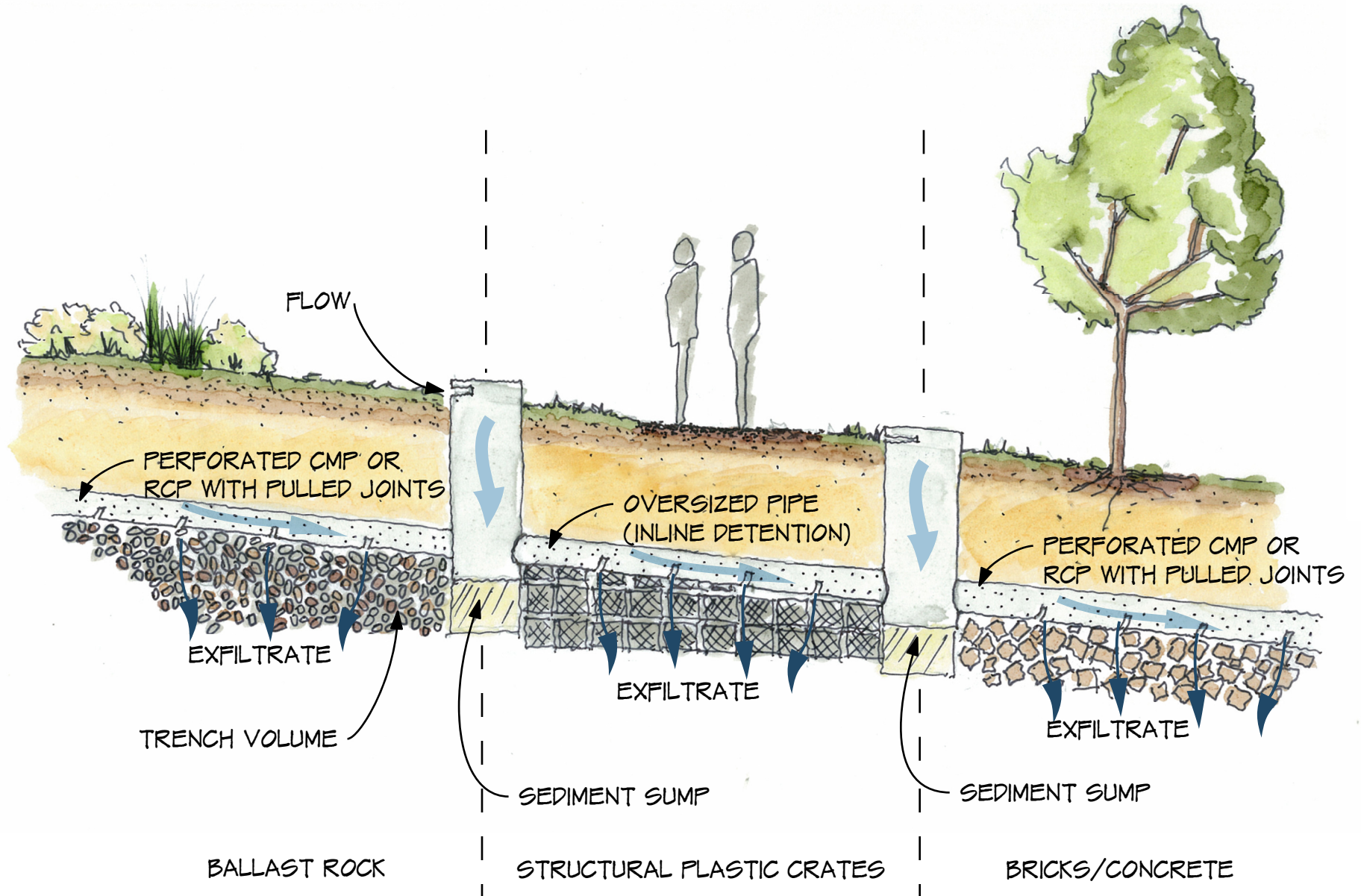
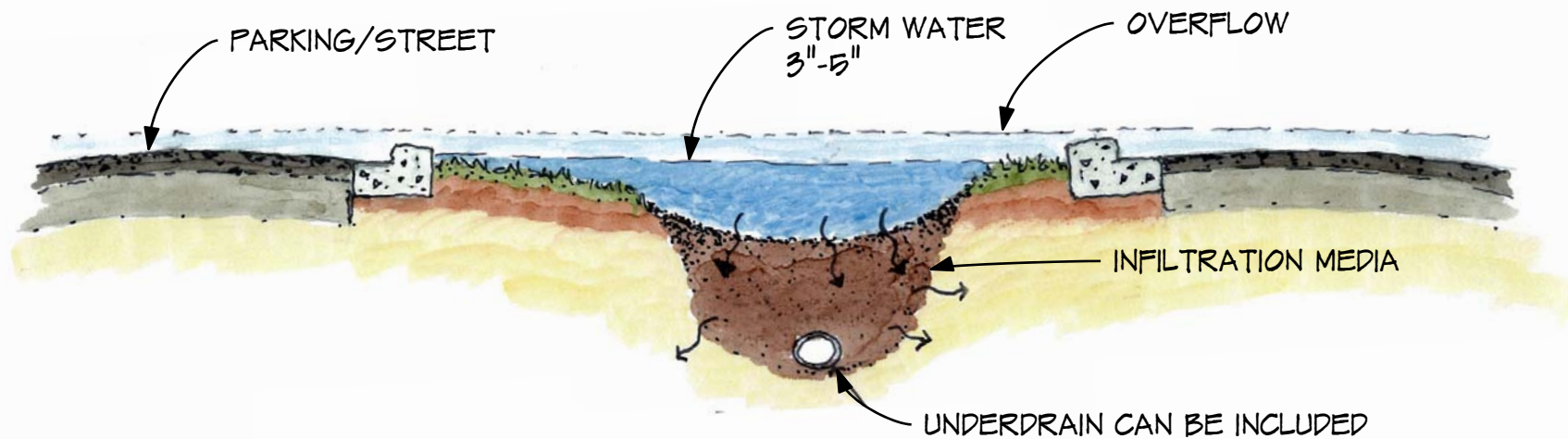


INFILTRATION TRENCH - "LEAKY PIPE"

