




1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, EQUIPMENT QUANTITIES, AND UTILITY LOCATIONS PRIOR TO BEGINNING WORK.
2. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANS OR SPECIFICATIONS PRIOR TO BEGINNING OR CONTINUING WORK.
3. THE CONTRACTOR SHALL MAKE NO SUBSTITUTIONS, DELETIONS, OR ADDITIONS TO THIS PLAN WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
4. ALL CONSTRUCTION SHALL CONFORM TO CITY, COUNTY, STATE, AND FEDERAL REGULATIONS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THAT ALL IRRIGATION EQUIPMENT MEETS GOVERNMENT REGULATIONS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS OR APPROVALS PRIOR TO COMMENCEMENT OF OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE LANDSCAPE ARCHITECT.
5. THIS PLAN IS SCHEMATIC AND DUE TO THE NATURE OF CONSTRUCTION SLIGHT FIELD MODIFICATIONS MAY BE NECESSARY TO IMPLEMENT PLAN.
6. THIS IRRIGATION SYSTEM IS DESIGNED TO THE FOLLOWING STANDS: 75 G.P.M. STATIC WATER PRESSURE IS 65 P.S.I.
7. CONTRACTOR TO VERIFY ACTUAL AVAILABLE WATER PRESSURE BEFORE BEGINNING INSTALLATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IF AVAILABLE WATER PRESSURE EXCEEDS 5 PSI HIGHER OR LOWER THAN AVAILABLE WATER PRESSURE.
8. VERIFY CONTROLLER AND RAIN SENSOR LOCATION AND MAINLINE POINT OF CONNECTION AT PROJECT SITE WITH OWNER.
9. IRRIGATION SYSTEMS CONNECTED TO POTABLE WATER SUPPLY, SHALL HAVE A BACKFLOW PREVENTER INSTALLED.
10. WHERE APPLICABLE IRRIGATION HEADS ARE TO BE ADJUSTED FOR COMPLETE COVERAGE WITH MINIMUM OVER SPRAY BEYOND LANDSCAPE AREAS.
11. EXISTING TREES TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. DO NOT TRECH OR EXCAVATE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE.
12. IRRIGATION LATERAL LINES, MAIN LINES AND EQUIPMENT MAY BE SHOWN OUTSIDE PROPERTY LINES ON THIS PLAN. ALL IRRIGATION LINES AND EQUIPMENT ARE TO BE WITHIN AND INSTALLED WITHIN THE LIMITS OF THE PROPERTY LINE.
13. ALL IRRIGATION SLEEVING TO BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR UNLESS OTHERWISE NOTED. ELECTRICAL WIRES FOR IRRIGATION VALVES AND IRRIGATION LINES ARE TO BE PLACED IN SEPARATE SLEEVES. SEE SLEEVING DETAIL. ALL PRESSURE MAINLINES UNDER ASPHALT PAVEMENT SHALL BE PLACED WITHIN SLEEVES AS NOTED.
14. GENERAL CONTRACTOR AND IRRIGATION CONTRACTOR TO COORDINATE INSTALLATION OF METER, BACKFLOW, AND ASSOCIATED APPURTENANCES.
15. ALL PLANT MATERIAL IN TREE HOLDING AREAS SHALL BE MANUALLY WATERED/IRRIGATED TO KEEP MOIST UNTIL PLANTING.
16. MAINLINE, VALVES, AND WIRING ARE SHOWN ON DRAWINGS FOR CLARITY, SHOULD BE LOCATED IN ACCESSIBLE GREEN SPACE. CONTRACTOR TO COORDINATE WITH ALL DISCIPLINES TO AVOID CONFLICTS WITH UTILITIES/ STRUCTURES, ETC.
17. CONTRACTOR RESPONSIBLE FOR PROVIDING 110 SINGLE PHASE POWER TO CONTROLLER.
18. INSTALLATION OF CONTROLLER BE TO BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON THE SITE.
19. ALL 24 VAC WIRING SHALL BE OF DIRECT BURIAL COPPER WIRE AS FOLLOWS:
 - CONTROL WIRES - #14
 - COMMON WIRES - #12
20. LOCATE ALL VALVES A MINIMUM OF 24" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS NOTED OTHERWISE.
21. SET SPRAY HEADS 4" FROM BACK OF CURB OR 24" IF PAVEMENT HAS NO CURB.
22. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF THE FINAL INSTALLATION TO OWNER AT SUBSTANTIAL COMPLETION BEFORE BEGINNING FINAL PAVEMENT. "AS-BUILT" DRAWINGS TO BE COLOR CODED BY ZONE ON 8.5" X 11" COPY, LAMINATED, AND PLACED IN CONTROLLER.
23. THE SYSTEM HAS BEEN DESIGNED TO PROVIDE 100% COVERAGE. ANY CHANGES MADE IN THE LAYOUT DUE TO FIELD CONDITIONS SHALL BE IN ACCORDANCE WITH THESE STANDARDS. QUANTITIES IN SCHEDULE ARE ESTIMATES.
24. IRRIGATION VALVES AND VALVE BOXES SHALL BE LOCATED IN LANDSCAPE BEDS OR GROUND/COVER AREAS WHENEVER POSSIBLE. ALL REMOTE VALVE BOXES SHALL BE SET FLUSH WITH FINISHED GRADE AND CONTAIN ONE CUBIC FOOT OF CLEAN GRAVEL BENEATH VALVE. LABEL REMOTE BOXES WITH ONE-INCH ALPHANUMERIC NOTATION CORRESPONDING TO THE APPLICABLE ALPHA CONTROLLER AND NUMERIC SCHEDULE.

GRAPHIC SCALE IN FEET



0 15 30 60

REF. SHEET LI 1.02 FOR IRRIGATION
SCHEDULE

NO IRRIGATION TO BE LOCATED WITHIN
5'-0" OF BUILDING FOUNDATION PER
GEOTECH REPORT.

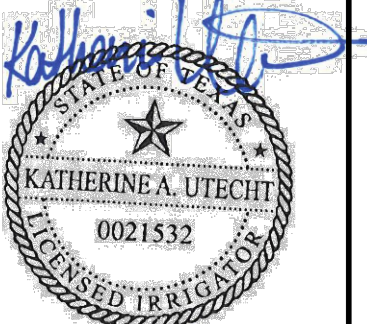
OWNER:
Black Forest Ventures
25 Waterway Ave
Suite 225
The Woodlands, TX 77380

CIVIL ENGINEER:
Kimley Horn
1400 Woodloch Drive
Suite 225
The Woodlands, TX 77380
Phone: (281) 475-2816

LANDSCAPE ARCHITECT:
Kimley»Horn
13455 Noel Rd,
Two Galleria Office Tower
Suite 700
Dallas, TX 75240
Contact: Patrick B. Hart, PLA
Phone: (972) 770-1300

[illegible]

Kimley»Horn



KHA PROJECT 067792503	DATE 01/08/2020	SCALE AS SHOWN	DESIGNED BY KAU	DRAWN BY EC KAU	CHECKED BY KAU
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IRRIGATION PLAN

