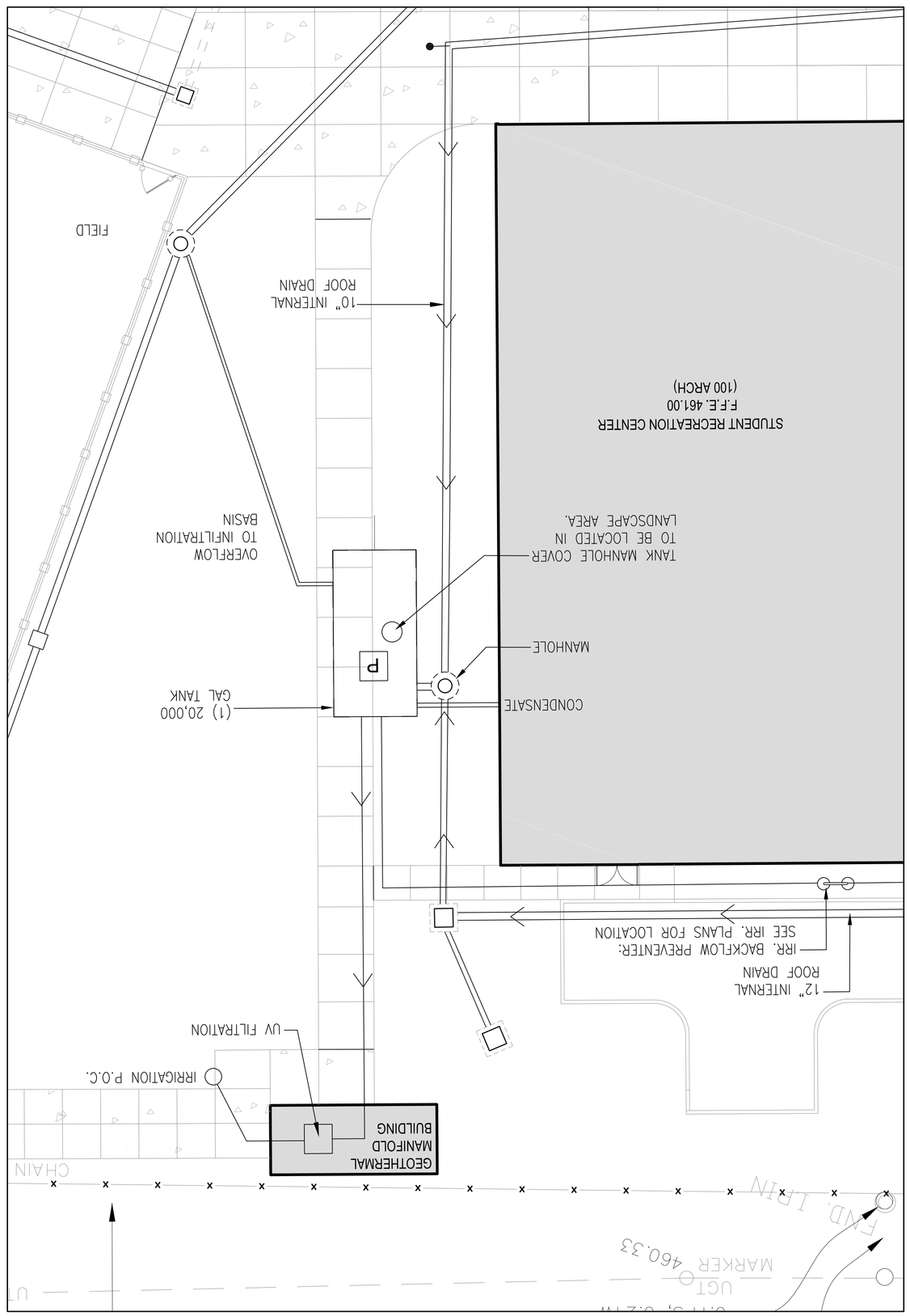
PURPOSE OF THESE DRAWINGS IS TO REFLECT ALL CHANGES AND CLARIFICATIONS MADE THRU PREVIOUSLY ISSUED ADDENDA. CONTRACTOR IS RESPONSIBLE FOR ADHERENCE TO IMPROVEMENTS REFLECTED IN THE CONTRACT BIDS AND SPECIFICATIONS.

