CAPE & ISLANDS
ENGINEERING

Civil Engineering & Surveying for Greater Cape Cod

April 4, 2024

Town of Bourne Planning Board
c/o Jennifer Copeland, Town Planner
24 Perry Ave.
Buzzards Bay, MA 02532

RE: Professional Engineer Opinion for Application for Access Determination
79 Mayflower Road, Map 4.4 Parcel 11, Sagamore Beach, MA

Dear Jennifer,

Please accept this letter, on behalf of the applicant and property owner John R. Hughes, as our professional engineering assessment of adequate site access for this vacant parcel with proper site planning and management.

This assessment also addresses comments included in the memorandum provided to the Planning Board, for this application, by the Town of Bourne Engineering Department, dated January 22, 2024 from Timothy Lydon, SIT, CFM.

Cape and Island Engineer performed a site survey to obtain the site topography and analyze site conditions. The subject vacant property is located in a residential neighborhood where all surrounding residential properties are already developed. The property is located at lower elevations than the adjacent properties to the north, east and west, and it is located at higher elevations than properties to the south, 75 Mayflower Road. The parcel fronts on Mayflower Road, however, the road has not been constructed along the frontage of this property. In its current conditions the property lacks adequate access but this can be corrected by extending the traveled way approximately 85-feet to provide enough access to the property. Extension of this traveled way can be achieved by clearing that portion within the Road layout, grading and installing a road base with a gravel finish surface. Storm runoff management shall be installed to maintain storm patterns from exceeding current conditions. These improvements are enough to provide adequate access to this vacant parcel as further detailed below.

The first matter to resolve for proper access at this site is to extend the travel way surface to the property. Mayflower Road exist as a gravel traveled way that ends 14-feet north of the front north corner of this property, and ends 85-feet south from the front south corner of this property. There is approximately 204-feet of un-improved road within the road layout. Providing access by extending the existing gravel road from the north side is less challenging. There is a six-feet (6') change in topography and 2,200 square feet of natural vegetation to clear to achieve access from the north by extending the 18-feet wide gravel roadway some 85-feet along the frontage of this property. A roadway extension from the south would be approximately 125-feet in length and is challenged by grade changes of almost 10-feet and clearing of vegetation of 3,400 square feet. Extending the 18-feet traveled way from the north is a better, and practical, approach to provide adequate site access to this vacant parcel.

Development at this site shall be accompanied by proper stormwater management, typical of similar developments. The memorandum from the Bourne Engineering Department notes that "*Because the impacts of stormwater are already apparent, once the applicant were to clear grassed area the impacts would be exacerbated.*" We agree with the Engineering Department

assessment that developing a vacant property increases storm runoff but this increase runoff can properly be managed on-site. But ongoing stormwater problems or stormwater management deficiencies are not caused by the subject vacant property. Existing stormwater conditions at the property or in the neighborhood are not an impediment for providing adequate site access to this specific property.

Excess surface runoff from surrounding development that traverses the land and reaches this vacant parcel continue to flow in a southward direction (see enclosed GIS topographic map). Developing this vacant property should be conducted such that that same surface runoff from off-site sources is diverted away from the new development and directed towards the natural path of surface water. The subject property should not be designated as a storm runoff destination for the neighboring properties and should not be tasked with solving stormwater problems from the surrounding properties. Developing this vacant property can be achieved subject to practical and regulatory standards for any development of vacant land such that storm runoff is properly managed.

The applicant, and property owner, is informed that any roadway improvements to access the site and any improvement of the vacant parcel needs to be accompanied by adequate stormwater management to prevent increasing stormwater impacts. The travel road surface can be extended along the front of this property, with proper grading and stormwater management. Stormwater management, likely provided in the form of surface drain swales and earth berms with subsurface infrastructure, can be achieved following Best Management Practices and industry standards. Adequate access to this vacant property can be properly engineered to allow development of the parcel.

If you have any questions or concerns, please contact me at Cape & Island Engineering, Inc.