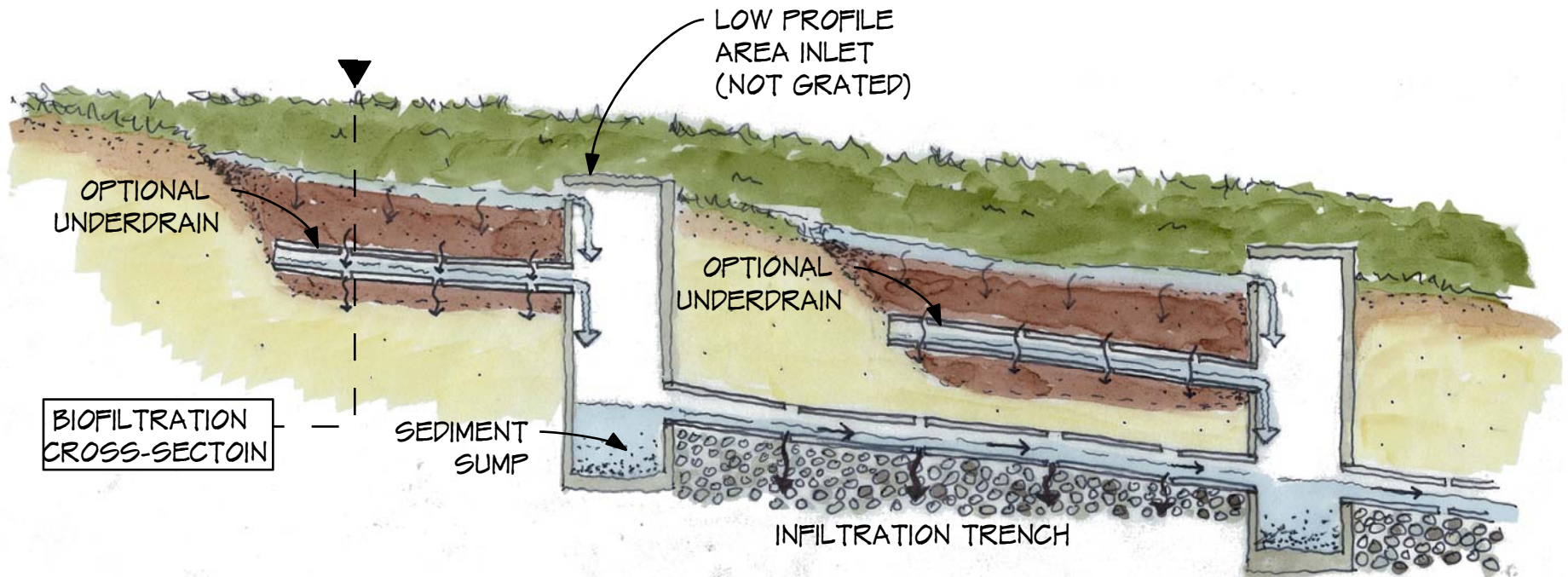
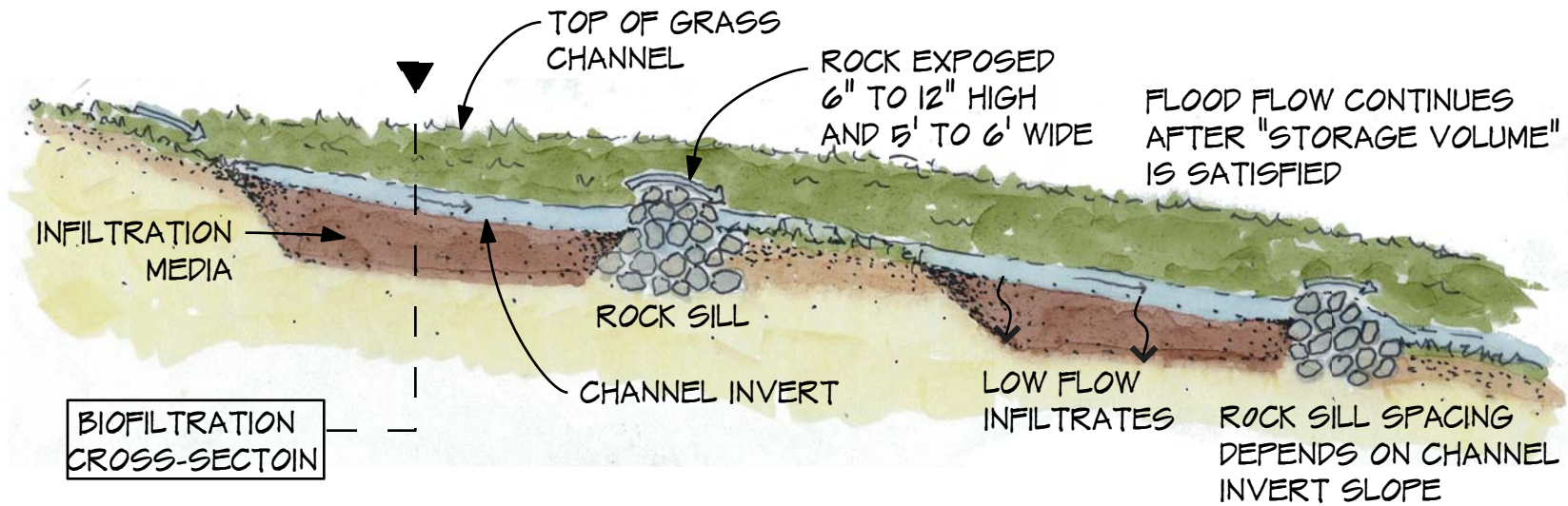


RAIN GARDEN (SMALLER) / BIOFILTRATION (LARGER)

