VERMONT

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Agency of Natural Resources

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C. Bruce Johnson
Town and Zoning Administrator
Town of East Montpelier
electronic transmission

6/14/19

Hello Bruce,

Thank you for sending (6/5/19) the application materials related to the proposed dry hydrant installation at (51) Codling Road. The proposed design includes the installation of a dry hydrant with an access road and a guardrail at the end.

I am attaching a map, Atlas 51 Codling Rd Dry Hydrant Site.jpg, identifying the location within three hazard areas: the River Corridor, Special Flood Hazard Area and Floodway of the Winooski River.

All development in the hazard areas requires review and compliance with the flood hazard area standards in Article 9 of the East Montpelier Land Use & Development Regulations. Section 9.5 (D)(5) requires Conditional Use Review by the Development Review Board for public projects which are functionally dependent on access to a stream.

The project may meet the hazard area standards if carefully conditioned and designed to meet criteria related to the Floodway and avoid new net fill.

On the attached map: hydrant site w contours.jpg I have georectified the initial sketch up plans for the installation and added the hazard area data and one-foot contours from lidar.

Within the Floodway (9.6), public utilities may be placed underground where a licensed professional engineer certifies that there will be no change in grade and the utility will be adequately protected from scour.

However, any fill or access road extending into the Floodway will require a hydraulic analysis by PE to confirm no rise in the Base Flood Elevation.

9.6 (A)

(1) Development or any encroachments, above grade and less than one foot above the base flood elevation, within the regulatory floodway as determined in Section 9.3 (B), is prohibited unless it has been demonstrated through hydrologic and hydraulic analyses, performed in accordance with standard engineering practice, by a registered professional engineer certifying that the proposed development will result in no increase in flood levels during the occurrence of the base flood, and will not increase any risk to surrounding properties, facilities, or structures from erosion or flooding.

The optimum solution is to only place the pipe underground and certify that there will be no change in grade. Otherwise the applicants will need to certify no-rise in accordance with 9.6 (A)(1).

Within the Special Flood Hazard Area, new fill is prohibited except as necessary to elevate existing buildings. 9.5 (C) (3).

To approach the river the proposal includes an access road approximately 24' wide and 140' long with 375 cubic yards of gravel and road base material.

The project may be able to eliminate or minimize fill by constructing the project at grade to create no net fill and no loss of floodwater storage volume. Any new road construction materials would offset by the removal of an equal amount of existing material such that the final project retains existing grades.

To the extent that the slope down from the road needs to be moderated – the volume of materials placed to establish a sloped ramp could be offset by the removal of a volume of material at the same or lower elevations below the Base Flood Elevation. This removed volume would be hydraulically connected to the river and would not create a disconnected ponded condition. VT DEC has technical guidance on the design of such compensatory flood storage that may allow the project to meet the standard in the bylaw.

The proposed location is also within the mapped River Corridor of the Winooski. The River Corridor identifies the area required by the channel to achieve and maintain the lowest gradient and least erosive planform.

On Tuesday 6/11, Gretchen Alexander, the VT DEC River Scientist, and I made a site visit. At the proposed site for the project the River Corridor is already constrained extensively by the location of the Rt 2 bridge and Codling Road. Given existing and likely future armoring needed to protect the roads Gretchen Alexander found that the project would not create a new encroachment or extend the river management boundary. As such the "proposed development will not obstruct the establishment and maintenance of a geomorphically stable river or stream channel." 9.5 (F) (1).

To the extent that the final project design can be conditioned to avoid net fill in the Floodway and Special Flood Hazard Area the project it can meet the criteria in Article 9.

As always, other State, Federal or local permits may be required for this project. Peter Kopsco, the VT DEC Permit Specialist for the region is available to help the applicant identify any other State Environmental Permits that may be necessary. These comments are offered in support of the Town of East Montpelier under 9.7 B (1) and 24 VSA §4424. Where the City has additional or more stringent standards those standards will control.

Please let me know if you have any questions.