FOR LOCATION OF UNDERGROUND UTILITIES, CALL B.U.D. 1-502-266-5123 (2) WORKING DAYS IN ADVANCE OF DIGGING

SD-10.0

Consolidated Addenda 3-11-12

A WATER HARVESTING DIAGRAM
SCALE: 1"=10'-0"



B WATER HARVESTING PERFORMANCE SPECIFICATIONS
SCALE: NTS

PERFORMANCE SPECIFICATIONS

A COMPLETE RAINWATER HARVESTING SYSTEM WILL BE PROVIDED AS A SYSTEM IN WHICH ALL COMPONENTS ARE INTEGRATED TO WORK IN CONJUNCTION WITH THE DESIGNED IRRIGATION SYSTEM. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE INSTALLATION AND TO PROVIDE A COMPLETE, WORKABLE SYSTEM. THE RAINWATER HARVESTING SYSTEM SHALL BE DESIGNED IN CONFORMANCE WITH THE IRRIGATION SYSTEM SO THAT THE MAXIMUM LEED POINTS CAN BE OBTAINED BY THE OWNER FOR THE WATER EFFICIENCY CRITERIA IN THE USGBC LEED CRITERIA SCORING SHEET.

THE FOLLOWING ARE THE INTEGRATED COMPONENTS OF THE SYSTEM THAT ARE REQUIRED.

RAINWATER HARVESTING TANK/CISTERN

1. UNDERGROUND TANK(S) WITH MANHOLE ACCESS AND HINGED MANHOLE COVER(S) (REFERENCE NON-POTABLE WATER SUPPLY ON COVER). MANHOLE SHALL BE ADEQUATE FOR PERSONEL MAINTENANCE AND REMOVAL AND INSTALLATION OF ALL EQUIPMENT CONTAINED IN THE TANK
2. FIBERGLASS TANK(S) WITH A TOTAL 20,000 GALLON CAPACITY. (REFERENCE GRADING AND DRAINAGE PLAN FOR PIPE FLOW ELEVATIONS THAT NEED TO BE MAINTAINED).
3. PROVIDE TANK INLETS FOR ONE TEN INCH (10") ROOF WATER INLET AND ONE TWO INCH (2") CONDENSATE INLET PIPES.
4. SHOULD MULTIPLE TANKS BE UTILIZED, THE TANKS SHALL BE CONNECTED WITH AN ADEQUATE MANIFOLD SYSTEM.
5. TANK SHALL BE INSTALLED ON AN ADEQUATE BASE. ANCHORING OR TIE-DOWN MEANS AS RECOMMENDED BY THE MANUFACTURER TO PROVIDE A MEANS FOR LEVELING AND STABILITY. TANK BACKFILL SHALL ALSO BE PROVIDED IN COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL INSTALL TANK TO INSURE TANK "FLOATING" AND STABILITY.
6. PROVIDE AN OVERFLOW PIPE DIRECTED TO THE STORM DRAINAGE MANHOLE AS INDICATED
7. PROVIDE A PUMP DISCHARGE PIPE DIRECTED TO THE UV FILTRATION UNIT
8. PROVIDE AN ADEQUATELY SIZED VENT PIPE FOR RAINWATER HARVESTING TANKS.
9. THE TANK DEPTH SHALL COORESPOND TO STORM AND ROOF LEADER PIPING THAT DISCHARGE INTO THE TANK.
10. ALL TANK REQUIREMENTS SHALL BE IN COMPLIANCE WITH LOCAL HEALTH CODES.

FILTRATION

PROVIDE AN ULTRA VIOLET (UV) IN-LINE FILTRATION SYSTEM THAT IS ADEQUATELY SIZED TO BE COMPATIBLE WITH THE IRRIGATION SYSTEM AS SHOWN ON THE PLANS. STRAINER SHALL BE ADEQUATE FOR FILTERING ROOF AND SITE GRIT AND DEBRIS THAT IS TYPICAL OF A BUILDING AND SITE SIMILAR TO THE PROPOSED PROJECT.

PROVIDE AN INLINE BASKET STRAINER WITH ACCESS FOR CLEANING FOR INCOMING WATER AT THE CONCRETE INTERCEPTING MANHOLE

ADDENDUM #3: ITEM #14
DATED 3-08-2012

PROVIDE AN INLINE BASKET STRAINER WITH ACCESS FOR CLEANING FOR THE WASHING MACHINE LINE

2. PROVIDE A ULTRA VIOLET (UV) IN-LINE FILTRATION SYSTEM THAT IS ADEQUATELY SIZED TO BE COMPATIBLE WITH THE IRRIGATION DISCHARGE REQUIREMENTS. PROVIDE 2 ADDITIONAL SPARE LAMPS FOR EACH UV CANTRIDGE FOR FUTURE USE BY THE OWNER
3. UV FILTRATION WILL BE MOUNTED ON THE WALL OF THE MAINTENANCE BUILDING ADJACENT TO THE IRRIGATION AND PUMP CONTROL PANELS.

