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## EMERGENCY PROTECTIVE MEASURE – FINAL AUTHORIZATION

Pursuant to Section E of the Vermont Stream Alterations General Permit

Project Number: EPM-034-2014 West Windsor TH #1 Culvert Replacement

Municipality: Town of West Windsor

Phone: 802-484-3520

Contact: Martha Harrison

Email: [town.of.west.windsor@valley.net](mailto:town.of.west.windsor@valley.net)

Project Location: between 393 & 412 Brownsville-Hartland Rd Watercourse: tributary of Beaver Brook

The Secretary of the Vermont Agency of Natural Resources (VT ANR) has determined that the project as reported:

1. Authorizes culvert replacement on TH 1 over un-named tributary to Beaver Brook made necessary by the imminent threat of infrastructure destroyed and the lack of public access will threaten lives.
2. Is eligible for coverage under the VT ANR Stream Alteration General Permit Measures.
3. Has met the following terms and conditions of Section E of the General Permit:
  - a) Was necessary to preserve life or to prevent severe imminent damage to public and/or private property;
  - b) Had prior approval from a state or municipal governmental representative with the legal authority to make a public health or safety determination;
  - c) Was limited to the minimum amount necessary to remove the imminent threat, was proportional to the threat and ceased when the threat to life or of severe property damage ended;
  - d) Was implemented in a manner consistent with the standards set forth in Sections E.2.1 through E.2.4 of the General Permit;
  - e) Met Stream Alteration Standards to the greatest extent possible.
4. Was documented with photographs and narrative, submitted to VT ANR within 30 days of the emergency protective measure.

The project, as constructed and reported by the municipality, did not incur any violation of Vermont Water Quality Standards.

