

PRESSURE REQUIREMENT CALCULATIONS @ ZONE No. 04		
DESIGN STATISTICS FOR CALCULATIONS		
Total Zone Flow:		18.0 g.p.m.
Electric Valve Size:		1"
Static Pressure Less 10% (static @ 65 psi):		56.5 p.s.i.
ACCUMULATIVE LOSSES FROM CITY MAIN TO FURTHEST HEAD		
Sprinkler head requirement:		30 p.s.i.
Zone Pipe/Fitting Loss:		0.95 p.s.i.
1" Electric Valve Loss:		3.0 p.s.i.
Elevation Net Loss (+/- FT.):		
System Mainline Loss (1.5" Sch-40 Main):		1.91 p.s.i.
Backflow Preventer Loss (1"):		4.5 p.s.i.
Water Meter Loss (3/4"):		5.2 p.s.i.
Master Electric Valve Loss (1.5"):		1.5 p.s.i.
Type K Copper Service Loss:		
Total Net Loss:		17.07 p.s.i.
Design Pressure:		47.07 p.s.i.
Notes: System requires a minimum of 48.0 psi static pressure for system to operate properly. Irrigation Contractor shall conduct on site pressure test to verify site pressure prior to starting work. Contractor shall notify Owners Representative of pressure deficiencies or any other on site problems that may alter the effectiveness of the system. Pipe has been size to insure that velocity does not exceed 5 FPS, do not change pipe size in the field without consulting system designer.		

4 CRITICAL LOSS CHART

TYPICAL WEEKLY SCHEDULE BASED ON PRECIPITATION RATE					
Precipitation Rate (in/hr)	Water Desired (in/wk)	Time/Cycle (min)	No. of Zones	Total Time * Min. Hrs.	
Turf Rotor Zone .64	.80				
MP Rotor Spray .44	.80				
Turf Drip Zones .66	.80				
Drip Zones .64	.80	75.0	7	525	8.75
Tree Bubblers 3.87	.80	12.0	4	48	0.8
Total System Hours of Operation Per Week				9.55	

* IT WILL BE NECESSARY TO WATER MULTIPLE ZONES AT ONE TIME TO MEET WATERING WINDOW. A TYPICAL SCHEDULE WOULD ALLOW WATERING TO OCCUR TWO TIMES PER WEEK. TOTAL WATERING TIME WOULD BE DIVIDED BY THE NUMBER OF WATERING DAYS. THIS SCHEDULE IS DESIGNED FOR SUMMER WATER USAGE AND ESTABLISHMENT OF NEW PLANTING.

3 VALVE SCHEDULE

CONSTRUCTION NOTES:

- IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH THE SPECIFICATIONS AND ALL SUBMITTAL REQUIREMENTS. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO NOTIFY THE OWNER'S REPRESENTATIVE FOR SITE INSPECTIONS AS SPECIFIED IN THE SPECIFICATIONS. FAILURE TO NOTIFY THE OWNER'S REPRESENTATIVE DOES NOT RELIEVE THE CONTRACTOR FROM INSPECTION APPROVAL AND WILL REQUIRE THE CONTRACTOR TO UNCOVER WORK AS REQUIRED FOR APPROVAL AT THE COST OF THE CONTRACTOR. IRRIGATION CONTRACTOR IS TO INFORM OWNER'S REPRESENTATIVE OF THE START DATE OF WORK.
- THE IRRIGATION CONTRACTOR IS REQUIRED BY LAW TO NOTIFY TEXAS ONE CALL (800-345-4545) 72 HOURS PRIOR TO ANY EXCAVATION. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. IRRIGATION CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF SAID UTILITIES WHETHER OR NOT TEXAS ONE CALL IS NOTIFIED.
- DO NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WITHOUT VERIFYING ACTUAL ON-SITE WATER PRESSURE FROM THE SOURCE. DO NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
- IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH OTHER CONTRACTORS AS REQUIRED TO ACCOMPLISH IRRIGATION INSTALLATION.
- DUE TO SCALE OF DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS SLEEVES, ETC., WHICH MAY BE REQUIRED. IRRIGATION CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISHED CONDITIONS AFFECTING ALL OF HIS WORK AND PLAN HIS WORK ACCORDINGLY. FURNISHING SUCH FITTINGS, ETC., AS MAY BE REQUIRED TO MEET SUCH CONDITIONS, DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. THE WORK SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID CONFLICTS BETWEEN IRRIGATION SYSTEM, PLANTING AND ARCHITECTURAL FEATURES. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC., SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS AND WITHIN PROPERTY LINES.
- DURING INSTALLATION IT IS THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO COORDINATE PIPING WITH THE LANDSCAPE SUBCONTRACTOR TO AVOID CONFLICT WITH PROPOSED PLANTING. IT WILL BE THE RESPONSIBILITY OF THE IRRIGATION SUBCONTRACTOR TO MOVE PIPING TO ALLOW PROPER PLACEMENT OF PLANT MATERIAL. THE IRRIGATION CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO ENSURE PROPER COVERAGE AT NO ADDITIONAL COST TO THE OWNER.
- NO MACHINE TRENCHING IS TO BE DONE WITHIN THE DRIPLINE OF EXISTING TREES. TRENCHING IS TO BE DONE BY HAND, AIR-SPADE OR BY TUNNELING UNDER ROOT SYSTEM BY METHOD APPROVED BY LANDSCAPE ARCHITECT. PIPING LAYOUT IS DIAGRAMMATIC AND PIPING SHALL BE ROUTED AROUND EXISTING TREES AS POSSIBLE TO AVOID DAMAGE TO THE ROOT SYSTEMS. DO NOT CUT ANY ROOT OVER 3/4" DIAMETER UNLESS APPROVAL FROM THE LANDSCAPE ARCHITECT IS FIRST OBTAINED. ANY CUTS MADE SHALL BE CLEAN AND WITHOUT PRAYED ENDS.
- IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR SLEEVES AND CHASES WHEREVER PIPING OR CONDUIT PASSES UNDER ALL PAVING, THROUGH WALLS, ETC. ALL SLEEVE LOCATIONS MAY NOT BE SHOWN ON PLAN. COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS, GENERAL CONTRACTOR AND OTHER SUBCONTRACTORS AS REQUIRED. ALL SLEEVE AND CHASE LOCATIONS ARE NOT NOTED ON PLAN. ALL SLEEVES 4" OR LESS SHALL BE SCH-40 PVC, ALL SLEEVES 6" OR GREATER SHALL BE CLASS-200 PVC. ALL SLEEVES TO BE SIZED TWICE THE DIAMETER OF PIPE OR COMBINATION OF PIPES ENCLOSED WITHIN THE SLEEVE.
- CONFIRM STATIC WATER PRESSURE AT LEAST 7 DAYS BEFORE BEGINNING WORK. IF STATIC WATER PRESSURE IS LESS THAN STATED IN PRESSURE CALCULATIONS DO NOT PROCEED UNTIL DIRECTED SO BY THE LANDSCAPE ARCHITECT. IF ACTUAL SITE STATIC PRESSURE EXCEEDS DESIGN PRESSURE BY 15 P.S.I. IN ANY ZONE, A PRESSURE REDUCING VALVE SHALL BE INSTALLED. REFER TO DETAILS FOR MODEL.
- ADJUSTABLE FLOW CONTROLS SHALL BE REQUIRED ON CIRCUIT REMOTE CONTROL VALVE. PRESSURE AT ANY POINT WITHIN A ZONE SHALL NOT VARY BY MORE THAN 10% FROM THE DESIGN SPRINKLER OPERATING PRESSURE. SEE SPECIFICATIONS FOR TESTING.
