation Plan  
Townsend Village  
City of Rockwall, Rockwall County, Texas

PLAN REVIEW REVISIONS	BY	DATE
Revised per City Comments	CU	4-30-2014

PROJECT: LDC028  
 SHEET: IR1 of 5

Plotted by: CJohnson Plot Date: 4/30/2014 8:03 AM

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Studio 13 Design Group, PLLC  
519 Bennett Lane, Suite 201  
Lewisville, Texas 75057  
469-655-1900

TRAFFIC Firm #08643



April 30, 2014



20 10 0 20  
1" = 20' - 0"  
Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.  
One Inch

LANDSCAPE AND SCREENING

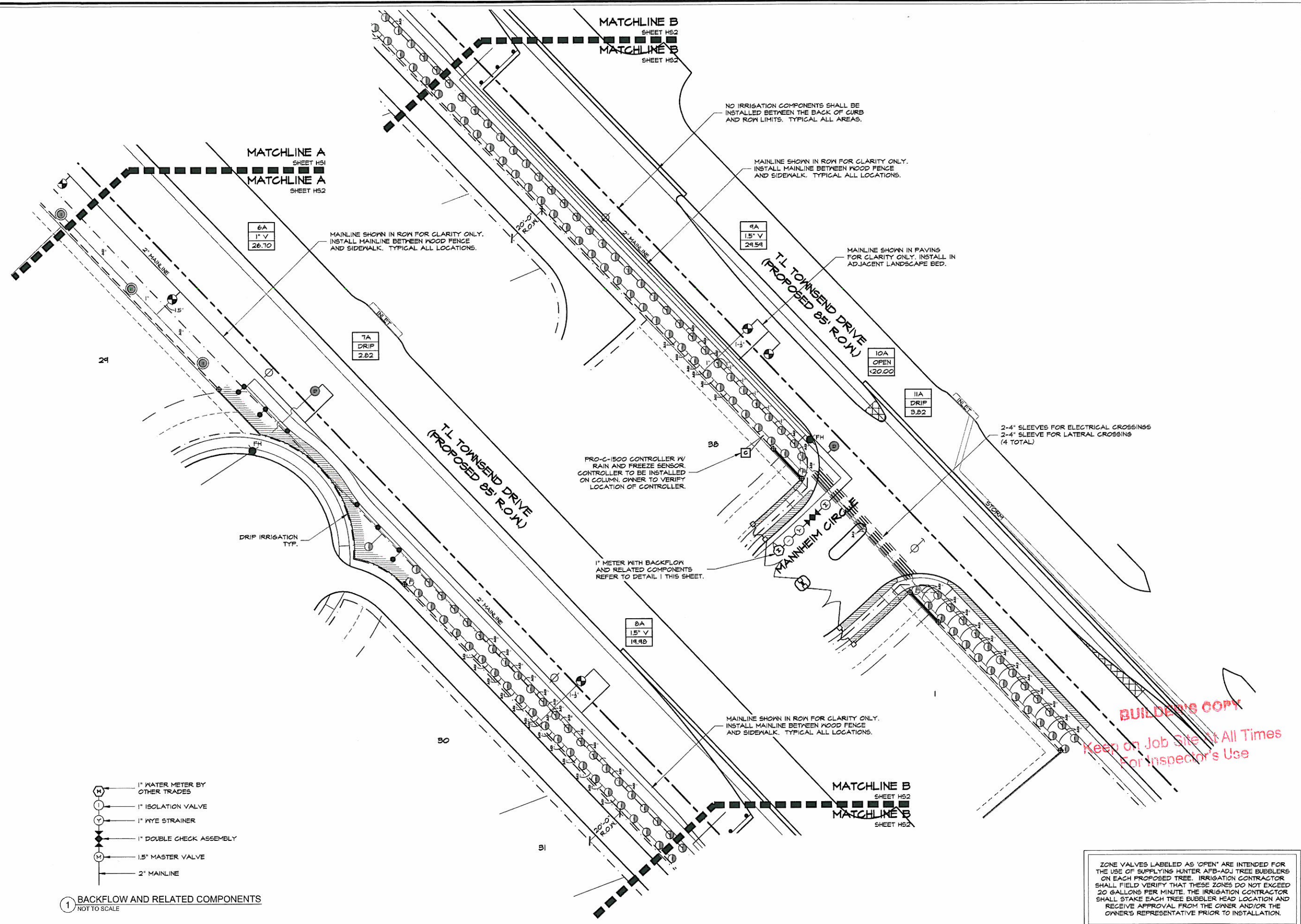
Irrigation Plan  
Townsend Village

City of Rockwall, Rockwall County, Texas

#	DATE	BY	REVISIONS
1	4-30-2014	CLJ	Revised per City Comments

PROJECT  
LDC028

SHEET  
IR2 of 5



- 1 BACKFLOW AND RELATED COMPONENTS  
NOT TO SCALE
- 1" WATER METER BY OTHER TRADES
  - 1" ISOLATION VALVE
  - 1" WYE STRAINER
  - 1" DOUBLE CHECK ASSEMBLY
  - 1.5" MASTER VALVE
  - 2" MAINLINE

**BUILDER'S COPY**  
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ZONE VALVES LABELED AS 'OPEN' ARE INTENDED FOR THE USE OF SUPPLYING HUNTER AFB-ADJ TREE BUBBLERS ON EACH PROPOSED TREE. IRRIGATION CONTRACTOR SHALL FIELD VERIFY THAT THESE ZONES DO NOT EXCEED 20 GALLONS PER MINUTE. THE IRRIGATION CONTRACTOR SHALL STAKE EACH TREE BUBBLER HEAD LOCATION AND RECEIVE APPROVAL FROM THE OWNER AND/OR THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.



**IRRIGATION LEGEND AND SCHEDULE**

SYM	DESCRIPTION	MANUFACTURER	MODEL	SIZE / NOZZLE	NOTES
	AUTOMATIC CONTROLLER	HUNTER	Refer to Plan for Size	N/A	INSTALL PER MANUFACTURER'S STANDARDS. IN ADDITION, INSTALL SOLAR-SYNC SYSTEM BY HUNTER.
	DRIP IRRIGATION CONTROL VALVE	HUNTER	ICZ-101	1"	INSTALL PER DETAIL IN 10" ROUND BOX w/ BOLT DOWN LID. ROUT AND PAINT VALVE NUMBER ON LID.