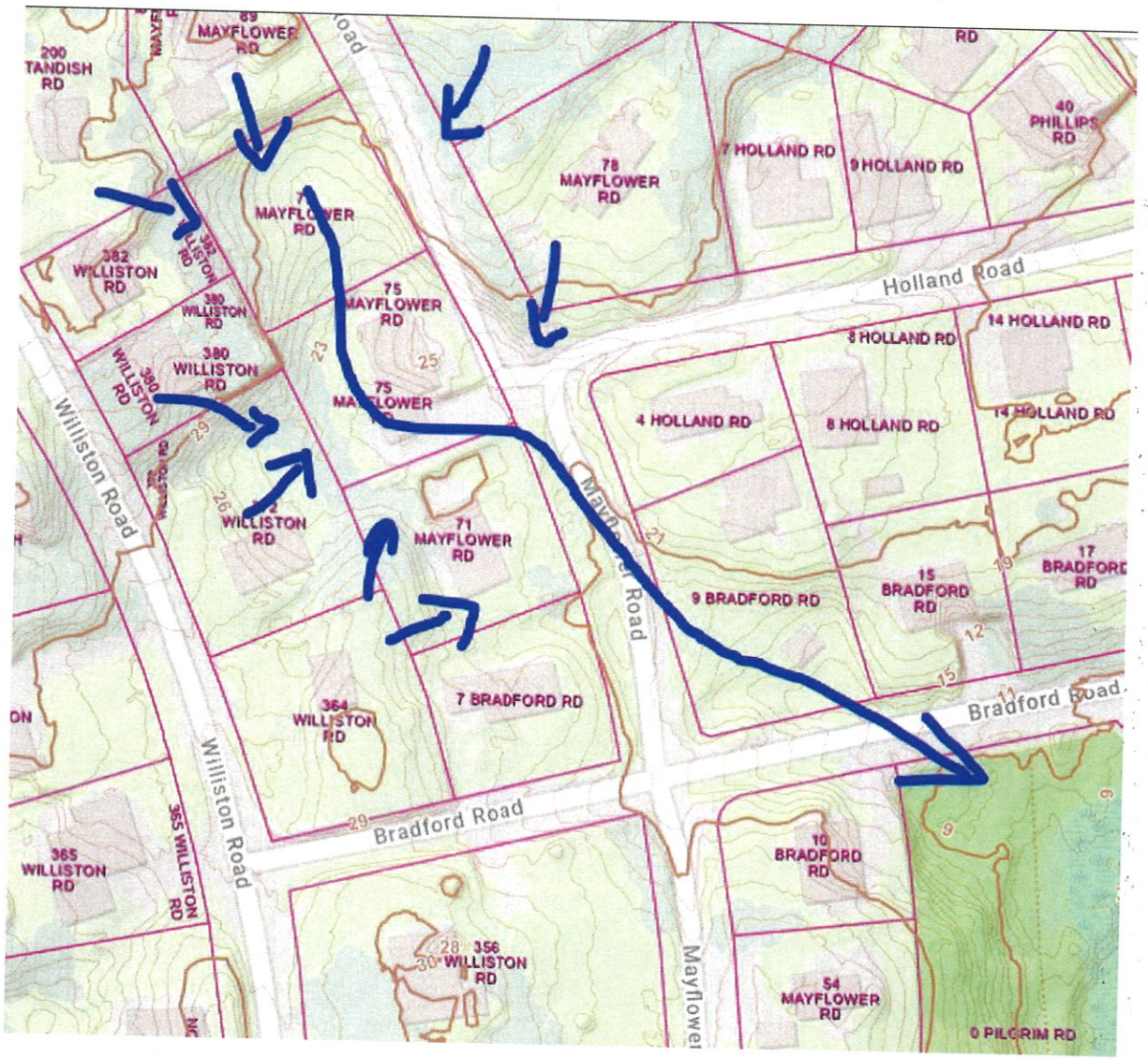
Sincerely,

Raúl Lizardi-Rivera, P.E.
Director of Engineering

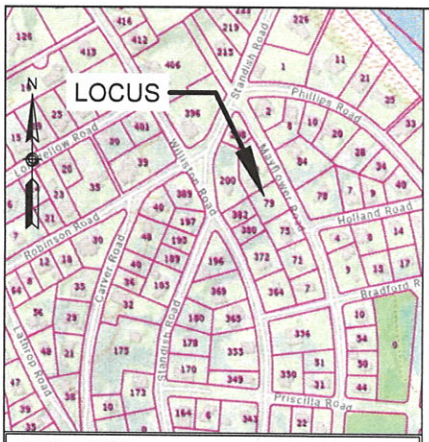
Enclosure: Conceptual Development Graphic, dated 4/4/2024
Mass GIS topographic map

cc: John and Paula Hughes (by email)
Chris Kirrane (by email)
Tim Lydon (by email)

Mass GIS (online MassMapper) topographic map
This map shows the neighborhood topography and surface runoff path



The blue arrows indicate the downgrade path of surface runoff in the immediate vicinity of the subject property at 79 Mayflower Road, Sagamore Beach, MA



LOCUS MAP NOT TO SCALE

GENERAL NOTES

LOCATIONS ARE BASED ON AN "ON THE GROUND" INSTRUMENT SURVEY AND ELEVATIONS BASED ON THE NAVD 1988 DATUM. COORDINATE SYSTEM USED IS THE MA-MAINLAND COORDINATE SYSTEM, DATUM: NAD 83, UNITS: U.S. SURVEY FEET.