- THE CONTRACTOR SHALL BE A REGISTERED LICENSED IRRIGATOR IN THE STATE OF TEXAS. CONTRACTOR MUST CONFORM TO ALL CODES AS STATED IN SECTION 344 OF THE TEXAS WATER CODE AS OUTLINED BY TCEQ.
- OBTAIN COVERAGE TEST APPROVAL FROM OWNER'S REPRESENTATIVE PRIOR TO PLANTING, SODDING OR SEEDING.
- ALL UNDESIGNATED END LATERAL PIPING SHALL BE 1/2" IN SPRAY ZONES AND 3/4" IN ROTOR ZONES.
- SPRINKLER HEAD SPACING SHALL NOT EXCEED 50% OF SPRAY DIAMETER BASED ON MANUFACTURER'S OPERATING SPECIFICATIONS. SPRINKLER HEAD SPACING FOR HEAD-TO-HEAD COVERAGE OR HEAD-TO-HEAD SHALL BE SPACED AS PER MANUFACTURER'S RECOMMENDATIONS AND ADJUSTED FOR PREVAILING WINDS. THE SYSTEM SHALL BE DESIGNED SO THAT IRRIGATION IS NOT APPLIED TO VEHICULAR TRAFFIC LANES, OTHER PAVEMENT OR STRUCTURES.
- ALL ROTORS SHALL BE LOCATED 12" FROM PAVEMENT, CURBS OR EDGE OF STRUCTURE. ALL SPRAY HEADS SHALL BE LOCATED 6" FROM PAVEMENT, CURBS OR EDGE OF STRUCTURE.
- VALVE AND CIRCUITS SHALL BE SEPARATED BASED ON WATER USE, SO THAT TURF AREAS ARE WATERED SEPARATELY FROM SHRUB AND GROUND COVER AREAS. IRRIGATION HEADS IN THE TURF AREAS WILL BE VALVED SEPARATELY FROM SHRUB AND/OR GROUND COVER AREAS. IT IS RECOMMENDED THAT SEASONAL COLOR AREAS BE WATERED SEPARATELY. UNDER NO CIRCUMSTANCES ARE ZONE TYPES TO BE COMBINED I.E. ROTARY HEADS WITH SPRAYS, TURF AREAS WITH PLANTING BEDS.
- IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM STATIC PRESSURE ON SITE PRIOR TO STARTING WORK. REFER TO NOTES #9 AND #10.
- IT IS THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO SECURE ALL REQUIRED PERMITS AND PAY ALL ASSOCIATED FEES UNLESS OTHERWISE NOTED. ALL LOCAL CODES SHALL PREVAIL OVER ANY DISCREPANCIES CONTAINED IN THESE DOCUMENTS.
- UNSLEEVED PIPES MAY BE SHOWN UNDER PAVEMENT FOR GRAPHIC CLARITY. INSTALL PIPES IN ADJACENT SLEEVES WITHIN LANDSCAPE AREAS.
- 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 WITH A HARDWIRE CONNECTION APPROVED AND INSTALLED BY A LICENSED ELECTRICIAN.
- SPRINKLER HEADS SHALL HAVE MATCHED PRECIPITATION RATES WITHIN EACH CONTROL VALVE CIRCUIT.
- SERVICEABLE CHECK VALVES SHALL BE REQUIRED ADJACENT TO PAVED AREAS WHERE ELEVATION DIFFERENCES MAY CAUSE LOW HEAD DRAINAGE.
- ALL AUTOMATIC IRRIGATION SYSTEMS SHALL BE EQUIPPED WITH A CONTROLLER CAPABLE OF DUAL OR MULTIPLE PROGRAMMING. CONTROLLERS SHALL HAVE MULTIPLE CYCLE START CAPACITY AND A FLEXIBLE CALENDAR PROGRAM, INCLUDING THE CAPABILITY OF BEING SET TO WATER EVERY FIVE DAYS. ALL AUTOMATIC IRRIGATION SYSTEMS SHALL BE EQUIPPED WITH A RAIN SENSOR SHUT-OFF DEVICE.
- ALL IRRIGATION WIRES SHALL BE UL LISTED FOR DIRECT UNDERGROUND BURIAL AND SHALL BE SIZED PER THE MANUFACTURER'S RECOMMENDATIONS. 3M-DBY WATERPROOF CONNECTORS TO BE USED ON ALL WIRE CONNECTIONS. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT.
- ALL IRRIGATION HEADS SHALL BE ADJUSTED TO MINIMIZE OVER-SPRAY ONTO ALL IMPERVIOUS SURFACES.
- ALL PIPE CONNECTIONS SHALL BE PRIMED WITH AN APPROVED COLOR PRIMER BEFORE BEING CHEMICAL WELDED.
- AFTER AWARD OF CONTRACT AND BEFORE ANY IRRIGATION SYSTEM MATERIALS ARE ORDERED FROM SUPPLIERS OR DELIVERED TO THE JOB SITE, SUBMIT TO THE OWNER A COMPLETE LIST OF ALL IRRIGATION SYSTEM MATERIALS, OR PROCESSES PROPOSED TO BE FURNISHED AND INSTALLED AS PART OF THIS CONTRACT. THE LANDSCAPE ARCHITECT OR OWNER'S AUTHORIZED REPRESENTATIVE WILL ALLOW NO SUBSTITUTIONS WITHOUT PRIOR WRITTEN ACCEPTANCE. MANUFACTURER'S WARRANTIES SHALL NOT RELIEVE THE CONTRACTOR OF HIS LIABILITY UNDER THE GUARANTEE. SUCH WARRANTIES SHALL ONLY SUPPLEMENT THE GUARANTEE.
- IRRIGATION CLOSEOUT DOCUMENTS SHALL INCLUDE A WATER BUDGET. A LAMINATED COPY OF THE WATER BUDGET SHALL BE PERMANENTLY INSTALLED INSIDE THE IRRIGATION CONTROLLER DOOR.
 - CHART CONTAINING ZONE NUMBER, PRECIPITATION RATE AND GPM.
 - LOCATION OF EMERGENCY IRRIGATION SYSTEM SHUT-OFF VALVE.

