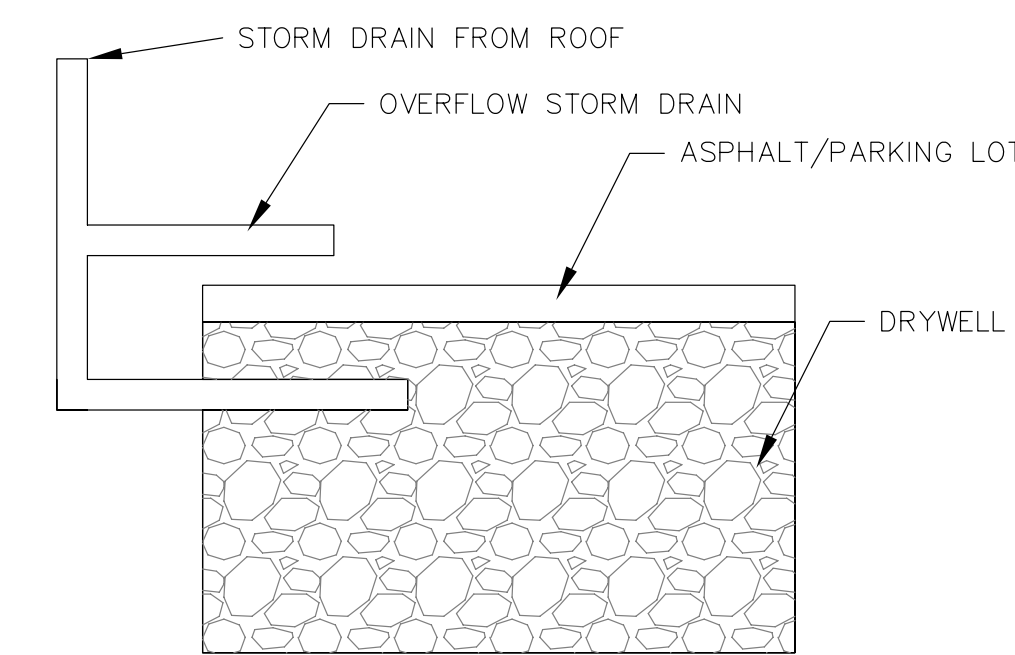


**NOTES:**

1. RAIN GARDENS ARE SIZED TO HOLD THE HALF 2 YEAR STORM (3.3") OR LESS DUE TO AVAILABILITY OF LAND. THE REST OF THE RUNOFF CAN BE STORED ONSITE IN A RAIN CISTERN, OR DRYWELL. THE RAIN CISTERN CAN BE USED FOR WATERING THE LAWNS DURING DRY PERIODS. IF THE LAWN IS WATERED BY A SPRINKLER SYSTEM, THE RAIN CISTERN COULD BE CONNECTED TO THE SPRINKLER SYSTEM. THE DRY WELL COULD BE PLACED UNDERNEATH A PARKING LOT WHERE IT WOULD STILL GIVE THE REQUIRED STRENGTH FOR A PARKING LOT BUT WORK TO INFILTRATE RUNOFF AT THE SAME TIME. BOTH DRY WELLS AND RAIN BARELS SHOULD HAVE OVER FLOW DEVICES ON THEM FOR STORMS GREATER THAN 2 YEARS.
2. THIS DESIGN WILL ALLOW FOR STORMS 3.3" AND LESS TO INFILTRATE FROM THE ROOF. WHEN LARGE STORMS OCCURS THE RAIN CISTERN AND DRAIN WELLS WILL HAVE AN OVER FLOW CONTROL TO GUIDE THE EXCESS STORM WATER TO THE STORMSEWERS. THE RAIN GARDENS WILL NOT DISTURB THE EXISTING GRADE EXCESS STORM WILL FLOW INTO THE STORMSEWER AS THEY DO NOW.
3. THE AREAS MARKED OUT FOR RAIN GARDEN IS NOT THE ONLY PLACE A RAIN GARDEN CAN BE PLACED FOR THIS PROJECT. SITING THE RAIN GARDEN IS ONLY USED TO SHOW THERE IS ROOM ON THE SITE FOR THE ADDITIONAL STORAGE. IN SOME INSTANCES THERE WAS NOT ENOUGH ROOM TO ACCOMMODATE FOR THE 1 FT DEEP RAIN GARDEN. THIS IS A PROBLEM THAT WILL REGULARLY OCCUR WHEN RETROFITTING SITES. THE RAIN GARDENS WERE DESIGNED TO HAVE A DEPTH OF 1 FT TO SHOW THAT ADDITIONAL STORAGE BY MINIMUM EFFORT AND MINIMUM ALTERATION OF THE EXISTING LANDSCAPING. THE DEPTH IS SO SHALLOW THAT WITH THE PROPER VEGETATION AND PLACEMENT, IT WILL BE UNNOTICEABLE.
