

### IMPERVIOUS AREA CALCULATIONS:

The area for this calculation is the proposed altered lands within the property line and 100-foot buffer line (as measured from the FEMA delineation and TOB, whichever is the most landward). The impervious area is the summation of those applicable percentages (not all apply to this project, but listed here as the standards applied to many projects in Town):

- 100% IMPERVIOUS AREAS: buildings (including foundations + any roof overhangs [greater than 18"] + cantilevered portions of the building [greater than 18"]), concrete retaining walls (without lips), masonry stone walls (without lips), steps, concrete landings, asphalt pavement, mortar flagstone/stone & brick patios (set on concrete slabs or jimped), exposed rock outcroppings, shallow soil over ledges and
- 100% IMPERVIOUS AREAS: pool (even though the pool is not filled entirely and does allow for some stormwater detention), and
- 50% IMPERVIOUS AREAS: brick pavers/brick/stone patios/walkways/driveway pavers (tight joints set on sand bed), 6 to 12-inches of soil cover over ledge, compacted earth, stone-dust, jym-pac driveways, and
- 50% IMPERVIOUS AREAS: un-mortared stone steps (stairs traversing a slope with or without railings) set in a bed of sand and/or crushed stone (with lawn/landscaping/terraced gardens surrounding the steps), and
- 30% IMPERVIOUS AREAS: properly maintained porous pavers/porous pavement per MassDPW Stormwater Handbooks, Volume 2; Chapter 2, pages 110-122, and
- 10% IMPERVIOUS AREAS: Stepping lawn areas (with steep topography) will have shorter time of concentrations (T<sub>OC</sub>), thus resulting in higher runoff rates (CRS), compared to flat-sloped terraced land

NOTE: The following are all considered pervious (i.e. 0% impervious):

- Open un-covered wooden/composite decks/raised patios
- Boards with 1/4-inch minimum space in-between & crushed stone /rip-rap underneath)
- Pebstone/crushed stone/chain-shall beds (with stepping stones and/or without stepping stones since there is enough space between the stones so that water is allowed to percolate in that space and then infiltrate into the pervious sub-base below the stepping stones (including granite pavers with pebbstone treads) with pebbstone and/or crushed stone).
- Rain gardens (shaped as topographic depressions detaining runoff allowing for percolation).
- Plant retaining walls/stewalls (and/or edging with top gradient lips)
- (Stone that is used as a curb/dam/discharge to retain/drain runoff), and
- Lawn (that is sloped steeply) between or around stepping stones (with grass and/or mulch) (with a root overhang (with overhang less than 18-inches wide)
- Root overhang (with overhang less than 18-inches wide)
- Grass-crete (concrete grid pavers with grass growing or pebbstone in voids)

Un-altered areas (not in the scope of proposed work), are not included in these calculations. The percentage (of impervious) is already factored into the areas below.

	EXISTING:	PROPOSED:
100% IMPERVIOUS:	6,682±SF	4,863±SF
30% IMPERVIOUS:	00±SF	844±SF
TOTALS:		
(IMPERVIOUS AREA)	6,682±SF	5,707±SF

**CONCLUSION:**  
 Net DECREASE of impervious surfaces = 975±SF

This Site Plan proposes the following design features (stormwater BMP controls to supplement the net reduction of impervious surfaces) designed to further conservatively mitigate runoff:

- Conversion of existing asphalt into pervious pavers.
- Construction of a flat terraced Water Quality Swale (designed to absorb runoff water allowing for percolation, filtration and groundwater recharge)
- River Rock swale (to catch driveway water) and rubble berm (along the property line) so that runoff does not flow onto abutter's property.
- Landscaped areas shall use only organic fertilizers that contain slow-release nitrogen (not more than 3% phosphorus) and do not contain pesticides/herbicides

Therefore, with the proposed mitigation measures (slowing down stormwater runoff allowing for percolation into the ground), impacts to wetland resource areas will MITIGATED before stormwater enters Foster Street (and Town drainage system which flows into Marshfield Harbor beyond