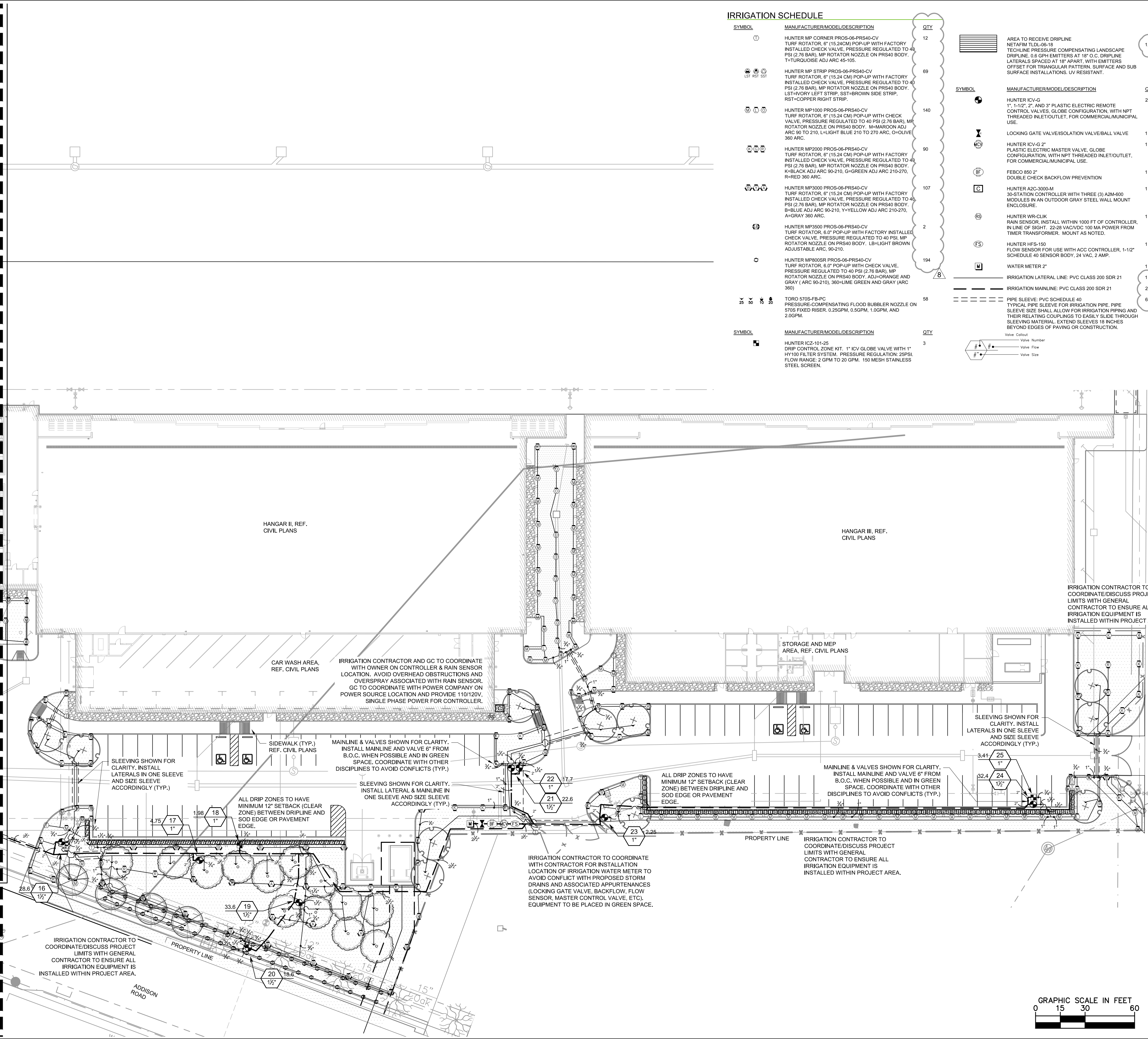
ADDISON GALAXY FBO
15601 ADDISON RD.
PREPARED FOR
BLACK FOREST VENTURE

SHEET NUMBER
LI 1.01

ADDISON

DALLAS, TEXAS

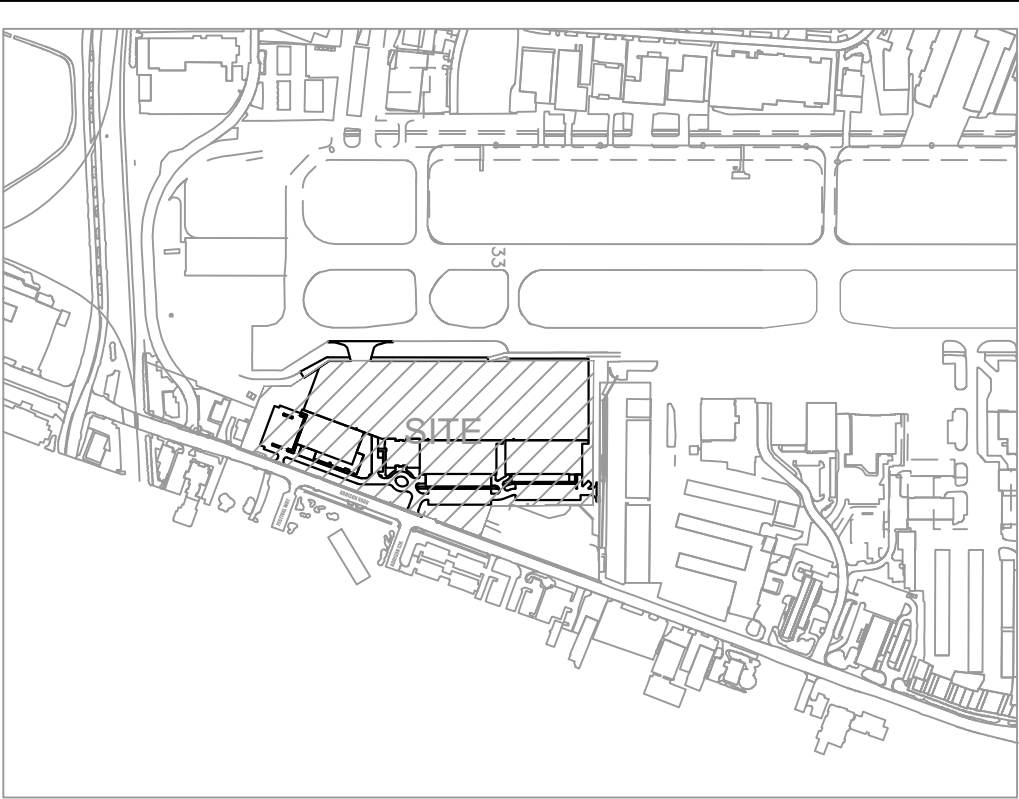
MATCHLINE LI 1.01



IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
①	HUNTER MP CORNER PROS-06-PRS40-CV TURF ROTATOR, 6" (15.24CM) POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY, T-TURFOURSIDE ADJ ARC 45-105.	12
②	HUNTER MP STRIP PROS-06-PRS40-CV TURF ROTATOR, 6" (15.24 CM) POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY, LST-IVORY LEFT STRIP, SST-BROWN SIDE STRIP, RST-COPPER RIGHT STRIP.	69
③	HUNTER MP1000 PROS-06-PRS40-CV TURF ROTATOR, 6" (15.24 CM) POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY, M-MAROON ADJ ARC 90 TO 210, L-LIGHT BLUE 210 TO 270 ARC, O-OLIVE 360 ARC.	140
④	HUNTER MP2000 PROS-06-PRS40-CV TURF ROTATOR, 6" (15.24 CM) POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY, K-BLACK ADJ ARC 90-210, G-GREEN ADJ ARC 210-270, R-RED 360 ARC.	90
⑤	HUNTER MP3000 PROS-06-PRS40-CV TURF ROTATOR, 6" (15.24 CM) POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY, B-BLUE ADJ ARC 90-210, Y-YELLOW ADJ ARC 210-270, A-GRAY 360 ARC.	107
⑥	HUNTER MP3500 PROS-06-PRS40-CV TURF ROTATOR, 6.0" POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY, LB-LIGHT BROWN ADJUSTABLE ARC, 90-210.	2
⑦	HUNTER MP800SR PROS-06-PRS40-CV TURF ROTATOR, 6.0" POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY, ADJ-ORANGE AND GRAY (ARC 90-210), 360-LIME GREEN AND GRAY (ARC 360).	194
⑧	TORO 570S-FB-PC PRESSURE-COMPENSATING FLOOD BUBBLER NOZZLE ON 570S FIXED RISER, 0.25GPM, 0.5GPM, 1.0GPM, AND 2.0GPM.	58
⑨	HUNTER IC2-101-25 DRIP CONTROL ZONE KIT, 1" ICV GLOBE VALVE WITH 1" HY100 FILTER SYSTEM, PRESSURE REGULATION, 2PSI FLOW RANGE, 2 GPM TO 20 GPM, 150 MESH STAINLESS STEEL SCREEN.	3

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
⑩	AREA TO RECEIVE DRIPLINE NETAPM TLDL-08-18 TECHLINE PRESSURE COMPENSATING LANDSCAPE DRIPLINE, 0.6 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN, SURFACE AND SUB SURFACE INSTALLATIONS, UV RESISTANT.	1,317 L.F.
⑪	HUNTER ICV-G 1", 1-1/2", 2", AND 3" PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.	22
⑫	LOCKING GATE VALVE/ISOLATION VALVE/BALL VALVE	1
⑬	HUNTER ICV-G 2" PLASTIC ELECTRIC MASTER VALVE, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.	1
⑭	FEBCO 850 2" DOUBLE CHECK BACKFLOW PREVENTION	1
