Final Report on Tychsen Rain Garden
Healthy Lakes Grant LPT 56217.1
Little Arbor Vitae Lake

The scope of the grant was three separate rain gardens on the common ground of Blue Island Resort and Condos. Blue Island Resort and Condos consist of 8 single family homes and one duplex. Five have been built for year around living and the other 5 are used as seasonal. Each owner owns a parcel of Limited Common which contains the home and garages and a $1/10^{th}$ undivided interest in the remaining common ground. The site is hilly and consist of 500 feet of lake shore. The projects are located on key sloped areas of the common ground that drains directly to the lake.

As a resort the land was mostly old lawn area.The lawn had been cut short and vacuumed to gather up pine needles, cones and small twigs. This type of maintenance was especially hard on the grass as the soil is very sandy. In the spring and fall clean up a large blower was used clear the lawn of pine needles, cones and twigs. This removed a layer of top soil each cycle leaving the grass as tuffs surrounded by bare sand. Since the condo conversion the maintenance has been changed to higher mowing, no power bagging except after wind events and more hand raking and smaller blowers used. (see addendum A for before pictures)

The owners of the individual units created a plan to revitalize the lawn and correct the erosion. They have set priority areas to be repaired in a 5 year plan and are self assessing themselves with monthly dues to create an on going fund to do projects annually.

The Tychsen rain garden was to handle rain water that was flowing down the driveway and the area southeast of the house. The total area needed was calculated to be 112 .5 square feet. (see addendum b for runoff calculations).

When construction was started there were large boulders encountered and the total area could not be created so the rain garden area was broken into two sections. The upper section was 28 square feet and would handle normal run off from the driveway and over flow into the second rain garden located further down the hill. This configuration would not require that all the road run off to be sent further down the slope. (see addendum C for pictures of the two rain gardens). 84 square feet was constructed lower on the slope.

We had a severe rain over three days for a combined total of 7 inches in June. The rain gardens had considerable over flow for extended period of time during the three days. We had some wash out of the lower side of both gardens. The plants survived and were held in place by the cedar mulch used around them. It took several days to reconstruct the gardens and clean up the down slope erosion. The plants and grass were watered and grew while all summer some to bloom stage. In September I was at the site when we recieved an inch of rain over 20 minutes. The gardens both overflowed but there was no was out of the down slope sides. We had created a small rock over flow after the first wash out and it provided enough capacity that the water over flowing the down slope side did not wash out the mulched and seeded areas below gardens. It showed that having a level down slope berm provided sheet flow rather than rivulets of flow.

The gardens provided sufficient capacity to handle the summer rains and were able to temper the run off from the September soil. The June storm came to soon after construction for the plants to have enough size to slow the water down and the mulch and seeding was too new to resist wqshing out, by September the grass had taken root and the mulch had settled in and was able to hold the soil in place.

A number of plants flowered late into the fall as a killing frost did not come until October. Survival was 100% for the plants obtained from Agrecol.

The gardens were planted with many crocus bulbs this fall to provide early growth and will die back by the time the native plants emerge and reach 6 inches tall.