Sincerely,

Ned Swanberg

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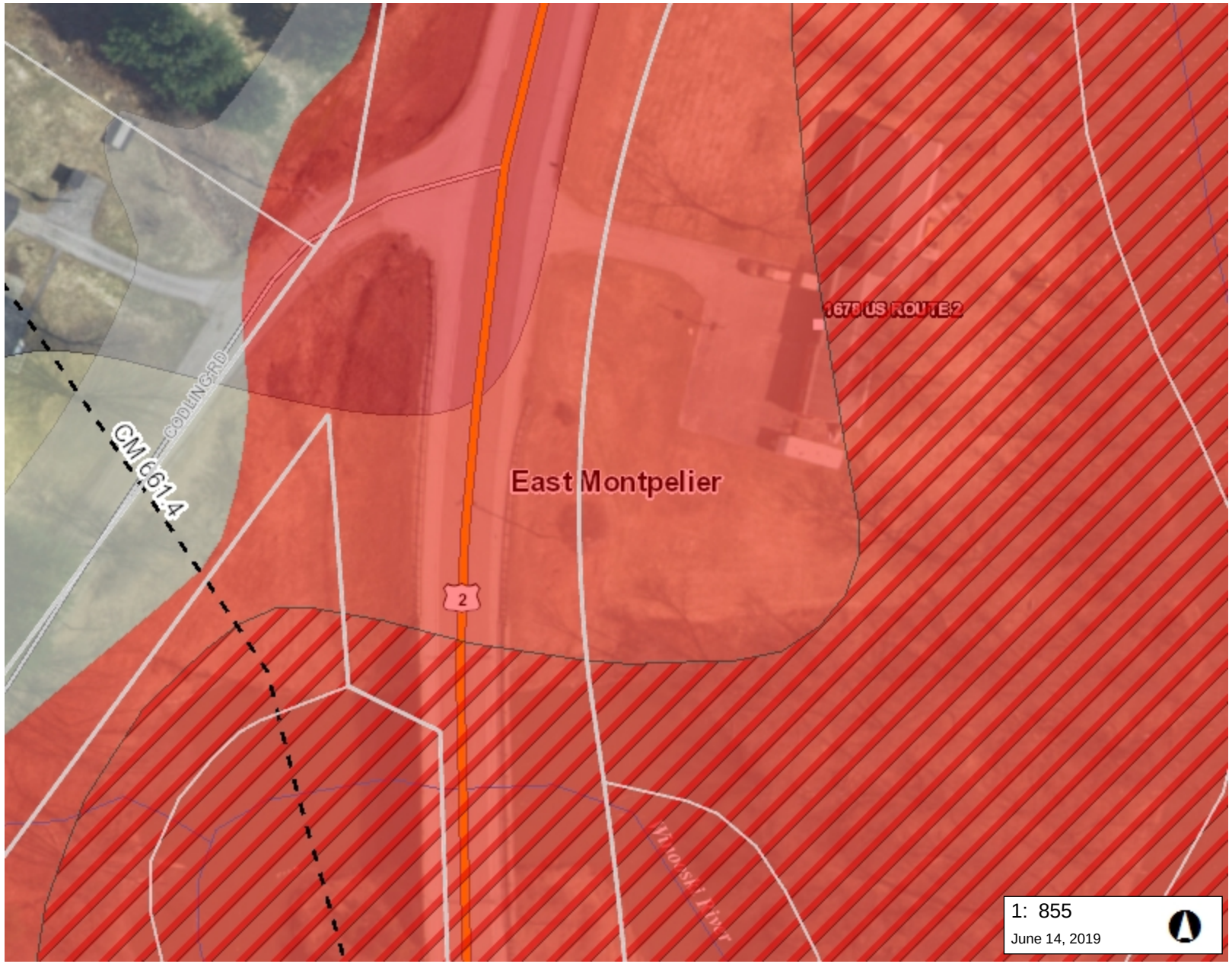
VERMONT

51 Codling Rd Dry Hydrant Site

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- Parcel lines
  - Right-of-way boundary
  - Surface water boundary
  - Parcel boundary
  - Disputed parcel boundary
- Parcels (standardized)
- Inactive parcels
- Parcel easements
- Parcels (non-standardized)
- DFIRM X-Sections
- DFIRM Floodways
- Flood Hazard Areas (Only FEM
  - AE (1-percent annual chance floodp
  - A (1-percent annual chance floodpl
  - AO (1-percent annual chance zone feet)
  - 0.2-percent annual chance flood ha
- Buildings (E911)
- Roads
  - Interstate
  - Principal Arterial
  - Minor Arterial
  - Major Collector
  - Minor Collector
  - Local
  - Not part of function Classification S
- Stream
- Town Boundary

