LEAKY CISTERNS

BETTER THAN GOOD,

THEY'RE GREAT!

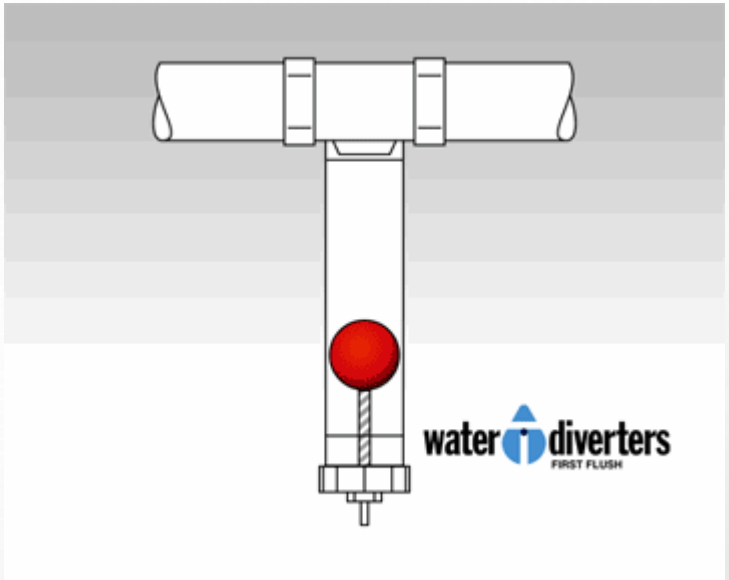
WHY HARVEST THE RAIN?

- WATER CONSERVATION
- LESS RESTRICTIONS
  - AWU LIMITS WATER DAYS
  - WASH CARS
- REDUCED STORMWATER IMPACTS
- ADDITIONAL USES
  - DRINKING WATER
  - TOILETS
  - APPLIANCES
- LOCATION HAS POOR INFILTRATION RATE
- FREE TRIP TO SPACE (WORKING ON THIS WITH SPACE X, NO PROMISES)

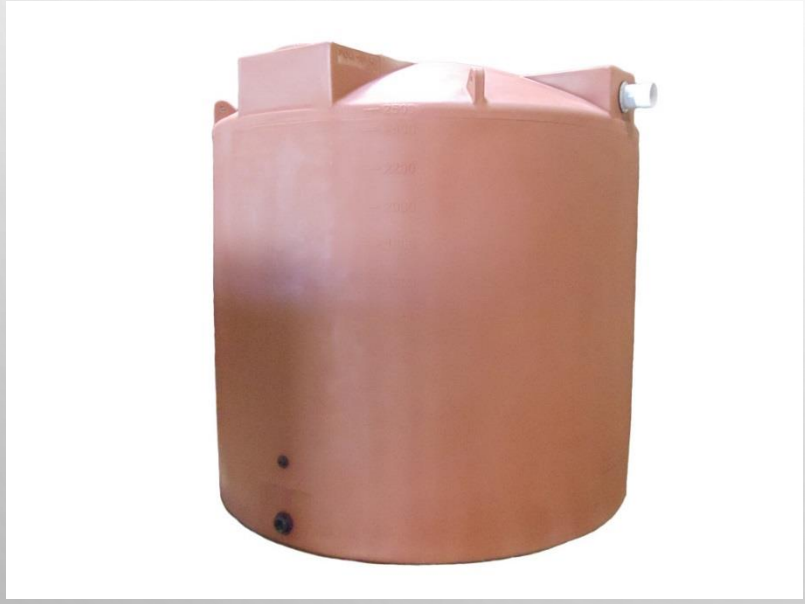
WHAT ARE THE BASIC COMPONENTS?

1. CATCHMENT
    1. ROOF
2. COLLECTION
    1. GUTTER SYSTEM
3. FILTRATION
    1. GUTTER SCREEN
    2. LEAF FILTER
    3. FIRST FLUSH
4. STORAGE
    1. ABOVE GROUND
    2. BELOW GROUND
    3. TANK TYPES
    4. OVERFLOW
        1. TO RAINGARDEN
5. TREATMENT
    1. MAINLY FOR POTABLE USE
6. DELIVERY