4. THE SYSTEM IS DESIGNED FOR A 2 YEAR STORM. EVERY 2 YEAR STORM THE SYSTEM WILL COLLECT 2.395 AC-FT IN RAIN CISTERNS AND WILL INFILTRATE 2.11 AC-FT IN THE RAIN GARDEN. WITH PROPER USE ALL THE RAIN WATER COLLECTED FROM THE RAIN CISTERN WILL BE INFILTRATED FOR A TOTAL INFILTRATION OF 2.06 AC-FT PER 2 YEAR STORM. THE RAIN GARDEN WILL INFILTRATE 1.44 AC-FT FOR EACH STORM AND THE RAIN CISTERN WILL COLLECT 0.6143 AC-FT. STORMWATER COLLECTED IN THE RAIN CISTERN WILL BE REUSED TO WATER THROUGHOUT THE TYPICAL YEAR 90% OF ALL STORMS ARE LESS THAN THE 2 YEAR STORM. THIS SYSTEM IF PROPERLY USED WILL INFILTRATE APPROXIMATELY 17.16 AC-FT FOR THE ENTIRE YEAR CONSIDERING THAT 90% OF ALL STORMS FOR A TYPICAL YEAR IN NEW JERSEY ARE LESS THAN 2 YEAR STORM.
5. THIS SYSTEM WILL DO MUCH TREATMENT. IT IS DESIGNED TO COLLECT THE STORMWATER OFF OF THE ROOFS FROM THE SITE. STORMWATER RUNOFF FROM ROOFS ARE TYPICALLY CONSIDERED CLEANED. THE RAIN GARDENS COULD REMOVE POLLUTANTS FROM THE WATER BUT THERE ARE NO POLLUTANTS TO REMOVE. THIS SYSTEM IS FOCUSED ON REDUCING WATER QUANTITY THAN WATER QUALITY.
6. TYPICALLY RAIN CISTERNS ARE CUSTOM MADE FOR INDIVIDUAL PROJECTS. THE ROOFS IN THIS PROJECT WILL NOT JUST HAVE ONE OR 2 DOWN SPOUTS. A RAIN CISTERN IS CONNECTED DIRECTLY TO A DOWN SPOUTS. EVEN THOUGH MOST OF THE ROOFS WILL CALL FOR MORE THAN ONE RAIN CISTERN BECAUSE OF THE QUANTITY, THE NUMBER OF DOWNSPOUTS WILL CALL FOR MORE TWO.
7. THIS IS NOT FOR PERMITTING OR CONSTRUCTION USE, THIS DRAWING IS ONLY TO BE USED FOR CONCEPTUAL PURPOSES.