	DRIP IRRIGATION	HUNTER	PLD-06-18	N/A	INSTALL PER DETAIL w/ 40 PSI AT OUTFLOW OF DRIP ZONE VALVE.
	DRIP IRRIGATION	HUNTER	AFB-ADJ BUBBLER	1/2"	INSTALL PER DETAIL w/ 40 PSI AT BASE OF HEAD. INSTALL ON ALL PROPOSED TREES. SEE LANDSCAPE PLANS.
	REMOTE CONTROL VALVE	HUNTER	ICV-1016 ICV-1516	Refer to Plan for Size	INSTALL PER DETAIL IN 10" ROUND PENTEK VALVE BOX WITH BOLT DOWN LID. ROUT AND PAINT VALVE NUMBER ON LID.
	LAWN ROTATOR	HUNTER	MP ROTATOR	MP1000, MP2000, MP3000	INSTALL PER DETAIL w/ 40 PSI AT BASE OF HEAD. INSTALL LASCO P-120T SPIN JOINTS ON ALL SPRAY BODIES. INSTALL NOZZLES ON 4" PFS-40 OR 12" PFS-12 SPRAY BODIES.
	ROTOR HEAD	HUNTER	PSP SERIES	#4, #6, #11 NOZZLE	INSTALL PER DETAIL w/ 40 PSI AT BASE OF HEAD. INSTALL LASCO P-120T SPIN JOINTS ON ALL ROTORS.
	WATER METER	----	PER CITY	Refer to Plan for Size	INSTALLED BY GENERAL CONTRACTOR
	DOUBLE CHECK VALVE	Fabco	850-BV Series	Refer to Plan for Size	FURNISH AND INSTALL PER LOCAL CODE BY LICENSED IRRIGATION CONTRACTOR.
	ISOLATION VALVE	Nisco	*T-115	Line Size	INSTALL PER DETAIL IN 12"x11" PENTEK VALVE BOX WITH BOLT DOWN LID.
	HYE STRAINER	Fabco	*850	Refer to Plan for Size	INSTALL PER DETAIL IN 12"x11" PENTEK VALVE BOX WITH BOLT DOWN LID.
	MASTER VALVE	Hunter	ICV-1016 ICV-1516	Refer to Plan for Size	INSTALL PER DETAIL IN 12"x11" PENTEK VALVE BOX WITH BOLT DOWN LID.
	IRRIGATION SLEEVE	----	SCH. 40 w/ 12 GA. PULL WIRE IN SLEEVE	Refer to Plan for Size	DRIVEWAY SLEEVES INSTALLED BY GENERAL CONTRACTOR. SIDEWALK SLEEVES INSTALLED BY IRRIGATION CONTRACTOR.
	IRRIGATION MAIN LINE	----	SCH. 40	Refer to Plan for Size	18" INSTALLATION DEPTH.
	IRRIGATION LATERAL LINE	----	CLASS 200	Refer to Plan for Size	12" INSTALLATION DEPTH STANDARD. 18" INSTALLATION DEPTH UNDER PAVING.