2 NOTES

- W DEDICATED 3/4" IRRIGATION WATER METER.
B DOUBLE CHECK BACKFLOW DEVICE. 1" WATTS 007 PER LOCAL CODES.
M MASTER VALVE, HUNTER ICV-151G NORMALLY CLOSED VALVE
S MP ROTATOR NOZZLE 90°-210°; SIZE AS SPECIFIED ON PLAN.
S MP ROTATOR NOZZLE 210°-270°; SIZE AS SPECIFIED ON PLAN.
S MP ROTATOR NOZZLE 360°; SIZE AS SPECIFIED ON PLAN.
W MP ROTATOR: M35-M3500, M3-MP 3000, M2-MP 2000, M1-MP 1000, M8-M800SR, M2-MP CORNER, MR, MS, ML, MP SIDESTRIPS AND END STRIPS
NOTE: ALL MP ROTATOR SPRAY HEADS ARE TO BE HUNTER PROS-06-PR540-CV SPRAY BODY, PROVIDE CHECK VALVE AT LOW HEAD

- INDICATES MANUFACTURER'S STANDARD CATALOGED SPACING WITHOUT WIND. ALLOWANCE THIS NUMBER IS FOR REFERENCE ONLY AND DOES NOT INDICATE ACCEPTANCE OF DEVIATION FROM DESIGN SPACING TO THIS STANDARD.
- INDICATES ANGLE OF COVERAGE. FOR EXAMPLE: H=180 DEG SUB-LETTER "G" INDICATES GROUND COVER. "S" INDICATES SHRUB APPLICATION.
- S LOCATE AND INSTALL ONE (1) HUNTER DUAL-S SURGE ARRESTOR AFTER THE CONTROLLER GROUNDING AND BEFORE THE FIRST ZONE VALVE AND EZ-1 DECODER. REFER TO DTL. 14/SDP 4.2
- 1 INSTALL TWO ROWS OF DRIP LINE EVENLY SPACED. USE TLHCVR11-18 FOR BED AREAS. IF BED AREA EXCEEDS 36", INSTALL THREE ROWS EVENLY SPACED. INSTALL STAPLES @ MAX. 3' O.C TO SECURE
- B NETAFIM DRIP CONTROL ZONE VALVE - REFERENCE DETAILS
- REMOTE CONTROL VALVE, HUNTER ICV-AS-ADJ, SIZE AS INDICATED ON PLANS
- HUNTER HO-33-LRC-R QUICK COUPLING VALVE WITH HK-33 KEY
- MANUAL VALVE - SIZE OF MAINLINE
- ZONE IDENTIFICATION
ZONE SIZE IN GALLONS PER MINUTE
VALVE SIZE THIS ZONE
- ZONE IDENTIFICATION
ZONE SIZE IN GALLONS PER MINUTE
- HATCH PATTERN INDICATES BED/TURF AREAS TO BE INCLUDED THIS ZONE
VALVE SIZE THIS ZONE
- DRIPLINE: NETAFIM TLHCVR11-18 FOR SURFACE PLANTING BEDS, ROWS SPACED AT 18 INCHES
NETAFIM TLHCVR12 FOR SUBSURFACE TURF, ROWS SPACED AT 12 INCHES
NETAFIM TLHCVR7-12 FOR SLOPES GREATER THAN 3:1
- DRIP SUPPLY LINE, SCH 40 PVC, SIZE PER PLAN.
- TREE BUBBLER ASSEMBLY ON 6" POP UP
- CONTROLLER - HUNTER ICC2 CONTROLLER WITH EZ-DM TWO-WIRE MODULE. FINAL LOCATION IS TO BE DETERMINED AFTER CONSULTING WITH LANDSCAPE ARCHITECT.
- WEATHER SENSOR - HUNTER SOLAR-SYNO WEATHER SENSOR, FINAL LOCATION IS TO BE DETERMINED AFTER CONSULTING WITH LANDSCAPE ARCHITECT.
- MAIN LINE - USE SCH-40 PVC PIPE, SIZE AS INDICATED ON PLANS
- LATERAL LINE - USE CLASS 315 ON 1/2" PIPE AND CLASS 200 IPS PVC ON 3/4" AND LARGER PIPE. DO NOT DEVIATE ON SIZING WITHOUT CONSULTING WITH PROJECT DESIGNER.
- SLEEVE - USE TWO (2) SIZES LARGER THAN SPRINKLER PIPE DESIGNATED FOR CROSSING PAVING ON ALL LATERAL LINES. USE SCH-40 PVC PIPE. VALVE WIRING MAY BE RUN IN THE SAME SLEEVES.
- NOTE: REFER TO SHEET LI 2.01 to LI 2.02 FOR DETAILS