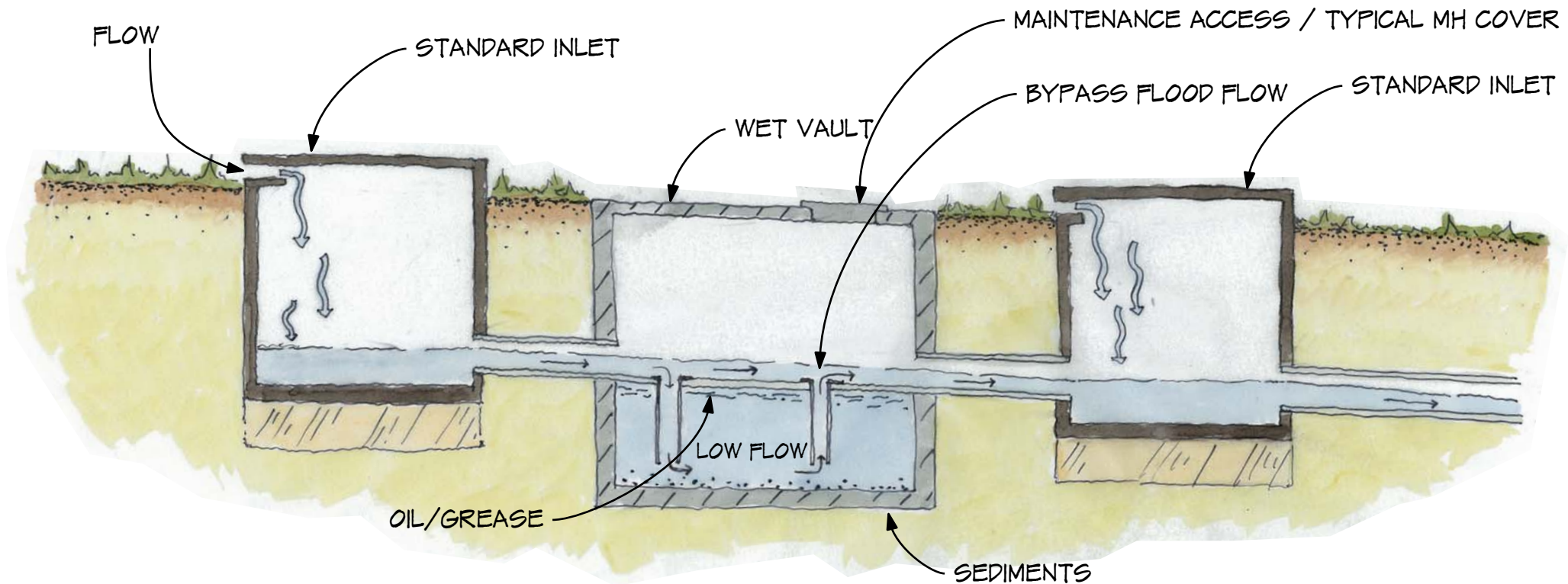


- REDUCES PEAK FLOW FOR A LONGER TIME
- FOR USE IN TRAFFIC ISLANDS, PARKING LOTS, FRONT YARDS
- INFILTRATION MEDIA ARE MODIFIED SOILS (E.G. USE RICE HULLS AND CRUSHED RECYCLED GLASS "SAND")
- USE MINIMUM 18" OF MEDIA
- STRUCTURAL PLASTIC CRATES CAN BE PLACED BELOW THE UNDERDRAIN AS STORAGE VOLUME
- EXFILTRATE OR MIGRATE DOWNSLOPE THROUGH MEDIA OR UNDERDRAIN TO NEXT STORM WATER "COMPONENT" (SEE VEGETATED SWALE)

LINEAR BIOFILTRATION

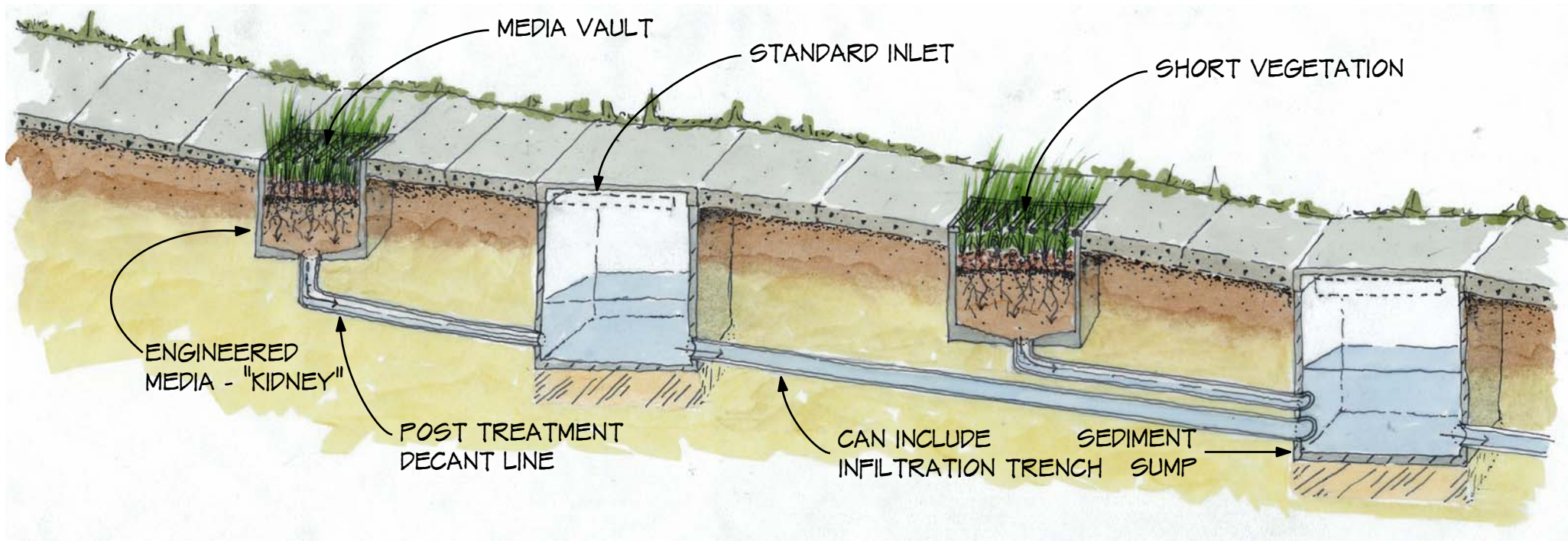


PRETREATMENT WET VAULTS (KIDNEYS)



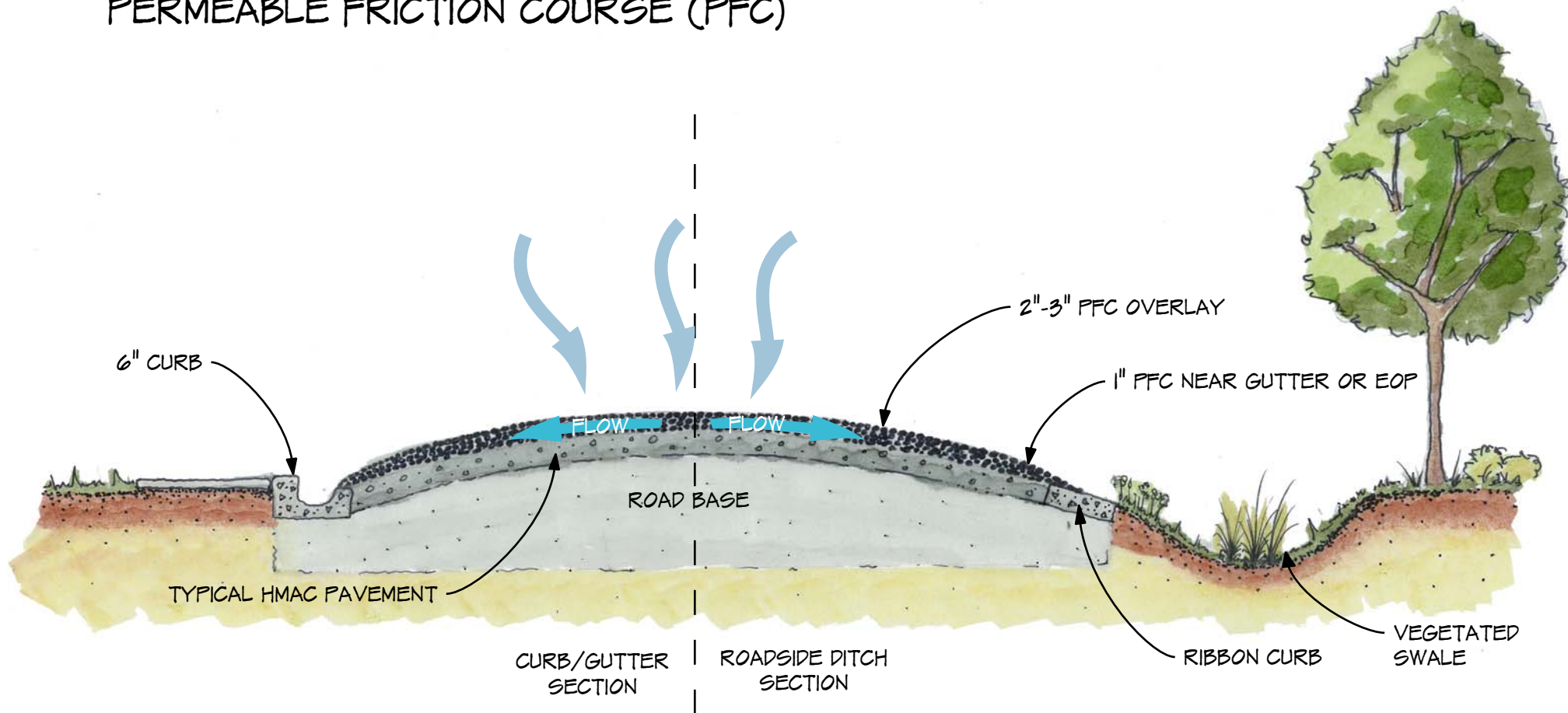
- TREATS FLOW AS IT PASSES THROUGH VS. AN "END OF PIPE" VOLUME CAPTURE
- LOW FLOW GOES THROUGH THE "BASEMENT" (SEDIMENT SETTLES AND O/G FLOATS)
- HIGH FLOWS GO STRAIGHT THROUGH AS A NORMAL STORM SEWER DESIGN
- MAINTENANCE - PUMP OUT USING SEPTIC TANK TRUCK .