PROGRAM AND STATION NUMBER FOR AUTOMATIC CONTROLLER  
 VALVE SIZE IN INCHES  
 GALLONS PER MINUTE, PER VALVE

**IRRIGATION NOTES**

- PROVIDE A COMPLETE, FUNCTIONING AUTOMATIC IRRIGATION SYSTEM INCLUDING LABOR, MATERIALS, FEES, TAXES, EQUIPMENT, AND OTHER COSTS INCIDENTAL TO ACCOMPLISHING WORK.
- ACQUIRE WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT OR LICENSED IRRIGATOR FOR MATERIAL SUBSTITUTES PRIOR TO BEGINNING INSTALLATION.
- FORTY EIGHT (48) HOURS BEFORE IRRIGATION CONSTRUCTION BEGINS, IRRIGATION CONTRACTOR MUST CALL (800) DEG-TESS AND IS RESPONSIBLE FOR LOCATING EXISTING UNDERGROUND UTILITIES AND/OR OBSTACLES PRIOR TO BEGINNING WORK. ANY DAMAGE TO UTILITIES AND/OR FINISHES FROM INFERIOR WORKMANSHIP BY THE IRRIGATION CONTRACTOR SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
- PIPING IS DIAGRAMMATIC AND SHOWN FOR CLARITY ONLY. ADJUST AS REQUIRED FOR EXISTING UTILITIES, OBSTRUCTIONS, TREE ROOT BALLS, ETC. PIPING AND VALVES SHOWN IN PAVING FOR CLARITY ONLY AND SHALL BE INSTALLED IN ADJACENT LANDSCAPE AREA.
- COORDINATE SLEEVE AND CONDUIT REQUIREMENTS WITH GENERAL CONTRACTOR. IRRIGATION SLEEVES SHALL BE AS FOLLOWS:
  - SLEEVES INTENDED FOR LATERAL LINES ARE TO BE ONE-FOUR INCH SLEEVE AND ARE TO BE NO MORE THAN A DEPTH OF TWO FEET BELOW TOP OF CURB. SLEEVES SHOULD EXTEND A MINIMUM OF 2'-0" BEYOND BACK OF CURB.
  - SLEEVES INTENDED FOR THE 2" MAINLINE ARE TO BE TWO-FOUR INCH SLEEVES SIDE BY SIDE AND ARE TO BE NO MORE THAN A DEPTH OF TWO FEET BELOW TOP OF CURB. SLEEVES SHOULD EXTEND A MINIMUM OF 2'-0" BEYOND BACK OF CURB.
- LOCATE EACH END OF IRRIGATION SLEEVES DIMENSIONALLY ON THE RECORD 'AS BUILT' DRAWINGS.
- THE IRRIGATION CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE IRRIGATION SYSTEM WITH THE LANDSCAPE CONTRACTOR TO ENSURE ALL PLANT MATERIAL WILL BE WATERED IN ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS.
- THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO PLANT MATERIAL DUE TO SYSTEM FAILURE FROM INFERIOR WORKMANSHIP FOR THE DURATION OF THE INSTALLATION OF PLANT MATERIAL AND MAINTENANCE PERIOD FOLLOWING INSTALLATION.