⑮	HUNTER A2C-3000-M 30-STATION CONTROLLER WITH THREE (3) A2M-400 MODULES IN AN OUTDOOR GRAY STEEL WALL MOUNT ENCLOSURE.	1
⑯	HUNTER WR-CLK RAIN SENSOR, INSTALL WITHIN 1000 FT. OF CONTROLLER, IN LINE OF SIGHT, 22-28 VAC/DC 100 MA POWER FROM TIMER TRANSFORMER, MOUNT AS NOTED.	1
⑰	HUNTER MFS-150 FLOW SENSOR FOR USE WITH ACC CONTROLLER, 1-1/2" SCHEDULE 40 SENSOR BODY, 24 VAC, 2 AMP.	1
⑱	WATER METER 2" IRRIGATION LATERAL LINE, PVC CLASS 200 SDR 21	11,463 L.F.
⑲	IRRIGATION MAINLINE, PVC CLASS 200 SDR 21	2,279 L.F.
⑳	PIPE SLEEVE, PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE, PIPE SLEEVE SIZE SHALL ALLOW FOR IRRIGATION PIPING AND THEIR RELATING COUPLINGS TO EASILY SLIDE THROUGH SLEEVING MATERIAL, EXTEND SLEEVES 18 INCHES BEYOND EDGES OF PAVING OR CONSTRUCTION.	602.8 L.F.
㉑	Valve Cutout Valve Number Valve Flow Valve Size	



KEY PLAN

NOTE:
THIS IRRIGATION PLAN IS DESIGNED TO THE FOLLOWING STATS: 65
PSI AND 75 GPM. IF WATER PRESSURE DOES NOT MEET DESIGN
SPECIFICATIONS A BOOSTER PUMP WILL BE REQUIRED AT COST OF
CONTRACTOR. CONTACT LANDSCAPE ARCHITECT PRIOR TO
INSTALLATION IF SYSTEM HAS +/- 5 PSI THAN DESIGN PRESSURE.

ABOVE QUANTITIES PROVIDED FOR CONVENIENCE ONLY.
CONTRACTOR TO CONFIRM ALL QUANTITIES PRIOR TO BIDDING.

REFERENCE MAXIMUM LATERAL DRIPLINE CHART TO DETERMINE
MINIMUM NUMBER OF POINTS OF CONNECTION PER DRIP LINE ZONE.

WHERE LAYOUT FLEXIBILITY EXISTS CENTER FEED LAYOUTS MUST BE
USED. THIS ALLOWS FOR EVEN FLOW OF WATER THROUGH THE ZONE.

NO IRRIGATION TO BE LOCATED WITHIN
5'-0" OF BUILDING FOUNDATION PER
GEOTECH REPORT.

KHA PROJECT 067792503		DATE 01/08/2020		SCALE AS SHOWN		DESIGNED BY KAU		DRAWN BY EC KAU		CHECKED BY KAU	
ADDENDUM #1		ADDENDUM #5		ADDENDUM #6		ADDENDUM #8		ADDENDUM #9		ADDENDUM #10	
09/06/19 KS		10/24/2019 KU		12/17/2019 KU		01/08/2020 KS					
REVISIONS		DATE		BY							
No.											

Kimley»Horn

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KATHERINE A. UTECHT
0021532
01/08/2020

IRRIGATION PLAN

ADDISON GALAXY FBO
15601 ADDISON RD.
PREPARED FOR
BLACK FOREST VENTURE

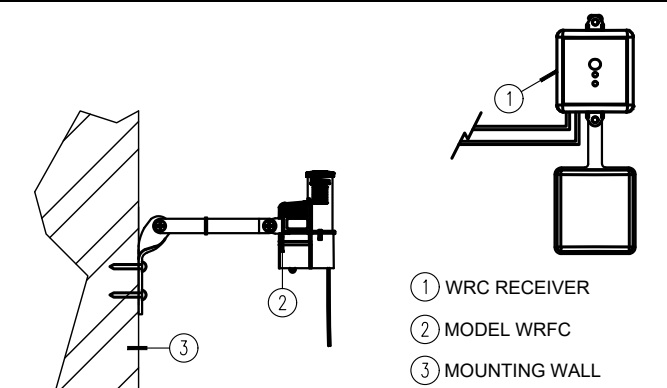
DALLAS, TEXAS

ADDISON

SHEET NUMBER
LI 1.02

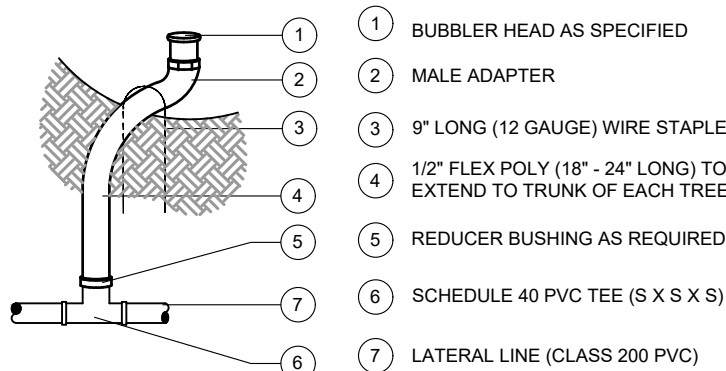
Plotted By: Steelman, Kyle Sheet Set: Krig Layout: LI 2.01 IRRIGATION DETAILS & SPECS January 08, 2020 02:07:43pm \\WDPF01\Draws\Projects\WDL\Aviation\067792503 - Addison Galaxy FBO\ACAD\Draws\Sheets\Landscapes\LI - IRRIGATION DETAILS.dwg