PRETREATMENT MEDIA VAULTS (IN TANDEM WITH REGULAR INLETS)



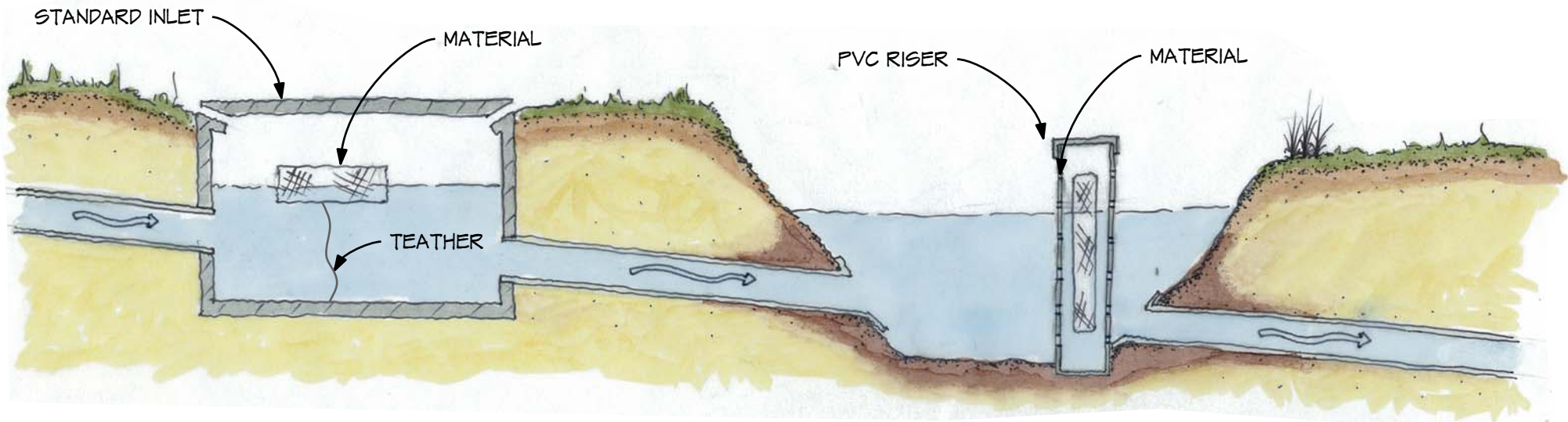
- TREATMENT TSS: 85% - 95%
- THE RUNOFF ENTERS THE MEDIA VAULT AND IS PROCESSED (TSS AND DISSOLVED POLLUTANTS REMOVED)
- THERE IS VEGETATION THRU THE "TREE WELL" GRATING ON TOP.
- USE SHORT VEGETATION LIKE GRASSES (NOT TREES)
- THE TREATED DECANT WATER EXITS INTO THE STANDARD INLET
- WHEN MEDIA VAULT CAPACITY IS EXCEEDED, BYPASS FLOWS DOWNSLOPE AND IMMEDIATELY INTO STANDARD INLET
- TREATS MORE THAN 1" RUNOFF BEFORE BYPASS OCCURS (MUST BE SIZED PROPERLY)

PERMEABLE FRICTION COURSE (PFC)



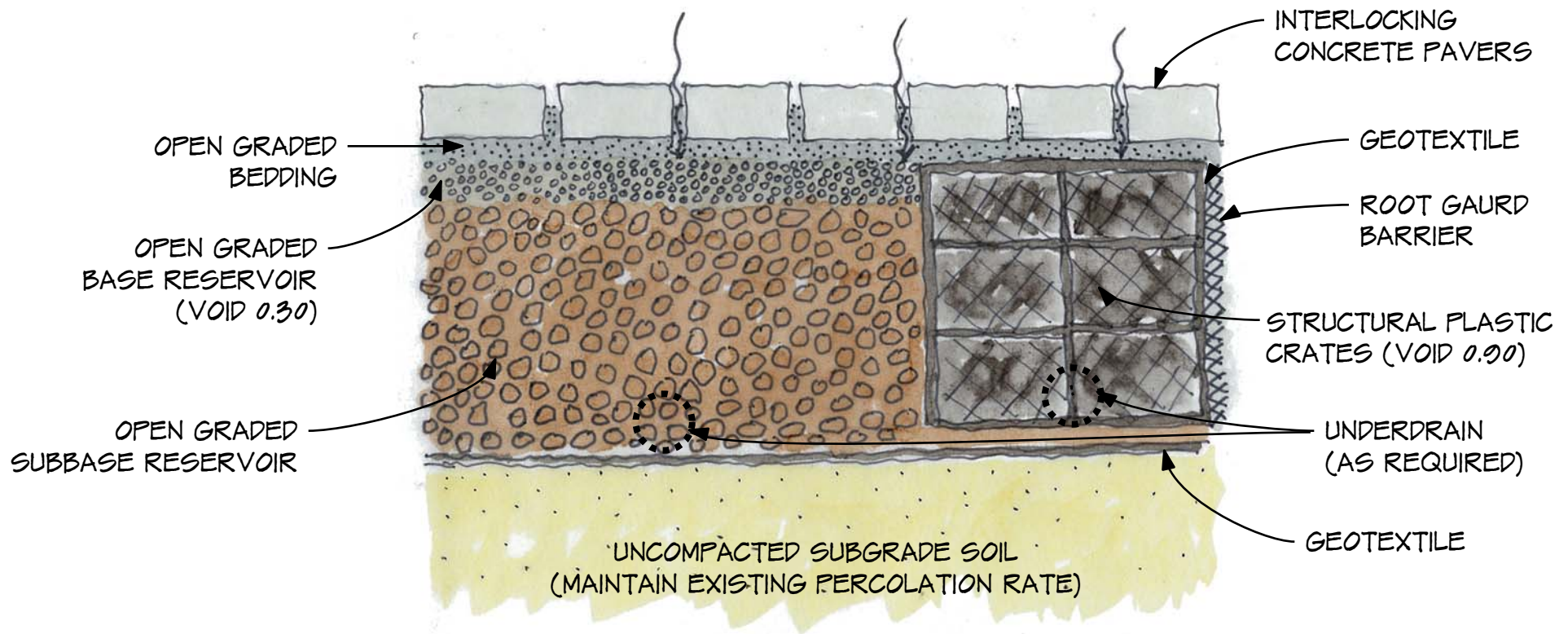
- OPEN GRADED HMAC - THE STORMWATER MOVES Laterally THROUGH THE PFC OVERLAY TO THE GUTTER
- TESTS SHOW 85% - 90% TSS REMOVAL
- PROVIDES MORE TRACTION - LESS HYDROPLANE - LESS SPRAY
- NOT JUST ADDITIONAL COMPONENT OF PAVEMENT SECTION - ACTS AS PART OF THE OVERALL STREET SECTION