- THE IRRIGATION CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY TO HAND DIG WITHIN ALL EXISTING TREE DRIFLINE ZONES AT NO ADDITIONAL COST TO THE OWNER. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE TO STAKE AND RECEIVE APPROVAL FROM ALL DISCIPLINES PRIOR TO AN TRENCHING AND HAND DIGGING IN AREAS UNDER EXISTING TREE COVERAGE OR ANY ADDITIONAL AREAS THAT MIGHT BE QUESTIONABLE.
- EXTEND ONE EXTRA CONTROL WIRE TO FARTHEST VALVE, ROUTED PARALLEL TO COMMON GROUND WIRE WITH INSTALLATION OF LEAD AND COMMON WIRES.
- CONTROL WIRE SHALL BE DIRECT BURIAL, 24 VOLT, SINGLE CONDUCTOR, SOLID COPPER, PLASTIC INSULATED CABLE, RATED FOR DIRECT BURIAL APPLICATIONS, UF, UL, APPROVED, 14 GAUGE MINIMUM LEAD AND COMMON GROUND RETURN WIRE UNLESS NOTED OTHERWISE ON PLANS. COLOR OF INSULATION AS FOLLOWS:
  - LEAD WIRE. ANY COLOR (SAME COLOR), EXCEPT WHITE OR ORANGE
  - COMMON GROUND WIRE. WHITE (COLOR)
  - EXTRA CONTROL WIRE. ORANGE (COLOR)
- WIRE SPLICES SHALL BE KING ONE-STEP #1 (TAN) OR 3M-DBY PERMANENT AND WATERPROOF. INSTALL ALL WIRE SPLICES IN 10" ROUND PENTEK VALVE BOXES.
- THE OWNER AND/OR LANDSCAPE ARCHITECT SHALL DETERMINE THE FINAL CONTROLLER LOCATION. THE IRRIGATION CONTRACTOR SHALL MAKE FINAL ELECTRICAL CONNECTION OF CONTROLLER PER LOCAL ELECTRICAL CODE. PROVIDE ALL NECESSARY FUSE BOXES, CONDUIT, FITTINGS, CONNECTORS OR OTHER ELECTRICAL DEVICES TO MAKE CONNECTION. OWNER SHALL PROVIDE ELECTRICAL SERVICE WITHIN 10' LINEAR FEET OF CONTROLLER LOCATION UNLESS NOTED OTHERWISE ON DRAWINGS.
- CONNECT REMOTE SENSORS TO CONTROLLER WITH GROUND WIRE IN SERIES PRIOR TO CONNECTING TO REMOTE CONTROL VALVES.
- ALL P.V.C. MAINLINES AND LATERAL LINES SHALL RECEIVE AS FOLLOWS:
  - 18" MINIMUM COVER FOR MAIN LINES
  - 18" MINIMUM COVER FOR PIPING LOCATED UNDER PAVING
  - 12" MINIMUM COVER FOR LATERAL LINES
- THE MINIMUM DISTANCE BETWEEN THE MAINLINE AND LATERAL LINE FITTINGS (EXCEPT FOR REDUCER BUSHINGS) SHALL BE 18".