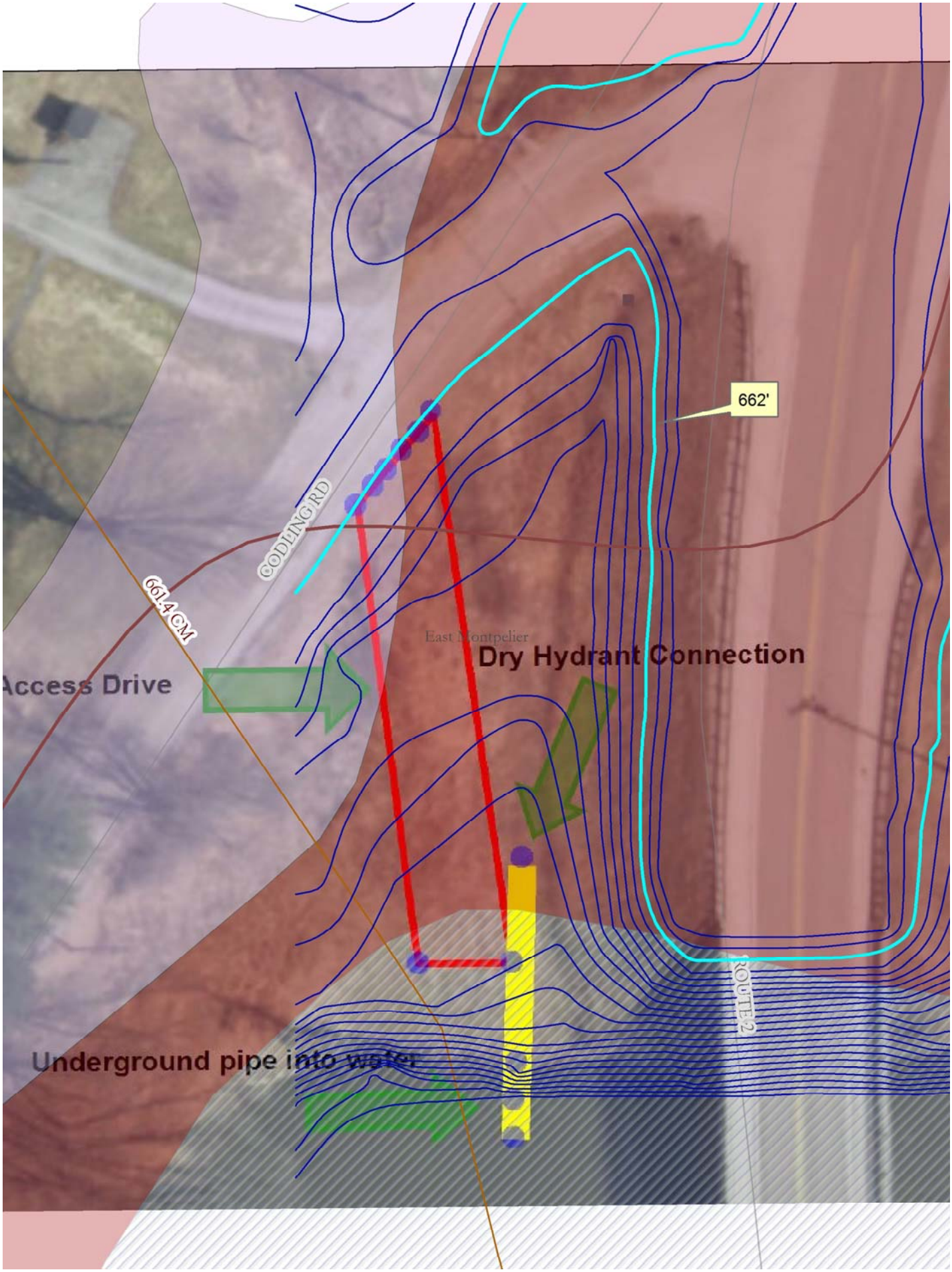
NOTES

Map created using ANR's Flood Ready Map

43.0 0 22.00 43.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 71 Ft. 1cm = 9 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION


662'
CODLING RD
614 CM
East Montpelier
Dry Hydrant Connection
Access Drive
ROUTE 2
Underground pipe into water