Signed this 2<sup>nd</sup> day of April, 2015

David K. Mears, Commissioner

Department of Environmental Conservation

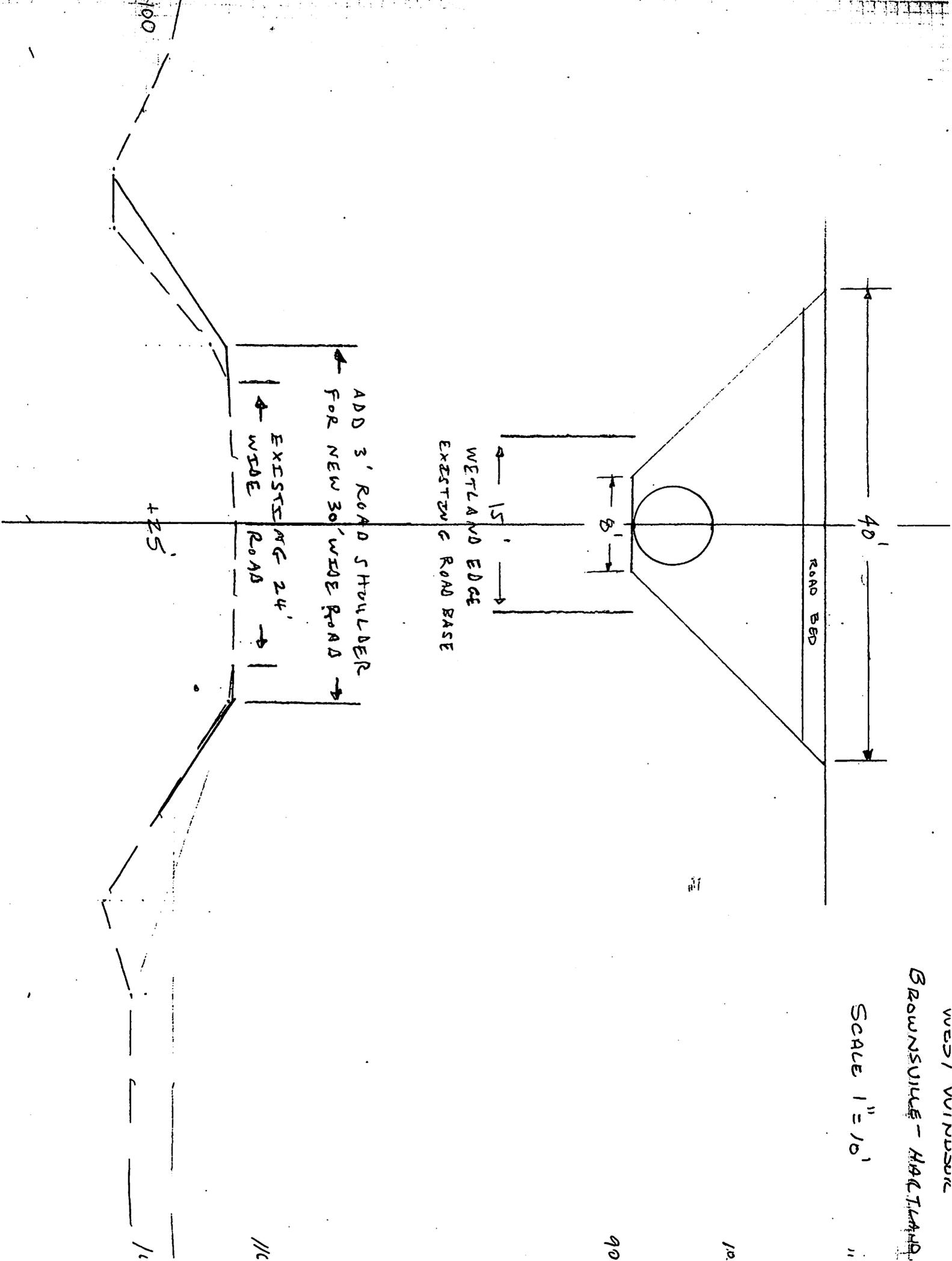


by: \_\_\_\_\_  
Todd Menees, P.E., P.H., River Management Engineer

WEST WINDSOR

BROWNSVILLE - HALLTOWN

SCALE 1" = 10'



GROUND ELEV ABOVE BED

STREAM BED

INV. 94

92.0

ABOUT 30 SF X 15' = 450 CF = 17 CY

SLOPE = 7.58%

34' X 1' = 34 SF  
34 SF X 15' = 510 CF = 19 CY

87.0

INV. 89.0

GROUND ELEV ABOVE BED

STREAM BED

RR - RAP

DISCOVERED  
TUNE

- ASSUME:
1. GROUND TO EED  
OHW DEPTH 2'
  2. FILL DEPTH  
BELOW OHW  
CRABLES 5'
  3. FILL DEPTH  
BELOW OHW  
NEW ENLVEAT 3'



R737

BOOK

10/2/14

WEST WINDSOR HARTLAND RIVERVIEW RD  
CULVERT QUANTITIES BELOW OHW  
FOR ARMY CORPS APPLICATION

EXISTING CULVERT 24' X 36' X 40' L = 240 CF = 8.9 CY  
ASSUME 2' THICK STONE 4' X 5' X 40' L = 800 CF = 29.6 CY  
560 CF = 20.7 CY

NEW CULVERT CGMP 6.5' X 66'

$$\pi R^2 = (3.25)^2 \pi = 33.17 \text{ SF}$$

$$33.17 \text{ SF} \times 66' = 2,189 \text{ CF} = 81 \text{ CY}$$

THEREFORE NEW CULVERT DECREASES FILL 81 - 21 = 60 CY

FILL FOR CULVERT EXTENSION 12 LF INLET 34 LF OUTLET

1. LENGTH NEW FILL BELOW OHW: LENGTH 12' + 34' = 46 LF

$$\text{INLET } 30 \text{ SF} \times 15' = 450 \text{ CF} = 17 \text{ CY}$$

$$\text{OUTLET } 34 \text{ SF} \times 15' = 510 \text{ CF} = 19 \text{ CY}$$

$$\text{ASSUME TOTAL } \underline{36 \text{ CY}}$$

2. CY/LF NEW FILL BELOW OHW = 36 CY / 46 LF = 0.8 CY/LF

3. SQ. FT AREA NEW FILL BELOW OHW

$$\text{INLET } 260 \text{ SF}$$

$$\text{OUTLET } \underline{970 \text{ SF}}$$

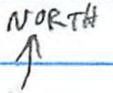
$$\text{TOTAL } 1,250 \text{ SF. APPROX.}$$