## SITE PLAN PROPOSED SCOPE OF WORK (with Impervious Calculations)

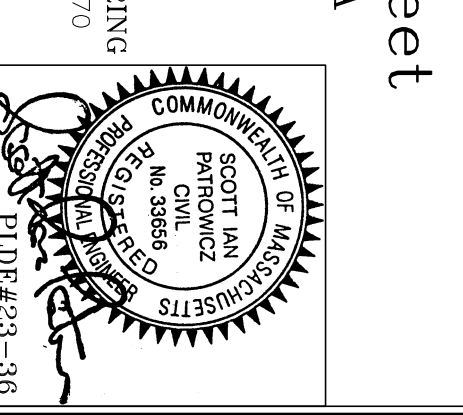
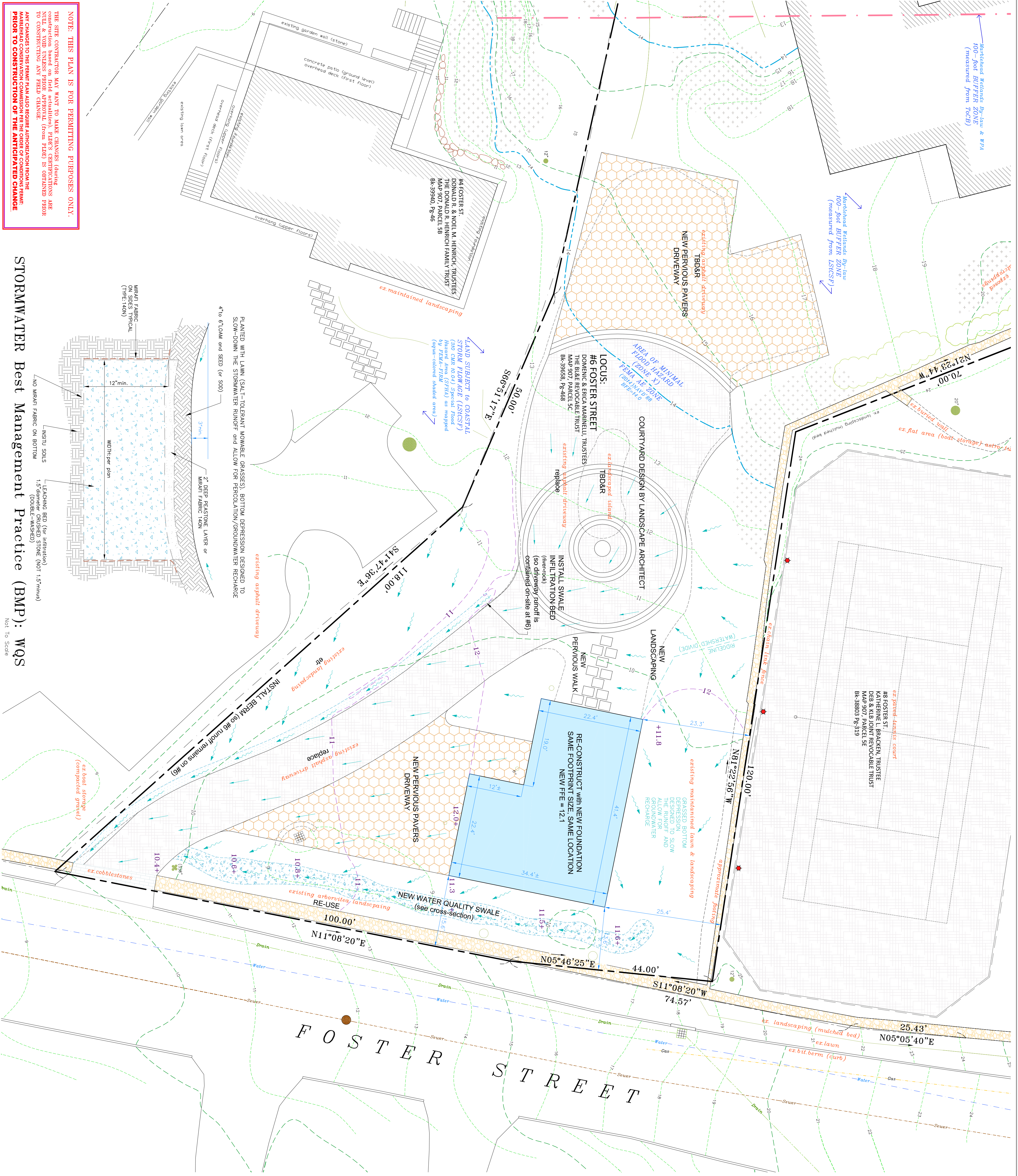
**ISTCSF (& Buffer Zones) project ONLY**  
 No work is proposed within any other wetland resource areas!

to accompany a  
 NOTICE OF INTENT APPLICATION  
 to the  
 Marblehead Conservation Commission  
 for  
 Existing Garage Re-Construction &  
 Site Work/Landscaping  
 located at:  
**#6 Foster Street**  
 Marblehead, MA

Datum: NAVD'88  
 Massachusetts State Plane  
 Coordinate System Grid North

Graphic Scale (in feet)  
 1 inch = 10 feet

Plan Scale: 1" = 10'  
 January 23, 2024  
 Sheet 2 of 2  
**PATROWICZ**  
 LAND DEVELOPMENT ENGINEERING  
 14 Brown Street, Sperry, MA 01970  
 scott.patrowicz@verizon.net

**NOTE: THIS PLAN IS FOR PERMITTING PURPOSES ONLY.**  
 THE SITE CONTRACTOR MAY WANT TO MAKE CHANGES (GRADE CONSTRUCTION BASED ON FIELD ACTUALS). PAPER'S CERTIFICATIONS ARE VOID & VOID DUES FROM APPROVAL (FROM THIS) IS OBTAINED PRIOR TO CONSTRUCTION AND FIELD CHANGES.  
 ANY CHANGES TO THE PLAN ALSO REQUIRE APPROXIMATION FROM THE ENGINEER PRIOR TO CONSTRUCTION OF THE ANTICIPATED CHANGE

**STORMWATER Best Management Practice (BMP): WQS**  
 Not To Scale