LEAF EATER



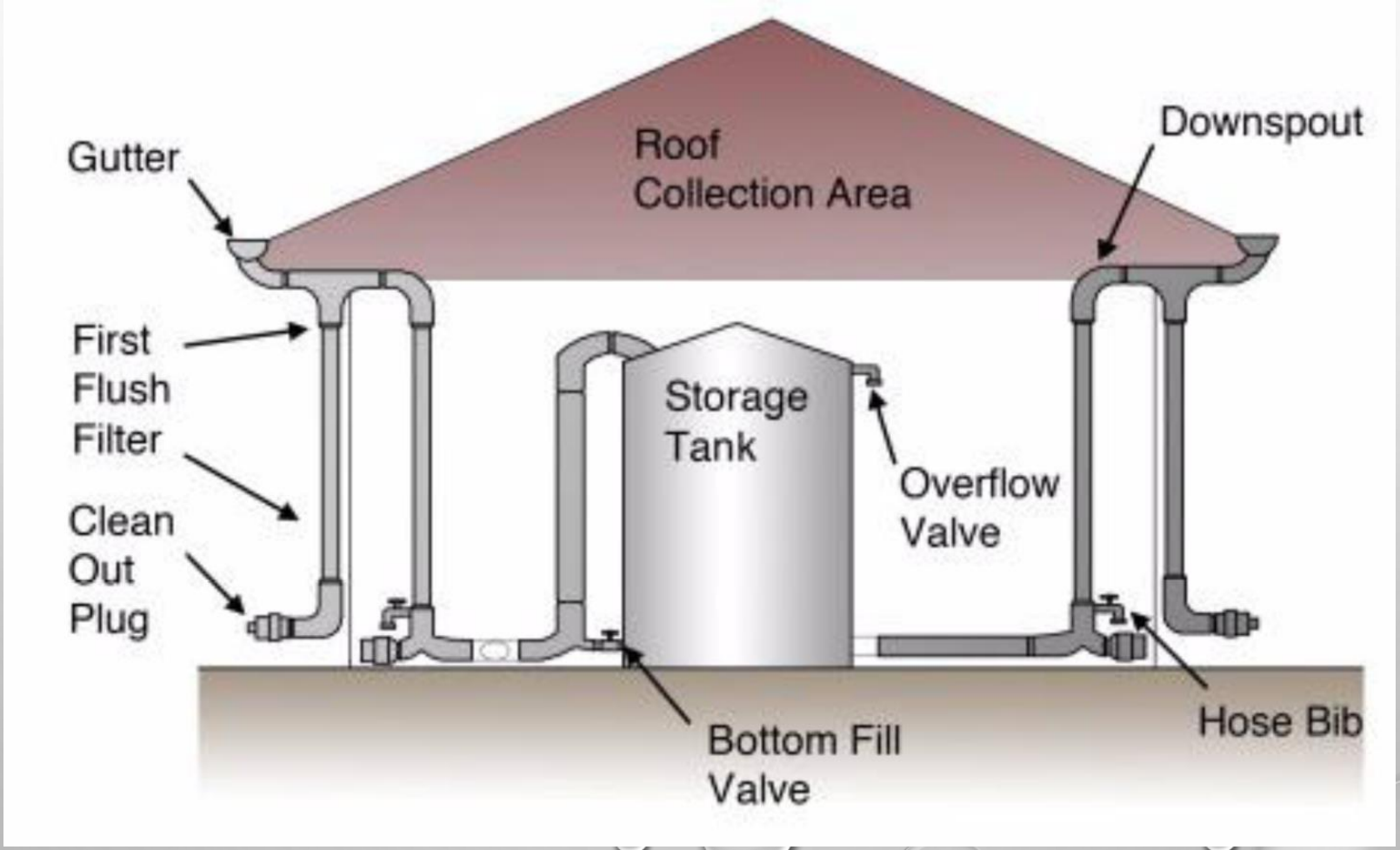
FIRST FLUSH



POLY TANK

FLAP VALVE

WHAT DOES IT LOOK LIKE?