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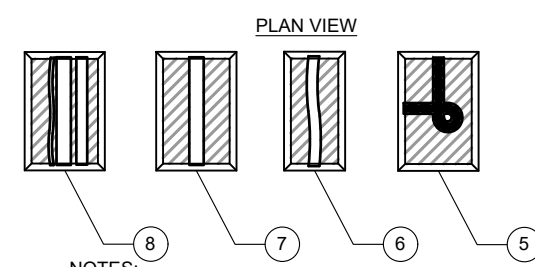
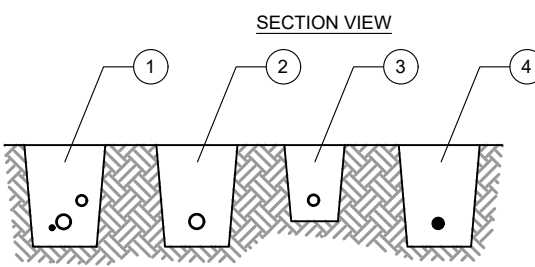
RAIN SENSOR

DETAIL - N.T.S.



BUBBLER ASSEMBLY

N.T.S.



- NOTES:
- SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SCHD. 40 PVC TWICE THE DIAMETER OF THE PIPE OR WITH BUNDLE WITHIN.
 - FOR PIPE AND WIRE BURIAL DEPTHS SEE SPECIFICATIONS.

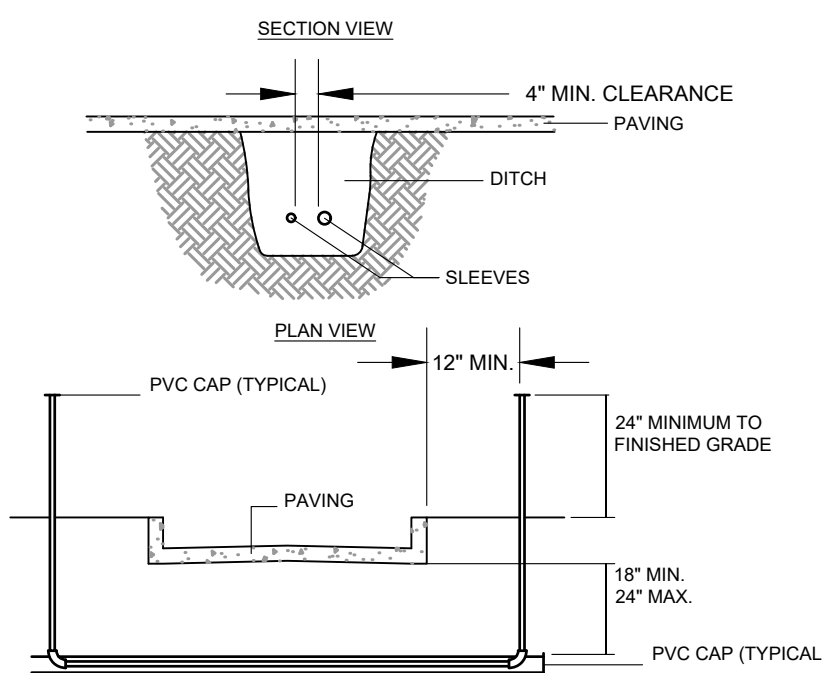
PIPE AND WIRE TRENCHING

N.T.S.

PVC PIPE SIZE	SOLVENT WELD SCH. 40 FITTINGS	BELL AND GASKET FITTINGS	SOCKETED PIPE
1/2"	2"	-	2"
3/4"	2"	-	2"
1"	2 1/2"	-	2 1/2"
1 1/4"	3"	-	3"
1 1/2"	3"	3"	3"
2"	4"	4"	4"
2 1/2"	6"	6"	4"
3"	6"	6"	6"
4"	8"	8"	4"

SLEEVE SCHEDULE

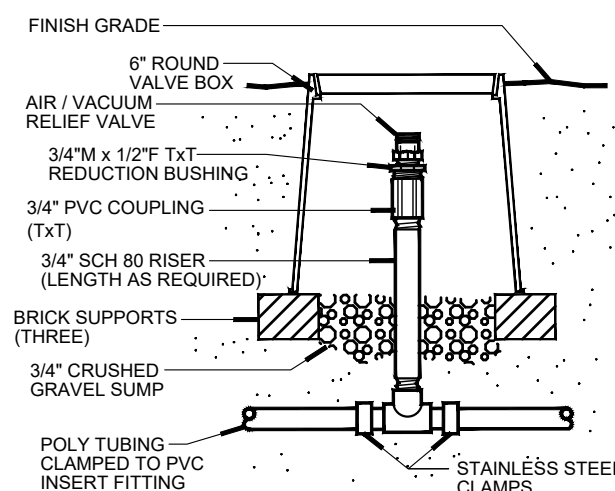
N.T.S.



- NOTES:
- ALL IRRIGATION SLEEVES TO BE SCHEDULE 40 PVC.
 - ALL JOINTS TO BE SOLVENT WELDED AND WATER TIGHT.
 - WHERE THERE IS MORE THAN ONE SLEEVE, EXTEND THE SMALLER SLEEVE TO 24-INCHES MINIMUM ABOVE FINISHED GRADE.
 - MECHANICALLY TAMP TO 95% PROCTOR.

SLEEVE DETAIL

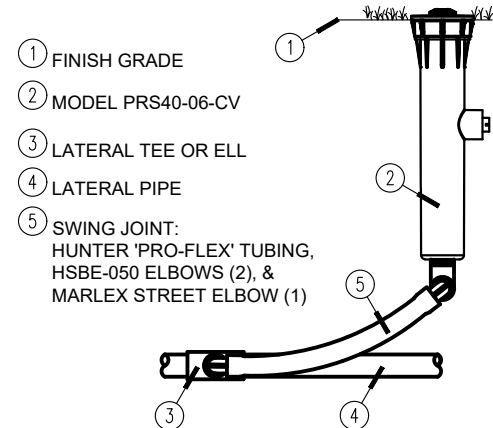
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AIR/VACUUM RELIEF

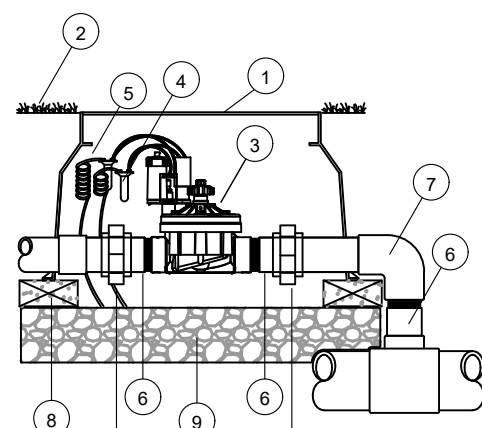
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N.T.S.