**LEGEND**

- PROPOSED RAIN GARDEN ———
- ROOF BORDER ———

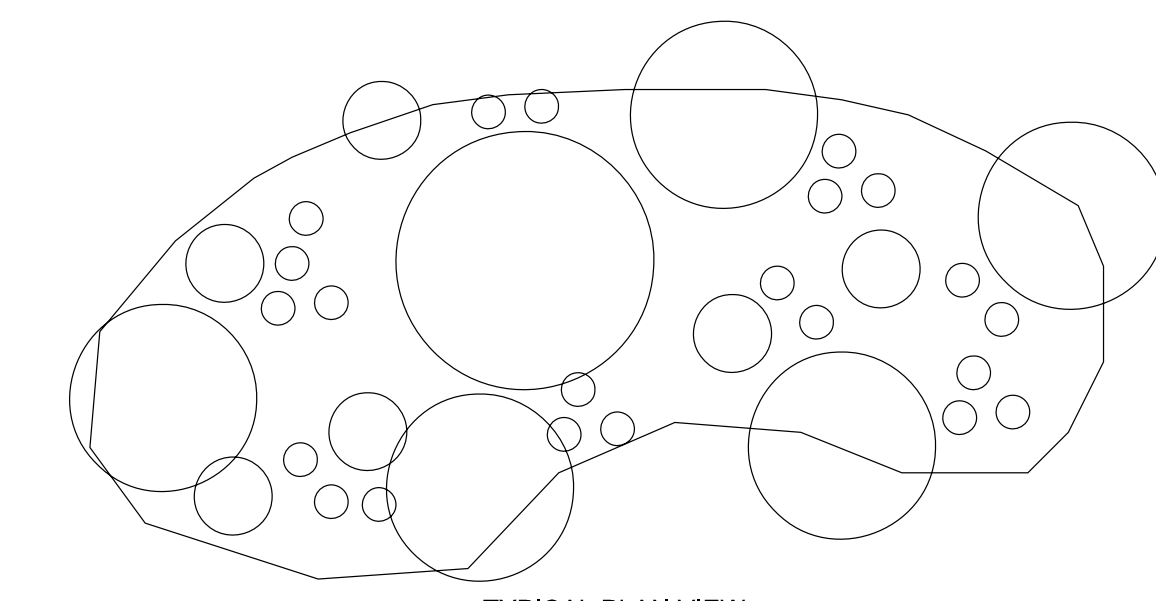


**SIMPLE DRYWELLS SCHEMATIC WITH OVER FLOW DEVICE**  
NOT TO SCALE

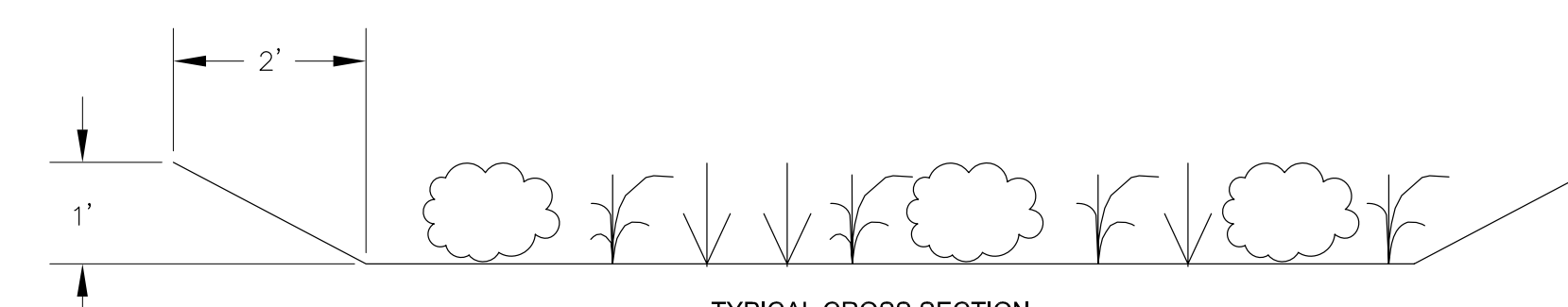


**SMALL RAIN CISTERN**  
NOT TO SCALE

WETLAND PLANTS OF VARIOUS SIZES



TYPICAL PLAN VIEW



TYPICAL CROSS SECTION

**RAIN GARDEN SCHEMATIC**

NOT TO SCALE

**NOTES:**

1. RAIN GARDENS SHALL BE APPROXIMATELY 70 SQ. FT.
2. THE NUMBER AND SIZE OF RAIN GARDENS FOR EACH DISCONNECTED AREA CAN VARY FROM DUE TO PHYSICAL CONSTRAINTS OF THE SITE SUCH AS GRADE AND LOCATE OF RAIN SPOUTS

CHRISTOPHER C. OBROPTA, Ph.D., P.E.  
PROFESSIONAL ENGINEER - NJ LICENSE # 37632

DESIGNED BY: **SPW CCO**  
CHECKED BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

MILESTONE 4 OF REGIONAL STORMWATER MANAGEMENT PLAN FOR THE ROBINSON'S BRANCH  
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
COMMERCIAL COMPLEX OFF INMAN ROAD AND PROGRESS ROAD IN EDISON, NJ  
DISCONNECTION DEMONSTRATION - COMMERCIAL SITE



JOB	CONCEPT SHEET #
RBRANCH	TOTAL
1	7

DRAFT