- THE MINIMUM HORIZONTAL DISTANCE OF 36" SHALL BE MAINTAINED BETWEEN ANY VALVES THAT ARE INSTALLED SIDE BY SIDE.
- WHERE SERVICE TREES ARE INSTALLED ON THE MAINLINE FOR INSTALLATION OF THE ELECTRIC VALVES AND/OR QUICK COUPLING VALVES, THE CONTRACTOR SHALL LIMIT THE NUMBER OF THESE PER SERVICE TEE. DO NOT INSTALL MORE THAN A TOTAL OF EITHER THREE ELECTRIC VALVES OR A COMBINATION OF TWO ELECTRIC VALVES AND ONE QUICK COUPLER VALVE AT EACH TEE. THE MINIMUM DISTANCE BETWEEN FITTINGS SHALL BE 18" AS REFERENCED IN THE ABOVE NOTES.
- ALL P.V.C. PIPE AND FITTINGS ARE TO BE PRIMED WITH PURPLE P.V.C. PRIMER SOLVENT BEFORE APPLYING P.V.C. CEMENT IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE.
- INSTALL QUICK COUPLING VALVES IN 12"x11" PENTEK VALVE BOXES PER DETAIL SHOWN. CONNECT QUICK COUPLING VALVES TO MAINLINE PIPE WITH LASCO UNITIZED, O-RING SWING JOINTS PER DETAIL SHOWN. #T122-22. SUPPLY OWNER WITH THREE COUPLER KEYS WITH SWIVEL HOSE BIBB EACH, #33DK-10 AND #SH-0 RESPECTIVELY. VALVES TO BE INSTALLED SO THAT THE TOP OF THE QUICK COUPLER IS 2" BELOW BOTTOM OF VALVE BOX LID. PURPLE LID SHALL READ "NON-POTABLE, NOT SAFE FOR DRINKING" IN ENGLISH AND SPANISH.
- ALL LATERAL LINES SHALL BE 3/4" CLASS 200 P.V.C. UNLESS OTHERWISE NOTED ON PLANS.
- ZONE VALVES LABELED AS 'OPEN' ARE INTENDED FOR THE USE OF SUPPLYING HUNTER AFB-ADJ TREE BUBBLERS ON EACH PROPOSED TREE. IRRIGATION CONTRACTOR SHALL FIELD VERIFY THAT THESE ZONES DO NOT EXCEED 20 GALLONS PER MINUTE. THE IRRIGATION CONTRACTOR SHALL STAKE EACH TREE BUBBLER HEAD LOCATION AND RECEIVE APPROVAL FROM THE OWNER AND/OR THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- ALL STATE OF TEXAS LAWS/RULES AND ALL LOCAL CODES/ORDINANCES AREA MADE PART OF THESE PLANS AND SPECIFICATIONS WHETHER SHOWN OR NOT. THESE LAWS AND ORDINANCES WILL SUPERCEDE THE PLANS, DETAILS, AND/OR SPECIFICATIONS FOR THIS PROJECT. THE IRRIGATION CONTRACTOR IS CAUTIONED THAT HE/SHE IS TO INCLUDE ANY AND ALL COST NECESSARY TO MEET OR EXCEED THE LAWS OF THE STATE OF TEXAS AND LOCAL CODES CONCERNING LANDSCAPE IRRIGATION.

