ASB design group

March 21, 2022

Ipswich Conservation Commission
25 Green Street
1st Floor
Ipswich, MA. 01938

Re: **Summary Letter: Notice of Intent for Accessory Dwelling Unit (ADU)**
5-7 Turkey Shore Road
Ipswich, MA. 01938
Job No. 2022-08
Parcel I.D.: Map 42A Lot 37C

Dear Members:

On behalf of our client, Mr. Carl Gardner Jr., **ASB** design group, LLC (ASB) has prepared this Summary Letter concerning the Notice of Intent for 5-7 Turkey Shore Road. The submittal includes:

- Summary Letter
- Figure 1: Hydrologic Soil Group Map
- Sheets C1 and C2

Existing Conditions

The existing 12,591 square foot (s.f.) site is located on the easterly side of Turkey Shore Drive as shown on Sheet C1. Presently the site is developed with:

- Existing 2 family residential dwelling.
- 2 Gravel driveways.
- A shed located in the rear yard.
- Landscape areas and lawn.

The site falls within the 100' and 200' Riverfront Resource Area from the Ipswich River.

Soils

The Natural Resources Conservation Service (NRCS) Hydrologic Soil Group Map, see Figure 1, classifies the onsite soils as **14B** – **Scitico**. Scitico soils consist of silt loam with 0 to 5 percent slopes and a Hydrologic Soil Group (HSG) Rating of C/D. Scitico soils are nearly level to very gently sloping soils on lacustrine and marine terraces. These soils are deep, poorly drained, and formed in silty/clayey glaciolacustrine and marine deposits. Typically, these soils are in low-lying, broad, flat, or slightly concave areas.

The "**Hydrologic Group**" is a **group of soils having similar runoff potential under similar storm and cover conditions**. This soil property represents (influences) the amount (volume) of stormwater runoff potential that a soil has and influences the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen.

In other words, the HSG represents how much stormwater runoff (rain) can infiltrate (enter) into the soils and not contribute to the stormwater runoff (peak rate of runoff – cubic feet per second) leaving the site. There are 4 Hydrological Soil Groups as defined below.

Group A soils have a low runoff potential and high infiltration rates when thoroughly wetted. They consist chiefly of deep well to excessively drained sands and gravels and have a high rate of water transmission (greater than 0.3 in/hr.).

Group B soils have a moderate infiltration rate when thoroughly wetted and consist chiefly of moderately deep-to-deep moderately well to well drained soils with moderately fine to moderately course textures. These soils have a moderate rate of water transmission (0.15-.30 in/hr.).

Group C soils have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water, and soils with moderately fine-to-fine texture. These soils have a low rate of water transmission (0.05-0.15 in/hr.).

Group D soils have high runoff potential. They have low infiltration rates when thoroughly wetted and consist chiefly of clay soils with high swelling potential, soils with a permanent high water, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very low transmission (0-0.05 in/hr.).

In this case we have a HSG Rating of C or D for the Scitico soil. For this reason, infiltration is limited in these soils.

Please also note that the Massachusetts Department of Environmental Protection's Stormwater Handbook States:

MassDEP recognizes that it may be difficult to infiltrate the required recharge volume on certain sites because of soil conditions. For sites comprised solely of C and D soils and bedrock at the land surface, proponents are required to infiltrate the required recharge volume only to the maximum extent practicable.

Proposed Conditions

The applicant proposes to construct a new 500 s.f detached single family rental unit on the site as shown on Sheet C1. In addition, the work will include:

- Demolition/Removal of the existing shed (58 s.f.).

- Construction of a new shed (150 s.f.).
- Expansion of the existing gravel driveway located on the southerly side of the site from 591 s.f. to a total of 1,745 s.f. (net increase of 1,154 s.f.),
- Installation of a new water and sewer service,
- Pervious paver patio (80 s.f.),
- Rain Garden,
- Stormwater Roof Runoff Drip Edge,
- Loam and seeding of all disturbed areas.

The site is exempt from the Massachusetts Department of Environmental Protections Stormwater Regulations. However, the applicant has proposed the following stormwater mitigation measures:

- Rain Garden,
- Stormwater Roof Runoff Drip Edge,
- Pervious Paver Patio.

When dealing with these types of soils the most effective way to mitigate the stormwater runoff impacts is to create a design that:

- limits concentrated stormwater runoff,
- and uses Low Impact Design (LID) Techniques.

Each of the mitigation measures outlined above is considered a Low Impact Design Technique (see Sheets C1 and C2). These measures prevent concentrated stormwater runoff while allowing the stormwater runoff to slowly infiltrate into the soils.

Construction Sequencing & Erosion Control (ADU)

The proposed project will consist of the constructing of a detached accessory dwelling unit (ADU) to be located as shown on Sheet C1. To minimize excavation impacts the foundation will consist of a reinforced concrete slab on grade isolated from the ground using rigid foam insulation.

The structure will be serviced by a new water line out to Turkey Shore Road and a new 4” SDR gravity sewer line that will tie into the common sewer lateral at the rear of the existing two-family dwelling. It is anticipated that the ADU will also have access to the existing gas line and electric lines serving the two-family. The existing gravel driveway will also be expanded to the area shown on Sheet C1.

A rain garden containing perennial plantings will be established on the right side of the driveway to receive roof runoff via a 4” Schedule 20 PPVC underground drain bedded in washed stone and fed from both eave drip lines of the building.

Construction Sequence:

1. Install MDEP sign and straw wattle down gradient of any disturbed areas to contain/trap sedimentation generated from a storm. If required, temporarily stockpiled materials will be protected by the use of tarps. See Sheet C2 for erosion control details.

2. Excavate all unsuitable organic soils in the area of the structure and establish a compacted gravel base. Backfill and cover any remaining disturbed areas with salt hay mulch to prevent erosion.

3. Remove unsuitable material and establish the subgrade for the expanded gravel driveway. Excavate for the water and sewer lines, compacting the select backfill material in 12" lifts. The utility tie-ins shall be coordinated to be completed on the same days the work is initiated.

4. Install straw wattle between the corner of the new structure and the rear deck of 5 Turkey Shore Road until new grass cover is established in that portion of the yard. Place compacted gravel base in the new driveway area.

5. Install the perforated drip line drain and protect during the remaining construction using a filter fabric cover secured to the ground. Establish rain garden soil mixture and profile and plant with perrenials. Mulch the entire garden area.

6. Any remaining disturbed areas shall be planted with grass seed (Essex #2) or mulched with natural pine bark to establish a permanent stabilization of the site.

7. Prepare As-Built drawing for review and approval by the Ipswich Conservation Commission along with Form 8A – Request for Certificate of Compliance.

If you have any questions and or concerns, please feel free to contact me at 978-500-8419.

Sincerely,

Thad D Berry

ASB design group, LLC
Thad D. Berry, P.E.
Principal