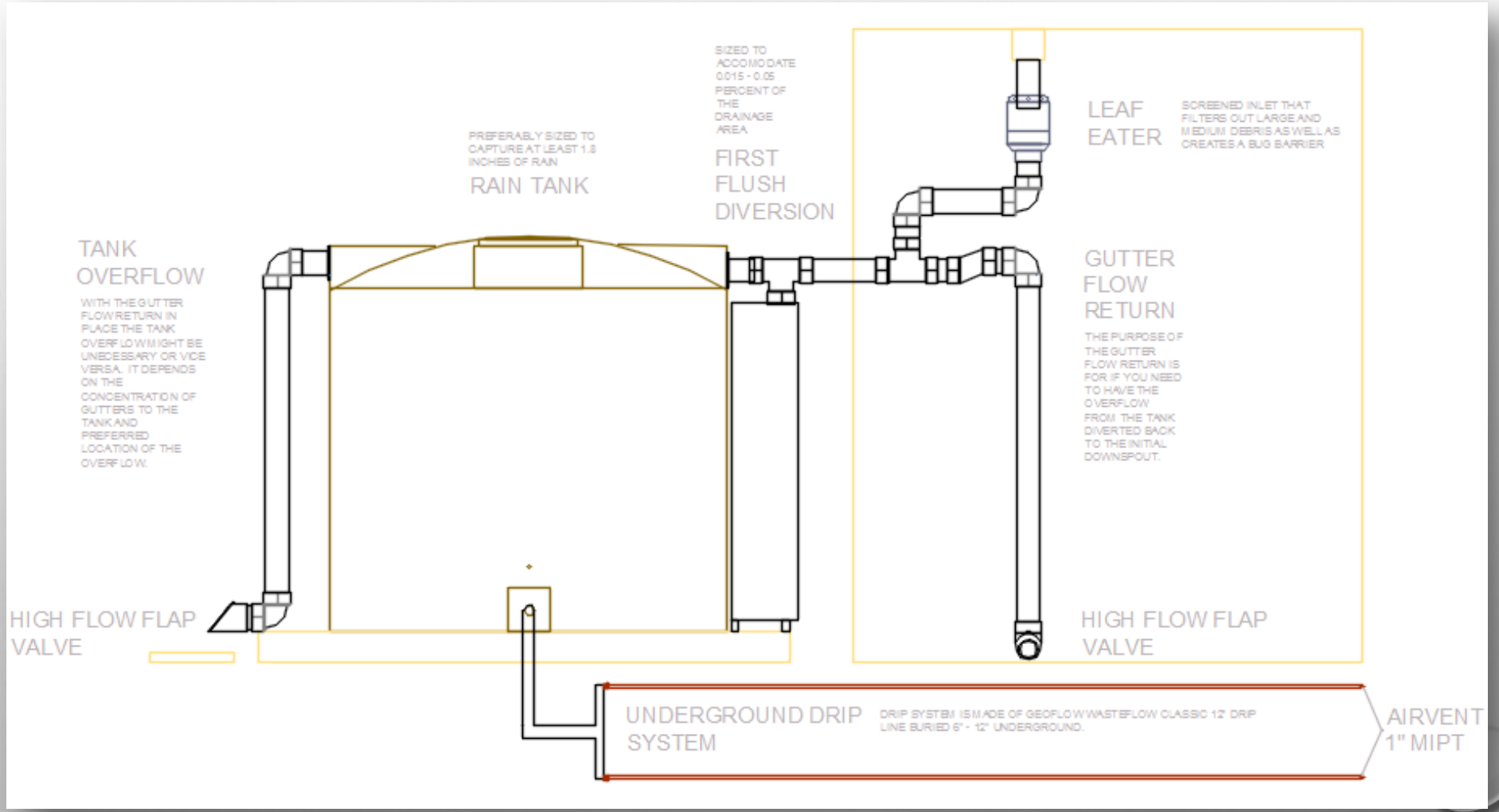


CALCULATIONS

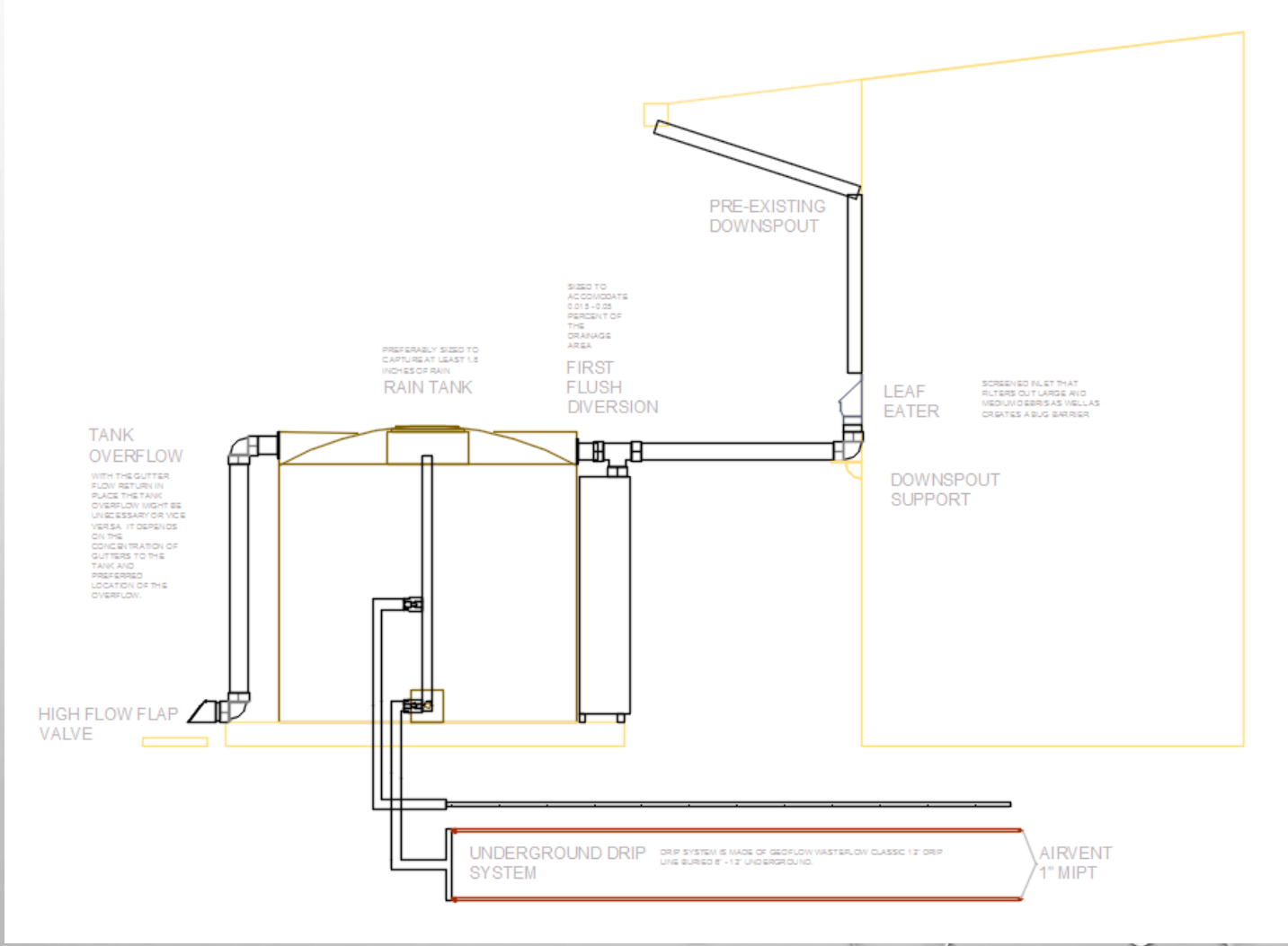
- SUPPLY
  - PLANVIEW FOOTPRINT OF ROOFTOP
- DEMAND
  - OUTDOOR
  - INDOOR
- MAKE SURE SUPPLY IS GREATER THAN DEMAND AND YOU ARE ALL GOOD
- A 2000 SQFT CATCHMENT CAN CAPTURE AROUND 2300 GALLONS WITH A 2” RAIN

WHAT IS A LEAKY CISTERN

- DESIGNED TO DRAW DOWN A PORTION OF THE STORAGE CAPACITY IMMEDIATELY FOLLOWING RAIN EVENT
- CAN BE PASSIVE OR AUTOMATED
- DONE THROUGH UNDERGROUND INFILTRATION SYSTEM OR SLOW SURFACE RELEASE
- SIZE AND METHOD BASED ON SOIL INFILTRATION RATES


SIZED TO ACCOMODATE 0.015 - 0.05 PERCENT OF THE DRAINAGE AREA
PREFERABLY SIZED TO CAPTURE AT LEAST 1.8 INCHES OF RAIN
RAIN TANK
FIRST FLUSH DIVERSION
LEAF EATER
SCREENED INLET THAT FILTERS OUT LARGE AND MEDIUM DEBRIS AS WELL AS CREATES A BUG BARRIER
TANK OVERFLOW
WITH THE GUTTER FLOW RETURN IN PLACE THE TANK OVERFLOW MIGHT BE UNECESSARY OR VICE VERSA. IT DEPENDS ON THE CONCENTRATION OF GUTTERS TO THE TANK AND PREFERRED LOCATION OF THE OVERFLOW.
GUTTER FLOW RETURN
THE PURPOSE OF THE GUTTER FLOW RETURN IS FOR IF YOU NEED TO HAVE THE OVERFLOW FROM THE TANK DIVERTED BACK TO THE INITIAL DOWNSPOUT.
HIGH FLOW FLAP VALVE
HIGH FLOW FLAP VALVE
UNDERGROUND DRIP SYSTEM
DRIP SYSTEM IS MADE OF GEOFLOW WASTEFLOW CLASSIC 12" DRIP LINE BURIED 6" - 12" UNDERGROUND.
AIRVENT 1" MIPT