OIL, GREASE REMOVAL - SMART SPONGE TREATMENT



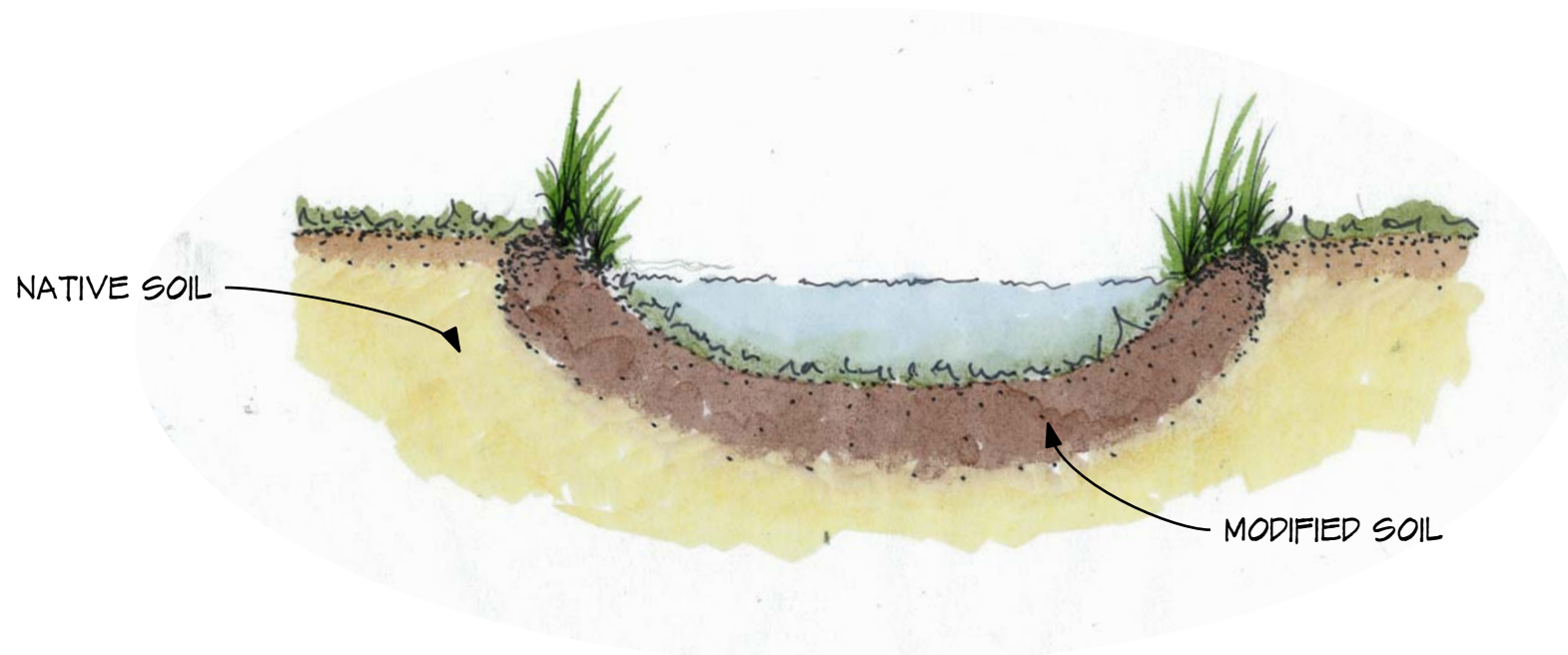
- THE WET VAULTS AND MEDIA VAULTS ALREADY ADDRESS PETRO-CHEMICAL TREATMENT
- THE STANDARD INLETS CAN HAVE A RETRO FIT USING "SMART SPONGE" BY AB TECH INDUSTRIES
- THIS MATERIAL FLOATS WHERE THE O/G IS LOCATED
- IT "BINDS" THE O/G VS. "SOAKING IT UP"
- OIL AND GREASE CANNOT BE RELEASED ONCE BOUND
- WASTE INTO LANDFILL OR BURN. ALL EPA APPROVED
- CAN BE INSTALLED IN RISERS OF DETENTION BASINS
- COMES AS PELLETS, BRICKETTES, FLAT SLABS, TUBES

PERMEABLE PAVEMENT (SIDEWALKS)