**HYDRAULIC CALCULATION NOTES:**

TEN DAYS PRIOR TO COMMENCING WORK, VERIFY STATIC PRESSURE. IF STATIC PRESSURE IS LESS THAN THE ASSUMED STATIC PRESSURE DO NOT START WORK UNTIL NOTIFIED IN WRITING TO PROCEED BY OWNER. IF CONTRACTOR PROCEEDS WITH WORK WITHOUT AUTHORIZATION FROM OWNER, THE CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE TO CORRECT, MODIFY OR REPAIR ANY ITEMS OR MATERIALS THAT MAY BE REQUIRED TO PROVIDE A FULLY FUNCTIONING AND OPERATIONAL IRRIGATION SYSTEM IN COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. HYDRAULIC CALCULATIONS FOR THIS SYSTEM ARE BASED ON THE STATIC PRESSURE AS STATED ABOVE. THE STATIC PRESSURE SHOWN IS AN ASSUMED PRESSURE, A PRESSURE MEASURED AT THE SITE, OR AN ESTIMATED PRESSURE PROVIDED BY THE COUNTY OR CITY. THE OWNER UNDERSTANDS THIS PROJECT MAY NOT PROVIDE 100% COVERAGE AT ALL TIMES.

**HYDRAULIC CALCULATIONS FROM METER A**

ITEM	SIZE	PSI	NOTES
MAXIMUM GPM ESTIMATED - 57.5 GPM			FITTINGS LOSS ACCOUNTED BY ADDING 10% TO FLOW SHOWN IN MANUF. NOZZLE CHART.
SERVICE	1"	5.34	TYPE 'K' COPPER 20 LN. FT. (24.97 GPM)
WATER METER	1"	3.50	(24.97 GPM)
BALL VALVE	1"	1.00	(24.97 GPM)
HYE FILTER	1"	0.30	(24.97 GPM)
BACKFLOW PREVENTER	1"	4.00	(24.97 GPM)
MASTER VALVE	1.5"	1.50	(24.97 GPM)
MAIN LINE	2"	5.68	800 LN. FT. (24.97 GPM)
STATION VALVE	1.5"	1.50	(24.97 GPM)
ZONE #3A	1.5"	2.97	(24.97 GPM)
CRITICAL HEAD 'A'		40.00	
TOTAL LOSS		67.04	
ASSUMED STATIC PRESSURE		75.00	
PRESSURE DIFFERENTIAL		-7.96	

**HYDRAULIC CALCULATION NOTES:**

TEN DAYS PRIOR TO COMMENCING WORK, VERIFY STATIC PRESSURE. IF STATIC PRESSURE IS LESS THAN THE ASSUMED STATIC PRESSURE DO NOT START WORK UNTIL NOTIFIED IN WRITING TO PROCEED BY OWNER. IF CONTRACTOR PROCEEDS WITH WORK WITHOUT AUTHORIZATION FROM OWNER, THE CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE TO CORRECT, MODIFY OR REPAIR ANY ITEMS OR MATERIALS THAT MAY BE REQUIRED TO PROVIDE A FULLY FUNCTIONING AND OPERATIONAL IRRIGATION SYSTEM IN COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. HYDRAULIC CALCULATIONS FOR THIS SYSTEM ARE BASED ON THE STATIC PRESSURE AS STATED ABOVE. THE STATIC PRESSURE SHOWN IS AN ASSUMED PRESSURE, A PRESSURE MEASURED AT THE SITE, OR AN ESTIMATED PRESSURE PROVIDED BY THE COUNTY OR CITY. THE OWNER UNDERSTANDS THIS PROJECT MAY NOT PROVIDE 100% COVERAGE AT ALL TIMES.

**HYDRAULIC CALCULATIONS FROM METER B**

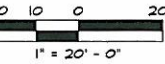
ITEM	SIZE	PSI	NOTES
MAXIMUM GPM ESTIMATED - 57.5 GPM			FITTINGS LOSS ACCOUNTED BY ADDING 10% TO FLOW SHOWN IN MANUF. NOZZLE CHART.
SERVICE	1"	4.75	TYPE 'K' COPPER 20 LN. FT. (26.70 GPM)
WATER METER	1"	4.60	(26.70 GPM)
BALL VALVE	1"	1.00	(26.70 GPM)
HYE FILTER	1"	0.30	(26.70 GPM)
BACKFLOW PREVENTER	1"	4.00	(26.70 GPM)
MASTER VALVE	1"	3.00	(26.70 GPM)
MAIN LINE	2"	1.56	250 LN. FT. (26.70 GPM)
STATION VALVE	1"	3.00	(26.70 GPM)
ZONE #1B	1.5"	1.76	(26.70 GPM)
CRITICAL HEAD 'A'		40.00	
TOTAL LOSS		65.96	
ASSUMED STATIC PRESSURE		75.00	
PRESSURE DIFFERENTIAL		-11.04	



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409-453-1900  
TBAE Firm #B8643



April 30, 2014



Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.

One Inch

LANDSCAPE AND SCREENING

Irrigation Details  
Townsend Village  
City of Rockwall, Rockwall County, Texas

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PROJECT  
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