1 LEGEND

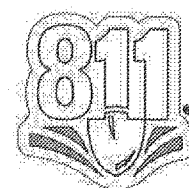
STATEMENT OF IRRIGATION DESIGN STANDARDS CONFORMITY:

This plan is complete and conforms to the design and installation parameters of the irrigation design and equipment standards set by the City of Austin, Texas and TCEQ (Texas Commission on Environmental Quality).

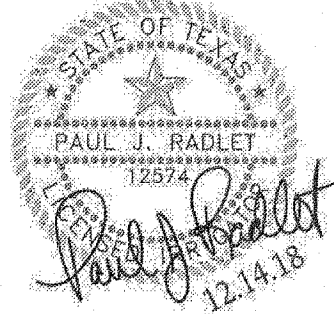
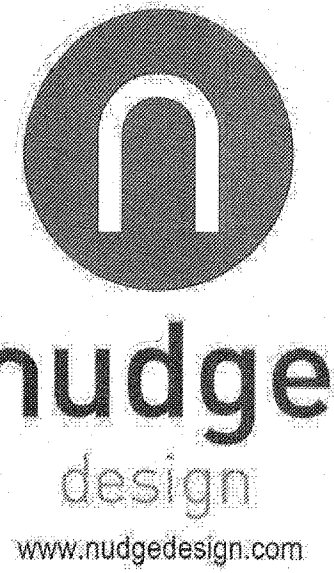
Paul J. Radlet
Paul J. Radlet TX LI # 12574

SPECIAL NOTES:

- THE IRRIGATION CONTRACTOR SHALL COMPLY WITH ALL LOCAL AND STATE MANDATED IRRIGATION ORDINANCES AND CODES AND WILL SECURE ALL REQUIRED PERMITS.
- ALL WIRES, CONTROL VALVES, AND PRESSURIZED WATER SUPPLY LINES SHALL NOT BE LOCATED WITHIN THE EXISTING ROW OR OUTSIDE PROPERTY BOUNDARIES.



SITE PLAN RELEASE			
FILE NUMBER:	SP-2020-0169C	EXPIRATION DATE:	
CASE MANAGER:	RANDY ROUDA	APPLICATION DATE:	04/17/2020
APPROVED ADMINISTRATIVELY ON:			
APPROVED BY PLANNING COMMISSION ON:			
APPROVED BY CITY COUNCIL ON:			
under Section	112	of Chapter	25-5 of the Austin City Code.
Director for Development Services Department			
DATE OF RELEASE:		Zoning:	CS-MU-V-CO, CS-V, CS-CO & CS-VO-CO
Rev. No. 1		Correction No. 1	
Rev. No. 2		Correction No. 2	
Rev. No. 3			
RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY CITY ENGINEERS.			



1311 SOUTH LAMAR BLVD
AUSTIN, TX 78704

Project Number:

18-021

Date Issued:

December 14, 2018

Revisions:

Sheet Title:

IRRIGATION NOTES
AND LEGEND

IR1

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OF 58

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