Addendum A


Tom Tychsen
Sunrise Cottage

Addendum B

CALCULATIONS

LAWN AREA 1750 SQ FT
DRIVEWAY AREA 2000 SQ FT

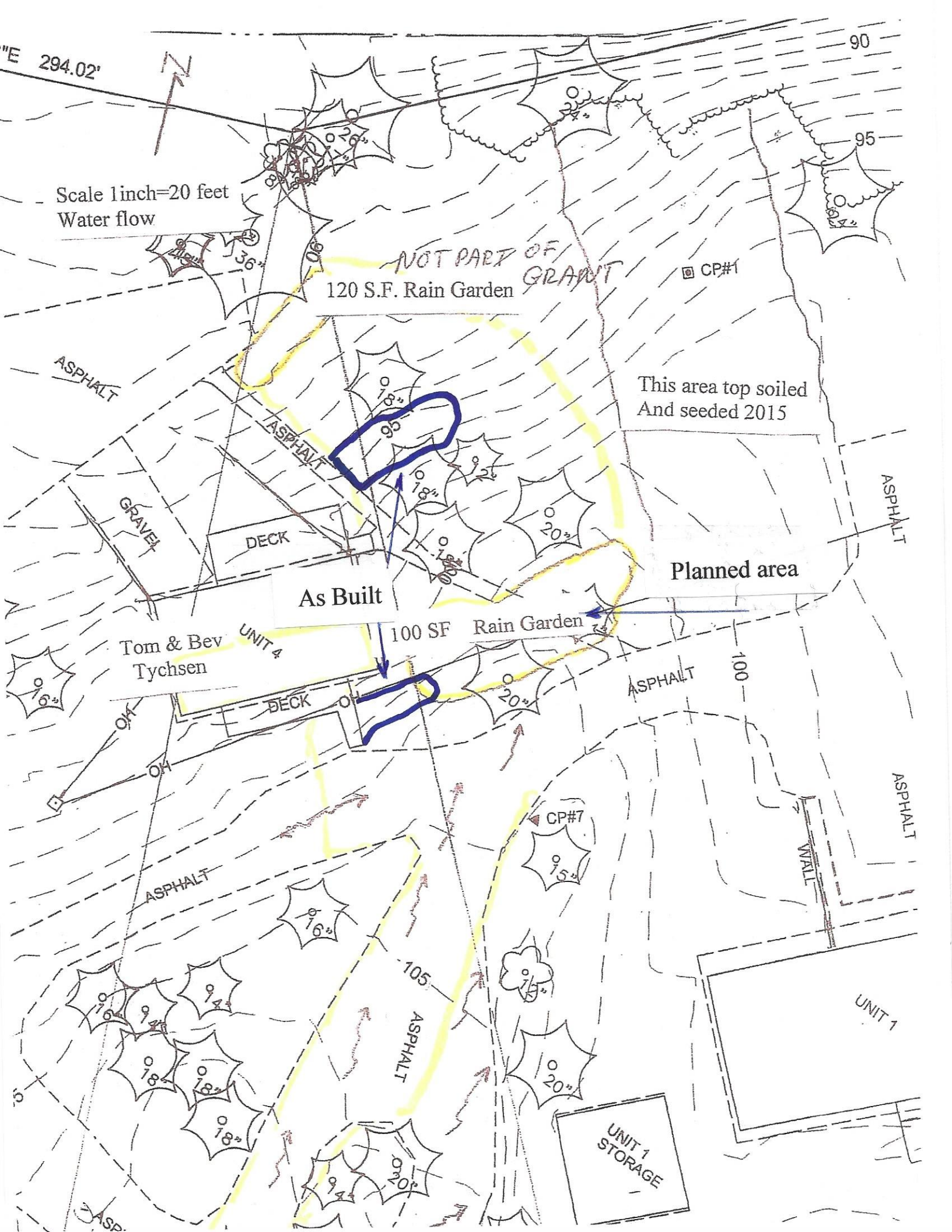
3750 SQFT TOTAL

DRIVEWAY RUN OFF WILL TRAVEL OVER THE LENGTH OF THE LAWN

USING .03 FOR SANDY SOIL IT WILL TAKE 112,5 SQ FT OF GARDEN

THE ORIGINAL PLAN WAS TO BUILD A SINGLE GARDEN FOR JUST THE ROAD WATER. DUE TO BOULDERS AND LARGE TREE ROOTS IT WAS DECIDED TO DO A SMALL GARDEN AT THE TOP OF THE SLOPE AND A LARGER GARDEN FURTHER DOWN THE SLOPE.

A 28 SQ FT TOP GARDEN
A 84 SQ FT LOWER GARDEN


"E 294.02'
N
Scale 1inch=20 feet
Water flow
NOT PART OF GRANT
120 S.F. Rain Garden
CP#1
This area top soiled
And seeded 2015
ASPHALT
GRAVEL
DECK
As Built
Planned area
100 SF Rain Garden
Tom & Bev Tychsen
UNIT 4
OH
CP#7
WALL
UNIT 1
UNIT 1 STORAGE
90
95
100
105

Addendum C

Tom Thomsen

COST FOR TYCHSEN RAIN GARDEN

TIMBER	41.66
PLANTS	313.34
MULCH, STRAW SEED, FENCE	191.19
TOP SOIL	135.83
PAID LABOR	280.00
TOTAL	962.02

DONATED LABOR

TOM TYCHSER	16.5 HOURS
BEV TYCHSEN	18.0 HOURS
GARY KIME	5.0 HOURS
CAREL KIME	3.0 HOURS
GLENN SPEICH	8.0 HOURS
NANCY SPEICH	2.0 HOURS
	52.5 HOURS
52.5 HOURS @ $12.00	= $630.00
PROJECT COST	1592.02

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