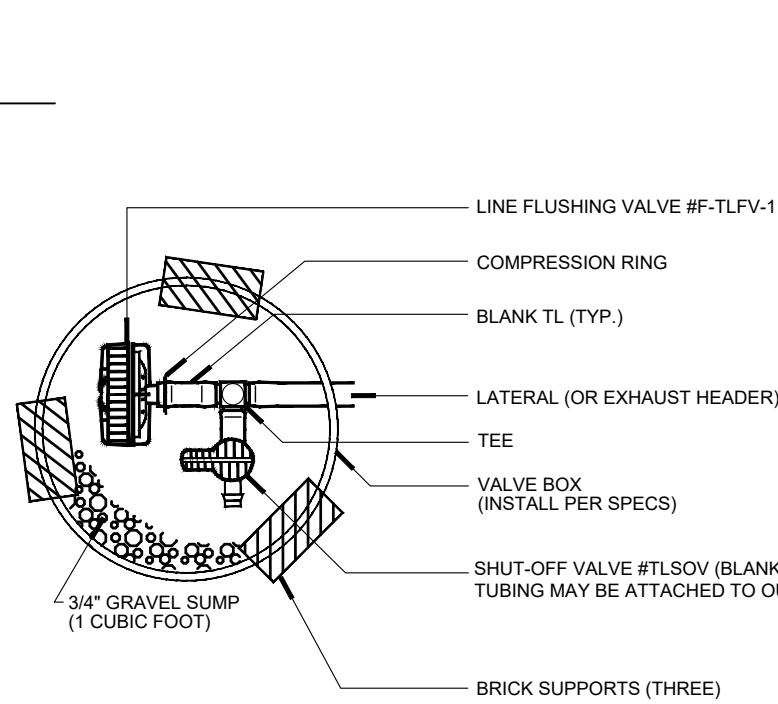
MP ROTATOR SPRINKLER

DETAIL - N.T.S.



ICV GLOBE VALVE

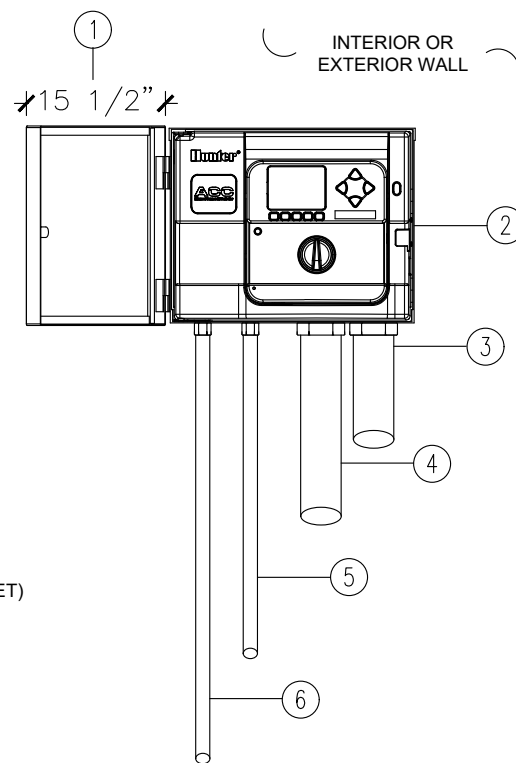
N.T.S.



LINE FLUSHING VALVE

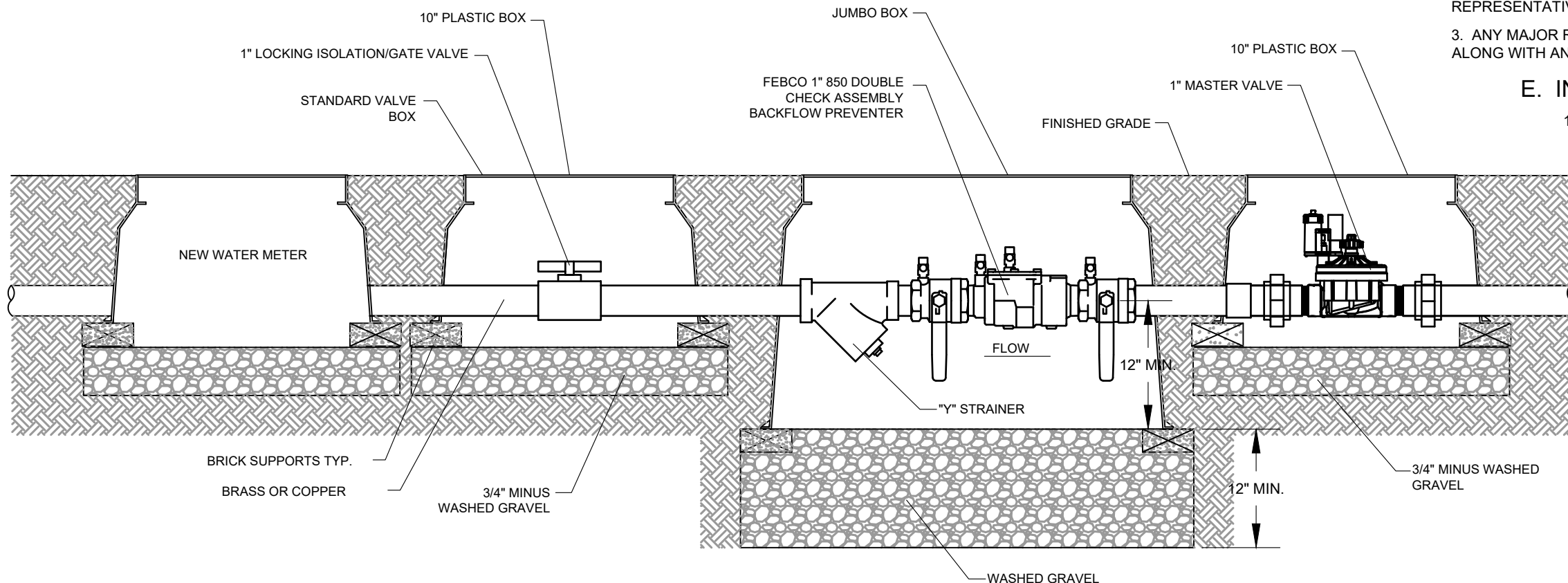
W/ SHUT-OFF VALVE

N.T.S.



HUNTER ACC CONTROLLER - WALL MOUNT

DETAIL - N.T.S.



DOUBLE CHECK ASSEMBLY BACKFLOW PREVENTER

N.T.S.

GENERAL IRRIGATION SPECIFICATIONS AND NOTES

A. EXTENT:

INCLUDES FURNISHING ALL LABOR, MATERIALS AND EQUIPMENT FOR THE PROPER INSTALLATION OF THE IRRIGATION SYSTEM. THE WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING: (1) TRENCHING AND BACKFILL, (2) AUTOMATICALLY CONTROLLED LOW VOLUME IRRIGATION SYSTEM, (3) TEST ALL SYSTEMS AND MAKE OPERATIVE, (4) "AS-BUILT" DRAWINGS.