CONCURRENT BI-SPEED DRAWDOWN



WATER QUALITY BENEFITS OF LEAKY SYSTEMS

- STORAGE VOLUME ABOVE CALCULATED DEMAND IS WHAT WE ARE REFERRING TO AS WATER QUALITY VOLUME
- IF THE SYSTEM IS BEING BUILT TO MEET WATER QUALITY REQUIREMENTS REFER TO COA ENVIRONMENTAL CRITERIA MANUAL 1.6.7.D
- REDUCES STORMWATER RUNOFF
  - REDUCES EROSION AND FLOODING
  - IMPROVES BASEFLOW IN STREAM
- DEEP WATERING FOR VEGETATION
- INFILTRATES INTO THE SOIL ADDING TO GROUNDWATER

PROBLEMS AND SOLUTIONS

- ROOTS GET INTO PIPES
- CONCENTRATED FLOWS FROM TANK OVERFLOW
- PIPES OR TANK UNSIGHTLY
- MAINTENANCE

- ROOT INHIBITING DRIP LINES
- FLOW REVERTS BACK TO ORIGINAL DOWNSPOUT WHEN TANK IS FULL
- PAINT PIPES, BURY PIPES, BUILD FENCE OR WALL AROUND TANK
- GROW PLANTS AROUND TANK
- BUILD PATIO OVER TANK
- GOOD FILTRATION AHEAD OF TANK GREATLY REDUCES MAINTENANCE

REBATES

- THE REBATES OFFER $.50 PER GALLON OF STORAGE FOR PASSIVE SYSTEMS AND $1PER GALLON FOR PRESSURIZED SYSTEMS. MAXIMUM OF $5000 REBATE.
- IN GENERAL AWU WANTS THE PROPERTY OWNER TO BE THE ONE THAT FILLS OUT THE REBATE FORM BECAUSE THEY WANT THEM TO BUY INTO THE WHOLE PROCESS AND BY TAKING THE TIME TO FILL AND FILE THE REBATE ACKNOWLEDGES SOME LEVEL OF KNOWLEDGE FOR THE RAIN HARVESTING EFFORT.
- YOU CAN HELP THEM GET STARTED AND FOR SOME SYSTEMS PRE-APPROVAL AND POST INSPECTIONS ARE NECESSARY WHICH MEANS IT WOULD BEHOOVE YOU TO GET THE BALL ROLLING. ROLL THE TIME IT TAKES INTO THE LABOR OF THE SYSTEM AND YOU CAN SHOW THEM THE REDUCTION OF THE COST BY INCORPORATING THE REBATE.
- YOU CAN GIVE THEM THE SITE DRAWING, SYSTEM DRAWING, AND OPERATION & MAINTENANCE GUIDE.

RESOURCES

- THE TEXAS MANUAL ON RAINWATER HARVESTING HTTP://WWW.TWDB.TEXAS.GOV/PUBLICATIONS/BROCHURES/CONSERVATION/DOC/RAINWATERHARVESTINGMANUAL_3RDEDITION.PDF
- AUSTIN WATER UTILITY RAINWATER REBATES $.50 TO $1 PER GALLON HTTPS://WWW.AUSTINTEXAS.GOV/DEPARTMENT/RAINWATER-HARVESTING-REBATES
- AWU RAINSCAPE REBATES HTTPS://WWW.AUSTINTEXAS.GOV/DEPARTMENT/WATERWISE-RAINSCAPE-REBATE
- RAINWATER CALCULATIONS FOR DEVELOPMENT PERMITS, COA ENVIRONMENTAL CRITERIA MANUAL APPENDIX R-7
- COA RAINWATER HARVESTING GUIDELINES, COA ENVIRONMENTAL CRITERIA MANUAL 1.6.7.D
- CALCULATE SOIL INFILTRATION/PERCOLATION RATE, COA ECM 1.6.7.4.D OR HTTPS://WWW.AUSTINTEXAS.GOV/SITES/DEFAULT/FILES/FILES/WATERSHED/GROWGREEN/RAINGARDEN_FACTSHEET.PDF
- RAIN GARDEN INFORMATION AND METHODS HTTPS://WWW.AUSTINTEXAS.GOV/SITES/DEFAULT/FILES/FILES/WATERSHED/GROWGREEN/RAINGARDEN_FACTSHEET.PDF
- RAIN HARVESTING MAINTENANCE, COA ECM 1.6.3.C.7