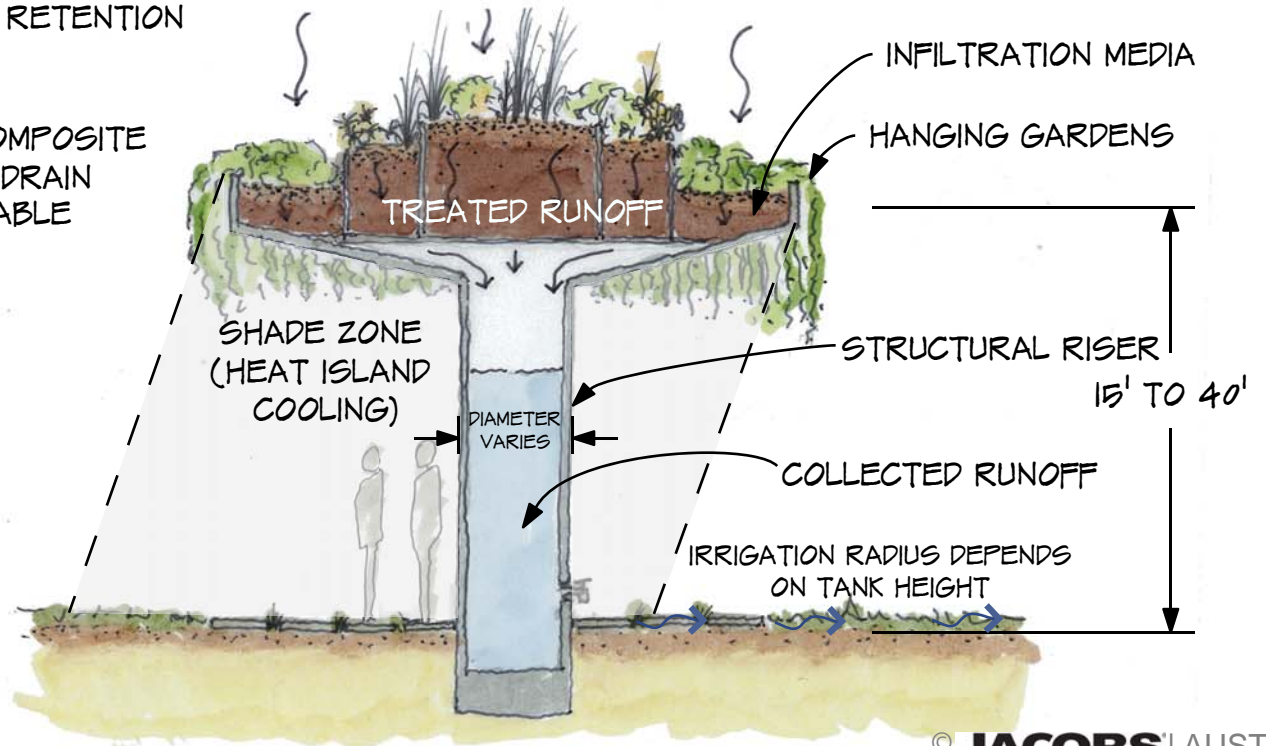
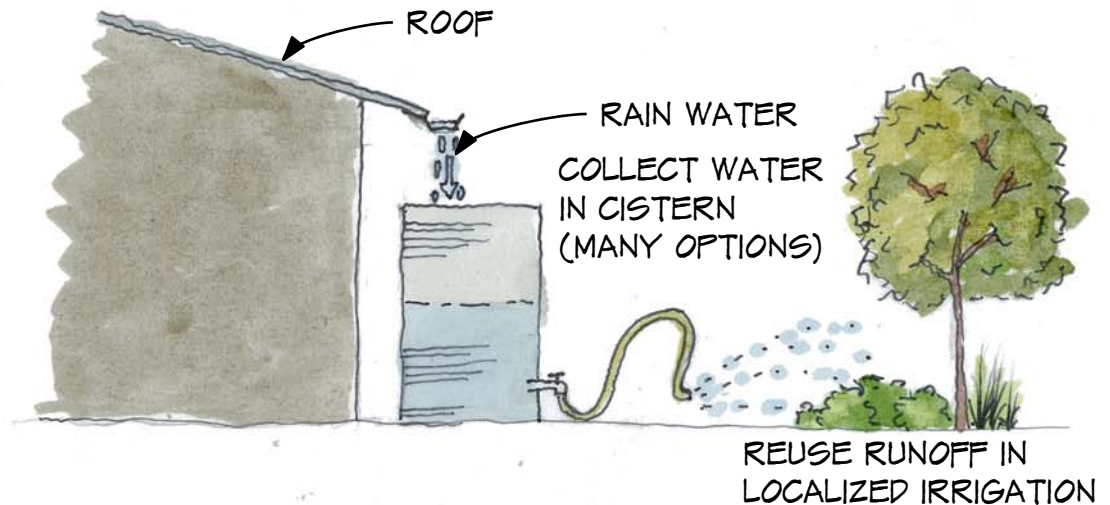
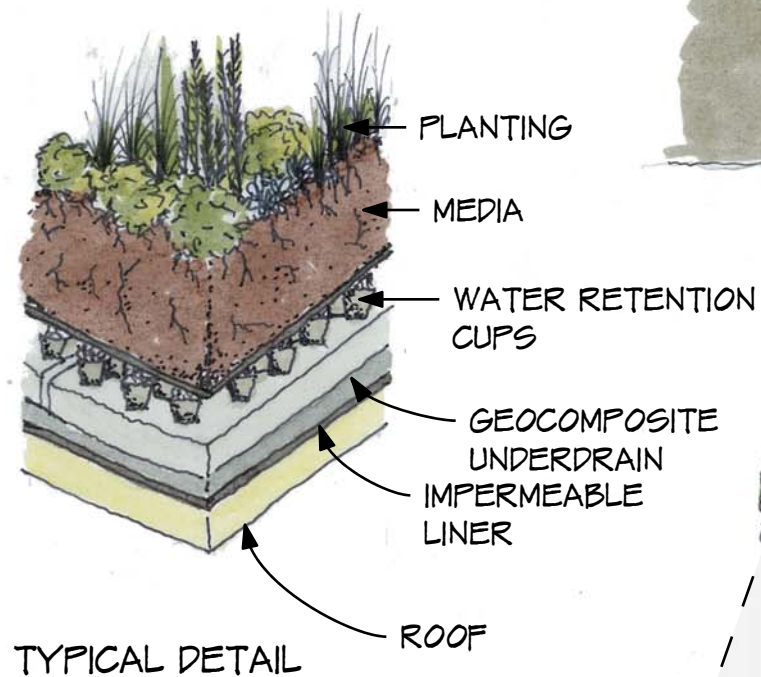
- PERMEABLE INTERLOCKING CONCRETE PAVEMENT (PICP)
- PRIMARILY A VOLUME STORAGE UNIT - SOME TREATMENT
- EVACUATION OF VOLUME THROUGH INFILTRATION, UNDERDRAIN, OR PUMP
- INFILTRATION RATES THROUGH THE PAVERS ARE EXTREMELY HIGH
- EVEN IF SURFACE CRACKS ARE CLOGGED 90%, THE INFILTRATION CAN APPROACH 10"/HR