B. GENERAL:

1. PERMITS AND FEES: OBTAIN ALL PERMITS AND PAY REQUIRED FEES TO ANY GOVERNMENTAL AGENCY HAVING JURISDICTION OVER THE WORK. INSPECTIONS REQUIRED BY LOCAL ORDINANCES DURING THE COURSE OF CONSTRUCTION SHALL BE ARRANGED AS REQUIRED. ON COMPLETION OF THE WORK, SATISFACTORY EVIDENCE SHALL BE FURNISHED TO THE OWNER'S CONSTRUCTION REPRESENTATIVE TO SHOW THAT ALL WORK HAS BEEN INSTALLED IN ACCORDANCE WITH THE TEXAS BUILDING CODE - PLUMBING / APPENDIX 'F' AND CODE REQUIREMENTS.

2. APPROVAL: WHEREVER THE TERMS "APPROVE" OR "APPROVED" ARE USED IN THE SPECIFICATIONS, THEY SHALL MEAN THE APPROVAL OF THE OWNER'S CONSTRUCTION REPRESENTATIVE IN WRITING.

3. BEFORE ANY WORK IS STARTED, A CONFERENCE SHALL BE HELD BETWEEN THE CONTRACTOR AND THE OWNER'S CONSTRUCTION REPRESENTATIVE CONCERNING THE WORK UNDER THIS CONTRACT.

4. COORDINATION: COORDINATE AND COOPERATE WITH OTHER CONTRACTORS TO ENABLE THE WORK TO PROCEED AS RAPIDLY AND EFFICIENTLY AS POSSIBLE.

5. INSPECTION OF SITE:

A. CONTRACTOR SHALL ACQUAINT HIMSELF WITH ALL SITE CONDITIONS. SUBMISSION OF HIS PROPOSAL SHALL BE CONSIDERED EVIDENCE THAT THE EXAMINATION HAS BEEN CONDUCTED. SHOULD UTILITIES NOT SHOWN ON THE PLANS BE FOUND DURING EXCAVATIONS, CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER'S CONSTRUCTION REPRESENTATIVE FOR INSTRUCTIONS AS TO FURTHER ACTION. FAILURE TO DO SO WILL MAKE CONTRACTOR LIABLE FOR ANY AND ALL DAMAGE THERE TO ARISING FROM HIS OPERATIONS SUBSEQUENT TO DISCOVERY OF SUCH UTILITIES NOT SHOWN IN PLANS.

B. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS IN THE LAYOUT AS MAY BE REQUIRED TO CONNECT TO EXISTING STUBOUTS, SHOULD SUCH STUBS NOT BE LOCATED EXACTLY AS SHOWN, AND AS MAY BE REQUIRED TO WORK AROUND EXISTING WORK AT NO INCREASE IN COST TO THE OWNER'S CONSTRUCTION REPRESENTATIVE.

6. PROTECTION OF EXISTING PLANTS AND SITE CONDITIONS: THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT SITE CONDITIONS TO REMAIN. SHOULD DAMAGE BE INCURRED, THE CONTRACTOR SHALL REPAIR THE DAMAGE TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.

7. THE OWNER RESERVES THE RIGHT TO SUBSTITUTE, ADD, OR DELETE ANY MATERIAL OR WORK AS THE WORK PROGRESSES. ADJUSTMENTS TO THE CONTRACT PRICE SHALL BE NEGOTIATED IF DEEMED NECESSARY BY THE OWNER ON A PER DIEM BASIS.

8. THE OWNER RESERVES THE RIGHT TO REJECT MATERIAL OR WORK WHICH DOES NOT CONFORM TO THE CONTRACT DOCUMENTS. REJECTED WORK SHALL BE REMOVED OR CORRECTED AT THE EARLIEST TIME POSSIBLE.

9. WORK SCHEDULE: WITHIN 10 DAYS AFTER AWARD OF THE CONTRACT, THE CONTRACTOR SHALL SUBMIT TO THE OWNER A WORK SCHEDULE.

10. "AS-BUILT" IRRIGATION DRAWINGS: PREPARE AN "AS-BUILT" DRAWING ON A BLUEPRINT WHICH SHALL SHOW DEVIATIONS FROM THE BID DOCUMENTS MADE DURING CONSTRUCTION AFFECTING THE MAIN LINE PIPE, CONTROLLER LOCATIONS, REMOTE CONTROL VALVES AND QUICK COUPLING VALVES. THE DRAWINGS SHALL ALSO INDICATE AND SHOW APPROVED SUBSTITUTIONS OF SIZE, MATERIAL AND MANUFACTURER'S NAME AND CATALOG NAME AND CATALOG NUMBER. THE DRAWINGS SHALL BE DELIVERED TO THE TENANT'S CONSTRUCTION REPRESENTATIVE BEFORE FINAL ACCEPTANCE OF WORK.

11. FINAL ACCEPTANCE: FINAL ACCEPTANCE OF THE WORK MAY BE OBTAINED FROM THE OWNER'S CONSTRUCTION REPRESENTATIVE UPON THE SATISFACTORY COMPLETION OF ALL WORK.

12. GUARANTEE: ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF ACCEPTANCE AGAINST ALL DEFECTS IN MATERIAL, EQUIPMENT AND WORKMANSHIP. GUARANTEE SHALL ALSO COVER REPAIR OF DAMAGE TO ANY PART OF THE PREMISES RESULTING FROM LEAKS OR OTHER DEFECTS IN MATERIAL, EQUIPMENT AND WORKMANSHIP TO THE SATISFACTION OF THE TENANT'S CONSTRUCTION REPRESENTATIVE. REPAIRS, IF REQUIRED, SHALL BE DONE PROMPTLY AT NO COST TO THE OWNER.

13. A LAMINATED PLAN (8 1/2 X 11) SHOWING THE DIFFERENT IRRIGATION ZONES IN COLOR, PREPARED BY THE IRRIGATION CONTRACTOR, SHALL BE POSTED IN THE MECHANICAL ROOM.

C. MATERIALS:

1. GENERAL: ALL MATERIALS THROUGHOUT THE SYSTEM SHALL BE NEW AND IN PERFECT CONDITION.

2. PLASTIC PIPING: ALL MAIN LINES AND LATERAL LINES SHALL BE CLASS 200 POLYVINYL CHLORIDE (PVC) PIPE AND SHALL COMPLY WITH ONE OF THE FOLLOWING STANDARDS: ASTM D 1785, ASTM D-2241, AWWA C-900, OR AWWA C-905. SDR-26 PIPE SHALL HAVE A MINIMUM WALL THICKNESS AS REQUIRED BY SDR-26. PVC GASKETS FITTINGS SHALL CONFORM TO ASTM D 3139. GASKETS SHALL CONFORM TO ASTM F 477. SOLVENT-WELD PVC FITTINGS SHALL MEET THE REQUIREMENTS OF SCHEDULE 40 AS SET FORTH IN ASTM D 2466. THREADED PVC PIPE FITTINGS SHALL MEET THE REQUIREMENTS OF SCHEDULE 40 AS SET FORTH IN ASTM D 2464. CONFORMING TO ASTM D-1784 AND D-2241.

3. PLASTIC FITTINGS: ALL SOLVENT-WELD PVC FITTINGS SHALL MEET THE REQUIREMENTS OF SCHEDULE 40 AS SET FORTH IN ASTM D 2466. SCHEDULE 40 SOLVENT-WELD, POLYVINYL CHLORIDE (PVC) STANDARD WEIGHT AS MANUFACTURED BY SLOANE, LASCO, OR APPROVED EQUAL.