ZONING DISTRICT: R-40

DEED REFERENCE: BOOK 31159 PAGE 15

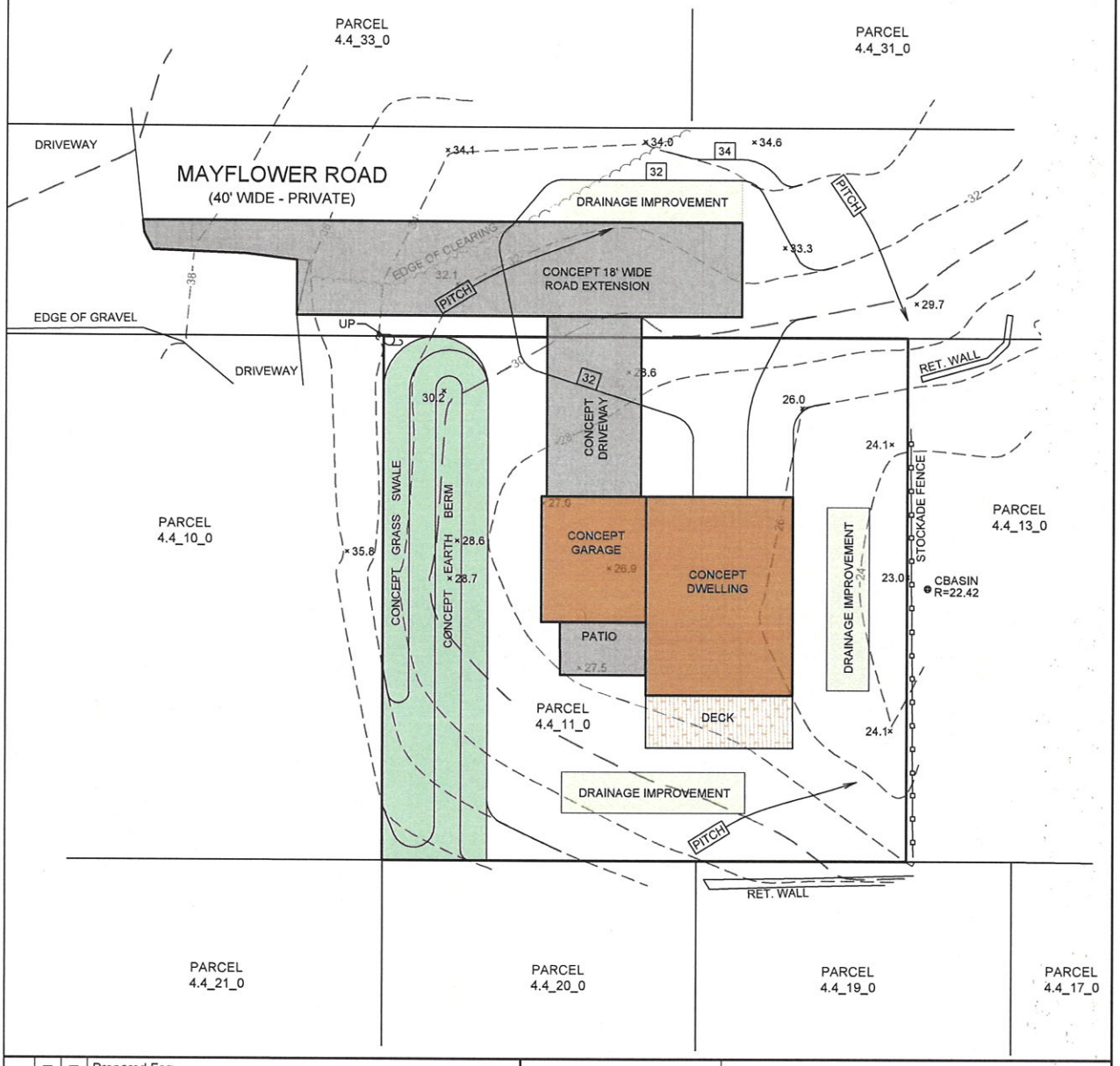
PLAN REFERENCE: BOOK 263 PAGE 23

OWNER: JOHN R. HUGHES
588 LEXINGTON STREET
WALTHAM, MA 02451

N NAD 83

LEGEND

- CB ——— CONCRETE BOUND
- SB ——— STONE BOUND
- ——— UTILITY POLE
- ——— LIGHT POLE
- TREE LINE
- OHW — OVERHEAD WIRES
- STONE WALL
- POST & RAIL FENCE
- STOCKADE FENCE



1 OF 1

Date: APRIL 4,2024

Drawn By: RLR Checked: RLR

Prepared For:
JOHN R. HUGHES
588 LEXINGTON STREET
WALTHAM, MA 02451

Project:
79 MAYFLOWER ROAD
BOURNE, MASSACHUSETTS

Drawing Title:
GRAPHIC
CONCEPTUAL DEVELOPMENT

CAPE & ISLANDS ENGINEERING
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0 10 20 40
SCALE: 1"=20'

MAYFLOWER_79_HUGHES_ECP