VEGETATED SWALES / SOIL AMENDMENTS

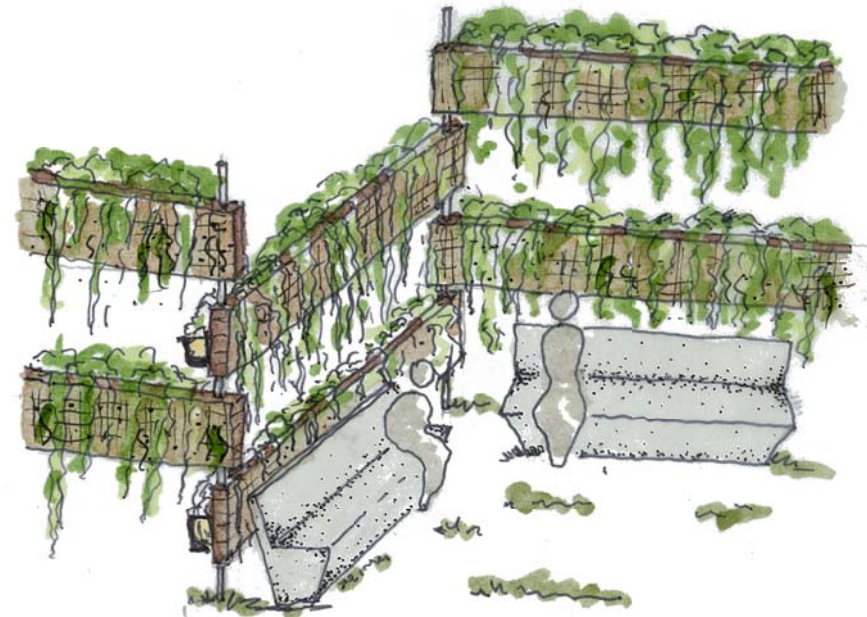
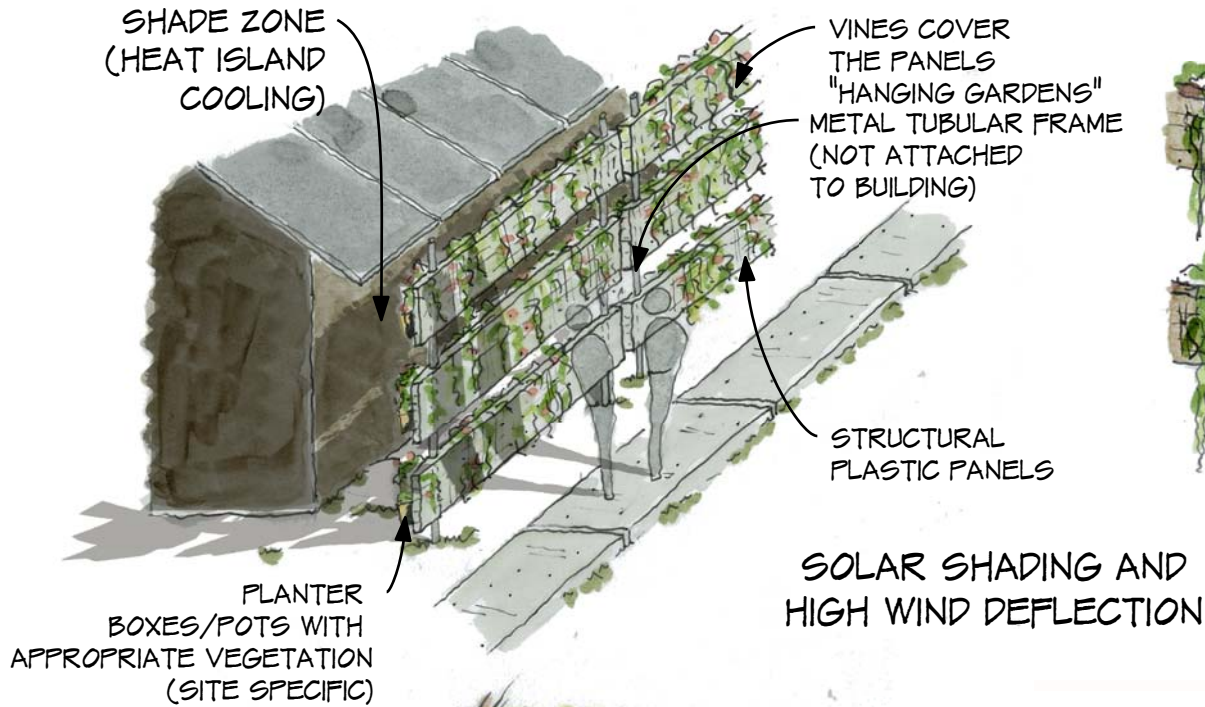


- THIS METHOD MODIFIES A LAYER OF SOIL IN A DRAINAGE SWALE
- MEDIA LAYER IS SHALLOWER IN COMPARISON TO RAIN GARDENS AND BIORETENTION
- SOIL AMENDMENTS CAN INCLUDE
 1. RICE HULLS OR OTHER RECYCLED AGRICULTURAL PRODUCTS
 2. TUMBLED GLASS (RECYCLED AND CRUSHED TO A "SAND" CONSISTENCY)
 3. BIOLOGICAL ACTIVITY (COMPOST TEA, MYCORRHIZA)
- THE GOAL IS TO SOAK UP MORE RUNOFF THAN NATIVE SOILS
- THE VEGETATED SWALE TREATS RUNOFF TO REDUCE PEAK AND REMOVE TSS

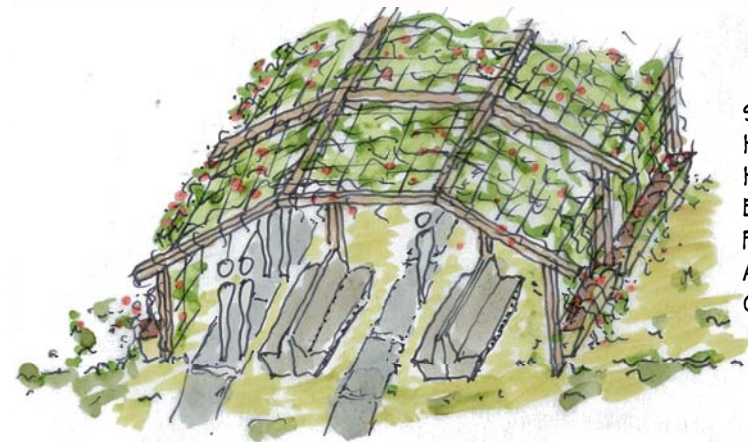
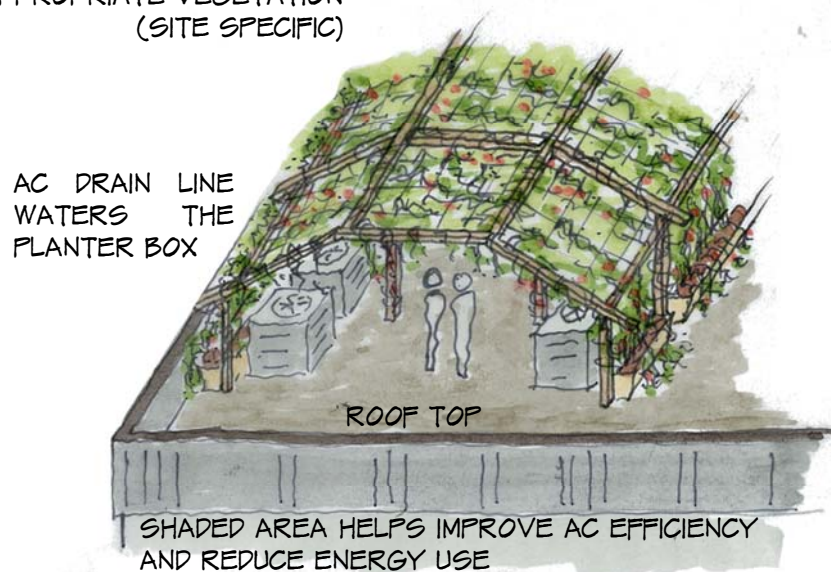
GREEN ROOF / RAIN WATER COLLECTION