4. SOLVENT CEMENT: PVC CEMENT SHALL MEET ASTM D 2564 AND PVC CLEANER-TYPE SHALL MEET ASTM F 656.

5. SPRINKLER HEAD RISERS: SCHEDULE 40 PVC FOR RISERS. PIPE SHALL BE CUT WITH A STANDARD PIPE CUTTING TOOL WITH SHARP CUTTERS. REAM ONLY TO FULL DIAMETER OF PIPE AND CLEAN ALL ROUGH EDGES OR BURRS. CUT ALL THREADS ACCURATELY WITH SHARP DIES. NOT MORE THAN THREE(3) FULL THREADS SHALL SHOW BEYOND FITTINGS WHEN PIPE IS MADE UP. ASSEMBLIES SHALL BE AS DETAILED.

6. AUTOMATIC CONTROLLER: SEE LEGEND

7. REMOTE CONTROL VALVES: SEE LEGEND

8. CONTROL WIRING: 24 VOLT SOLID UL APPROVED FOR DIRECT BURIAL IN GROUND. MINIMUM WIRE SIZE: 16 GAUGE. ALL SPLICES SHALL BE MADE WITH VALVE BOX.

9. SLEEVES FOR CONTROL WIRING: UNDER ALL WALKS AND PAVED AREAS AND WHERE INDICATED ON DRAWINGS. MINIMUM PVC SCHEDULE 40 PLASTIC PIPE.

10. SPRINKLER HEADS/ DRIP LINE: SEE LEGEND

11. QUICK COUPLING VALVES: SHALL BE NOTED ON DRAWINGS.

D. WORKMANSHIP:

1. LAY OUT WORK AS ACCURATELY AS POSSIBLE TO THE DRAWINGS. THE DRAWINGS, THOUGH CAREFULLY DRAWN, ARE GENERALLY DIAGRAMMATIC TO THE EXTENT THAT SWING JOINTS, OFFSETS, AND ALL FITTINGS ARE NOT SHOWN.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULL AND COMPLETE COVERAGE OF ALL IRRIGATED AREAS AND SHALL MAKE ANY NECESSARY MINOR ADJUSTMENTS AT NO ADDITIONAL COST TO THE OWNER'S CONSTRUCTION REPRESENTATIVE.

3. ANY MAJOR REVISIONS TO THE IRRIGATION SYSTEM MUST BE SUBMITTED AND ANSWERED IN WRITTEN FORM, ALONG WITH ANY CHANGE IN CONTRACT PRICE.

E. INSTALLATION:

1. EXCAVATION AND TRENCHING:

A. PERFORM ALL EXCAVATIONS AS REQUIRED FOR THE INSTALLATION OF THE WORK, INCLUDING UNDER THIS SECTION, INCLUDING SHORING OF EARTH BANKS TO PREVENT CAVE-INS. RESTORE ALL SURFACES, EXISTING UNDERGROUND INSTALLATIONS, ETC., DAMAGED OR CUT AS A RESULT OF THE EXCAVATIONS TO AND IN A MANNER APPROVED BY THE OWNER.

B. TRENCHES SHALL BE MADE WIDE ENOUGH TO ALLOW A MINIMUM OF 6 INCHES BETWEEN PARALLEL PIPE LINES. TRENCHES FOR PIPE LINES SHALL BE MADE OF SUFFICIENT DEPTHS TO PROVIDE THE MINIMUM COVER FROM FINISH GRADE AS FOLLOWS:

- 24" MINIMUM BELOW BOTTOM PAVEMENT PER SLEEVING INSTALLATION DETAIL THIS SHEET
- MINIMUM COVER OVER IRRIGATION LINES TO HEADS/ DRIPLINE EXCEPT VEHICLE TRAFFIC AREAS ARE AS FOLLOWS:

12" COVER OVER LATERALS
18" COVER OVER MAINLINE

C. MAINTAIN ALL WARNING SIGNS, SHORING, BARRICADES, FLARES AND RED LANTERNS AS REQUIRED BY THE SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY AND LOCAL ORDINANCES.

2. PIPE LINE ASSEMBLY:

A. INSTALL REMOTE CONTROL VALVES WHERE SHOWN AND GROUP TOGETHER WHERE PRACTICAL, PLACE NO CLOSER THAN 6 INCHES TO WALK EDGES, BUILDINGS AND WALLS.

B. PLASTIC PIPE AND FITTINGS SHALL BE SOLVENT WELDED USING SOLVENTS AND METHODS RECOMMENDED BY MANUFACTURER OF THE PIPE, EXCEPT WHERE SCREWED CONNECTIONS ARE REQUIRED. PIPE AND FITTINGS SHALL BE THOROUGHLY CLEANED OF DIRT, DUST AND MOISTURE BEFORE APPLYING SOLVENT WITH A NON-SYNTHETIC BRISTLE BRUSH.

C. PIPE MAY BE ASSEMBLED AND WELDED ON THE SURFACE. SNAKE PIPE FROM SIDE TO SIDE OF TRENCH BOTTOM TO ALLOW FOR EXPANSION AND CONTRACTION.

D. MAKE ALL CONNECTIONS BETWEEN PLASTIC PIPE AND METAL VALVES OR STEEL PIPE WITH THREADED FITTINGS USING PLASTIC MALE ADAPTERS.

3. SPRINKLER HEADS/ DRIPLINE:

A. INSTALL ALL SPRINKLERS/ DRIPLINE AS DETAILED ON DRAWINGS.

B. DO NOT SCALE PLANS FOR EXACT HEAD LOCATION.

C. PROVIDE A MINIMUM OF 4" BETWEEN SPRINKLERS/ DRIPLINE AND PAVEMENT/ BUILDINGS.

4. CLOSING OF PIPE AND FLUSHING LINES:

A. CAP OR PLUG ALL OPENINGS AS SOON AS LINES HAVE BEEN INSTALLED TO PREVENT THE ENTRANCE OF MATERIALS THAT WOULD OBSTRUCT THE PIPE. LEAVE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION.

B. THOROUGHLY FLUSH OUT ALL WATER LINES BEFORE INSTALLING HEADS, DRIPLINE, VALVES AND OTHER HYDRANTS.

C. TEST IN ACCORDANCE WITH PARAGRAPH ON HYDROSTATIC TESTS.

D. UPON COMPLETION OF THE TESTING, THE CONTRACTOR SHALL COMPLETE ASSEMBLY AND ADJUST SPRINKLER HEADS FOR PROPER DISTRIBUTION.

5. INSPECTIONS:

A. SPRINKLER/ DRIPLINE LAYOUT AND SPACING INSPECTION: VERIFICATION THAT THE IRRIGATION DESIGN IS ACCURATELY INSTALLED IN THE FIELD. IT WILL ALSO PROVIDE FOR ALTERATION OR MODIFICATION OF THE SYSTEM TO MEET FIELD CONDITIONS. SPACING SHOULD BE WITHIN 5% OF THE DESIGN SPACING.

B. PIPE INSTALLATION DEPTH INSPECTION: ALL PIPES IN THE SYSTEM SHALL BE INSTALLED TO DEPTHS AS PREVIOUSLY DESCRIBED IN SECTION 'E' OF THESE SPECIFICATIONS.