PUMP AND PUMP CONTROLS

1. THE PUMP WILL BE A SUBMERSIBLE PRESSURE PUMP THAT IS PLACED IN THE RAIN TANK. POWER FOR THE PUMP WILL BE SUPPLIED IN ACCORDANCE WITH ALL APPLICABLE CODES. A POWER CIRCUIT WILL BE SUPPLIED FROM THE SAC BUILDING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SUPPLIED POWER FROM BUILDING WITH THE PUMP. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL NECESSARY CONDUIT, WIRING AND PANEL BREAKERS NECESSARY FOR THE PUMP. VOLTAGE, ETC. SHALL BE COMPATIABLE W/ BUILDING SERVICE. PUMP SHALL BE EITHER 277V/1Ø OR 420V/3Ø PHASE.
2. THE PUMP WILL BE DESIGNED TO PROVIDE THE NECESSARY FLOW AND PRESSURE AS REQUIRED FOR PROPER OPERATION OF THE IRRIGATION SYSTEM. THE NECESSARY OPERATING FLOW AND PRESSURE FOR THE IRRIGATION SYSTEM IS 50 GPM AT 80 PSI OPERATING PRESSURE. THE PUMP SHALL BE SIZED FOR SPECIFIC CONDITIONS OF SITE. THE CONTRACTOR WILL BE REQUIRED TO DETERMINE SPECIFIC PUMP REQUIREMENTS AND TO VERIFY FLOW, PRESSURES AND OPERATING HEAD FOR THE PUMP.
3. THE PUMP SHALL BE PLACED IN A FLOW INDUCER SLEEVE AND SHALL HAVE A SUCTION END SCREEN. THE ASSEMBLY SHALL BE COORDINATION OF ELECTRICAL REQUIREMENTS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE PUMP WILL BE CONTROLLED BY MEANS OF AN EXTERNAL CONTROL PANEL THAT IS SYNCHRONIZED WITH THE IRRIGATION CONTROLLER. THE CONTROL PANELS WILL BE LOCATED IN THE MAINTENANCE BUILDING. THE PUMP CONTROLLER SHALL CONTROL THE SYSTEM FOR PUMP START/STOP THAT IS INTEGRATED WITH THE IRRIGATION CONTROLLER AND POTABLE WATER MAKE-UP IN THE TANK.

WATER MAKE-UP SYSTEM

1. PROVIDE A WATER LEVEL FLOAT CONTROL IN THE RAIN TANK THAT IS WIRED TO PUMP CONTROLLER. THE FLOAT CONTROL WILL
2. PROVIDE A SIGNAL AND STOP SIGNAL FOR THE WATER MAKE-UP
2. PROVIDE A SOLENOID VALVE ON THE POTABLE WATER SUPPLY LINE THAT IS CONTROLLED VIA THE PUMP CONTROL PANEL BASED ON WATER LEVEL IN THE RAIN TANK
3. ALL CONDUIT AND CABLING WILL BE PROVIDED FOR BETWEEN CONTROL PANEL, SOLENOID VALVE AND FLOAT CONTROLS

GENERAL

1. THE CONTRACTOR WILL BE FULLY RESPONSIBLE FOR THE WORKABILITY OF THE RECOMMENDED PERFORMANCE.
2. ALL SUPPLY AND DISCHARGE LINES FROM AND TO THE TANK SHALL HAVE THE CAPABILITY OF BEING ISOLATED WITH MANUAL GATE VALVES CONTAINED IN VALVE BOXES. SUPPLY LINES FROM THE ROOF WATER PIPES SHALL BE FITTED WITH A CHECK VALVE TO PREVENT BACKFLOW INTO THE ROOF SUPPLY PIPES
3. SHOP DRAWINGS FOR THE RAINWATER HARVESTING SYSTEM SHALL BE PREPARED THAT PROVIDE ADEQUATE DETAIL FOR ALL SYSTEM COMPONENTS INCLUDING CUT SHEETS FOR ALL EQUIPMENT. THE SHOP DRAWINGS MUST PROVIDE FULL ENGINEERING ON COMPONENTS REQUIREMENTS. SPECIFICALLY SUCTION LINE SIZING AND SUPPORT AND SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE COMMONWEALTH OF KENTUCKY.

ADDENDUM #2: ITEM #21
DATED 2-26-2012

4. ALL WORKMANSHIP AND EQUIPMENT FOR THE RAINWATER HARVESTING SYSTEM SHALL BE GUARANTEED AND WARRANTED FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE.
5. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING OWNER TRAINING ON THE SYSTEM THAT WILL INCLUDE OPERATION AND MAINTENANCE GUIDELINES AND DEMONSTRATIONS.

University of Louisville - Student Recreational Facility (Bid Phase #4)

Louisville, Ky

100 % CD's

Drawing Name / Description	WATER HARVESTING
U of L Project Number:	
A&E Project Number:	
Date:	JANUARY, 2012
Drawn By: SDS	Checked By: JLC / KLW

#	Revision Date
1	
2	
3	
4	
5	
6	
7	
8	

Omni ARCHITECTS
212 North Upper Street
Lexington, Kentucky
40507-1001
p 859.252.6664
f 859.252.6666
www.omniarchitects.com

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