GREEN WALLS AND TRELLISES

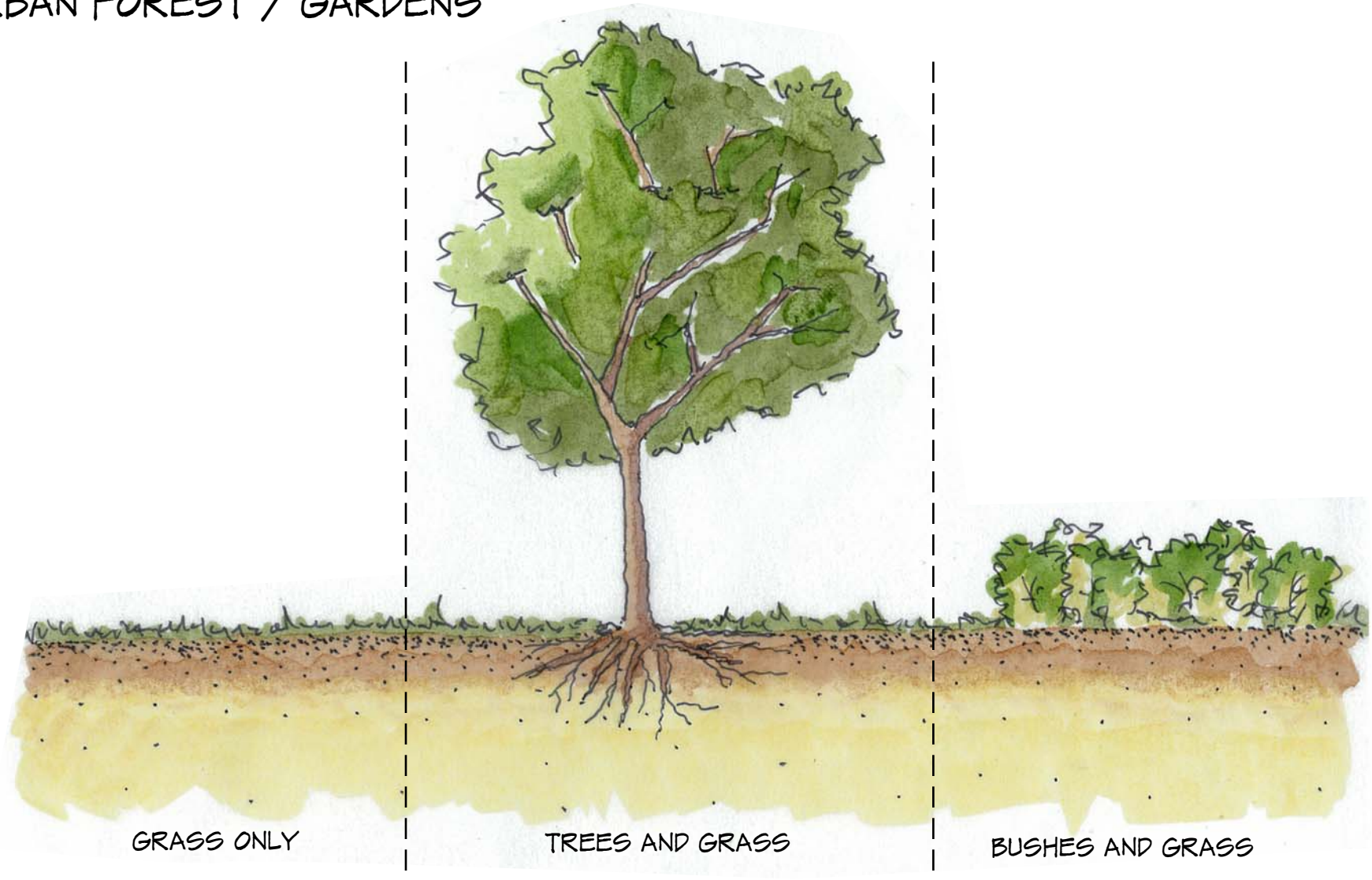


THESE STRUCTURES CAN BE "FREE STANDING"
ALONG PEDESTRIAN WALKWAYS OR EXPOSED PLAZAS
(ANCHORED IN ZEE PATTERN).



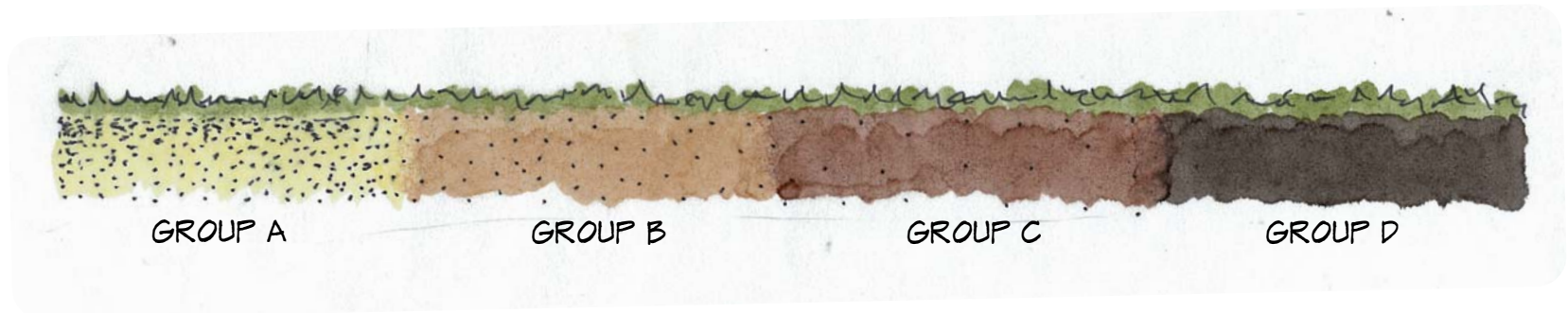
SHADED AREA
HELPS REDUCE
HEAT ISLAND
EFFECT ON THE
PAVED SURFACE
AND IMPROVES AIR
QUALITY.

URBAN FOREST / GARDENS



- ADDING UNDERSTORY BUSHES AND TREES TO A GRASS SURFACE
- RUNOFF VOLUME FOR "TREES AND GRASS" IS LOWER THAN "GRASS ONLY"
- RUNOFF VOLUME FOR "BUSHES AND GRASS" IS EVEN LOWER THAN THE "TREES AND GRASS" CONDITION

SOIL AMENDMENTS



- SOIL AMENDMENTS INCREASE THE "SPONGE EFFECT" AND INFILTRATION RATE
- GROUP A: DEEP SAND, AGGREGATED SILT. MINIMUM INFILTRATION RATE 0.30-0.45 (IN/HR)
- GROUP B: SANDY LOAM. MINIMUM INFILTRATION RATE 0.15-0.30 (IN/HR)
- GROUP C: CLAY LOAM, SHALLOW SANDY LOAM. MINIMUM INFILTRATION RATE 0.05-0.15 (IN/HR)
- GROUP D: HEAVY PLASTIC CLAYS. MINIMUM INFILTRATION RATE 0.00-0.05 (IN/HR)
- GOAL IS TO AMEND THE SOILS AND MOVE TOWARD THE GROUP A SOILS AS FAR AS POSSIBLE