C. OPEN TRENCH INSPECTION: THE TRENCH AND ALL JOINTS AND EVERY TRANSITION IN PIPE SIZE, WILL BE OPEN WHERE OPEN TRENCH INSPECTION IS REQUIRED.

D. INSPECTIONS WILL BE PERFORMED THROUGHOUT THE DURATION OF THE INSTALLATION. INSPECTION MAY BE MADE BY THE GOVERNING AGENCY/ OWNER TO ENSURE COMPLIANCE WITH DESIGN INTENT, SPECIFICATIONS, AND THE IRRIGATION CODES.

6. HYDROSTATIC TESTS:

A. REQUEST THE PRESENCE OF THE OWNER IN WRITING AT LEAST 48 HOURS IN ADVANCE OF TESTING.

B. TESTING TO BE ACCOMPLISHED AT THE EXPENSE OF THE CONTRACTOR AND IN THE PRESENCE OF THE OWNER.

C. CENTER LOAD PIPING WITH SMALL AMOUNT OF BACKFILL TO PREVENT ARCHING OR SLIPPING UNDER PRESSURE.

D. APPLYING A CONTINUOUS AND STATIC WATER PRESSURE OF 125 PSI WHEN WELDED PLASTIC JOINTS HAVE CURED AT LEAST 3 HOURS AND WITH THE RISERS CAPPED AS FOLLOWS:

- MAIN LINES AND SUBMAINS TO BE TESTED FOR 2 HOURS.
- NO PRESSURE LOSS IS ALLOWED FOR SOLVENT WELD MAINLINE/ PIPE.

E. FOR PVC AND O-RING GASKET PIPE THE ALLOWABLE LEAKAGE SHALL NOT EXCEED THE NUMBER OF GALLONS PER HOUR AS DETERMINED BY THE FOLLOWING FORMULA:

$$L = NP^0.75 \times 1.850$$

IN WHICH:

L=ALLOWABLE LEAKAGE, IN GALLONS PER HOUR

N=NUMBER OF JOINTS

D=PIPE DIAMETER IN INCHES

P=AVERAGE TEST PRESSURE IN PSI GAUGE

F. REPAIR LEAKS RESULTING FROM TESTS.

7. AUTOMATIC CONTROLLERS:

A. CONNECT REMOTE CONTROL VALVES TO CONTROLLER IN A CLOCKWISE SEQUENCE TO CORRESPOND WITH STATION SETTING BEGINNING WITH STATIONS 1, 2, 3, ETC.

8. AUTOMATIC CONTROL WIRING:

A. INSTALL CONTROL WIRING, SPRINKLER MAINS AND LATERALS IN COMMON TRENCHES WHEREVER POSSIBLE.

B. INSTALL CONTROL WIRES AT LEAST 18" BELOW FINISHED GRADE AND SNAKE WIRE SIDE TO SIDE IN TRENCH BELOW MAIN LINE. EXPANSION CURLS SHALL BE PROVIDED WITHIN THREE (3) FEET OF EACH WIRE CONNECTION TO SOLENOID AND AT LEAST EVERY THREE HUNDRED (300') FEET IN LENGTH. (EXPANSION CURLS ARE FORMED BY WRAPPING AT LEAST FIVE (5) TURNS OF WIRE AROUND A ROD OR PIPE 1" OR MORE IN DIAMETER, THEN WITHDRAWING THE ROD).

C. CONTROL WIRE SPLICES WILL BE ALLOWED ONLY RUNS OVER 1000 FT. CONNECTIONS SHALL BE IN VALVE BOX AND LOCATION TO BE SHOWN ON AS-BUILT PLANS.

D. ALL WIRING PASSING UNDER EXISTING OR FUTURE PAVING, CONSTRUCTION, ETC., SHALL BE ENCASED IN PLASTIC OR GALVANIZED STEEL CONDUIT EXTENDING AT LEAST 24" BEYOND EDGES OF PAVING OR CONSTRUCTION.

9. BACKFILL AND COMPACTING:

A. AFTER SYSTEM IS OPERATING AND REQUIRED TESTS AND INSPECTIONS HAVE BEEN MADE, BACKFILL EXCAVATIONS AND TRENCHES WITH CLEAN SOIL, FREE OF RUBBISH. INITIAL BACKFILL MATERIAL TO 6 INCHES ABOVE THE TOP OF PIPE SHALL BE FREE OF ROCKS OR STONES LARGER THAN ONE INCH IN DIAMETER. BACKFILL MATERIAL SHALL BE FREE OF ROCKS OR STONES LARGER THAN 3 INCHES IN DIAMETER.

B. BACKFILL FOR ALL TRENCHES, REGARDLESS OF THE TYPE OF PIPE COVERED, SHALL BE COMPACTED TO MINIMUM 90% DENSITY.

C. COMPACT TRENCHES IN AREAS TO BE PLANTED BY THOROUGHLY FLOODING THE BACKFILL. JETTING PROCESS MAY BE USED IN THOSE AREAS.

D. DRESS OFF ALL AREAS TO FINISH GRADES.

10. PROTECTIVE RADIUS OF EXISTING TREES:

A. AN AUGER IS TO BE USED TO TUNNEL UNDER EXISTING TREES IF IRRIGATION IS INSTALLED WITHIN THE PROTECTIVE RADIUS OF EXISTING TREES AND ONLY IF THERE IS NO OTHER OPTION OR TO DO SO CREATES AN UNREASONABLE HARDSHIP.

1. REMOVE FROM THE SITE ALL DEBRIS RESULTING FROM WORK OF THIS SECTION.

F. CLEAN-UP:

ADDISON GALAXY FBO

15.67 ACRES
EDWARD COOK SURVEY
ABSTRACT NO. 326
SUBMITTED: 10/23/2019

OWNER:
Black Forest Ventures
25 Waterway Ave
Suite 225
The Woodlands, TX 77380

CIVIL ENGINEER:
Kimley Horn
1400 Woodloch Drive
Suite 225
The Woodlands, TX 77380
Phone: (281) 475-2816

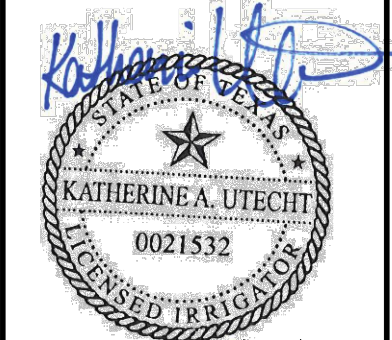
LANDSCAPE ARCHITECT:
Kimley Horn
13455 Noel Rd,
Two Galleria Office Tower
Suite 700
Dallas, TX 75240
Contact: Patrick B. Hart, PLA
Phone: (972) 770-1300

ADDISON GALAXY FBO
15601 ADDISON RD.
PREPARED FOR
BLACK FOREST VENTURE

SHEET NUMBER
LI 2.01

ADDENDUM #1	ADDENDUM #5	ADDENDUM #6	ADDENDUM #8	NO.	REVISIONS	DATE	BY
09/06/19	10/24/2019	12/17/2019	01/08/2020				
KS	KU	KU	KS				

Kimley»Horn



KHA PROJECT 067792503	DATE 01/08/2020	SCALE AS SHOWN	DESIGNED BY KAU	DRAWN BY EC KAU	CHECKED BY KAU
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IRRIGATION
DETAILS & SPECS

DALLAS, TEXAS

ADDISON