10/2/14

WEST WENDSOR HARTLAND BROWNVILLE RD

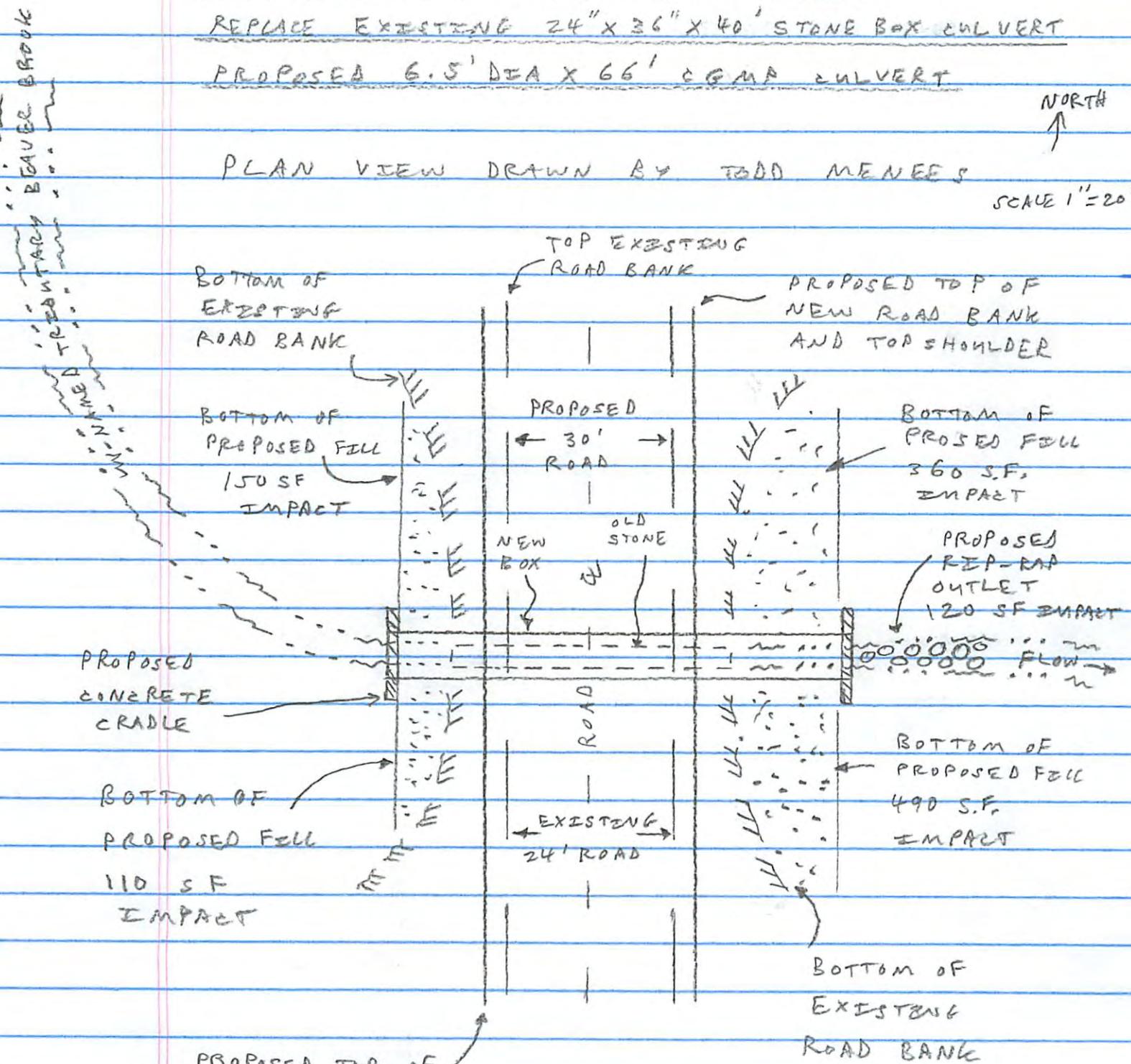
REPLACE EXISTING 24" X 36" X 40' STONE BOX CULVERT

PROPOSED 6.5' DIA X 66' CGMA CULVERT



PLAN VIEW DRAWN BY TODD MENEES

SCALE 1" = 20'



	UPSTREAM	DOWNSTREAM
	150	360
	110	120
	<u>260 SF</u>	<u>490</u>
		970 SF

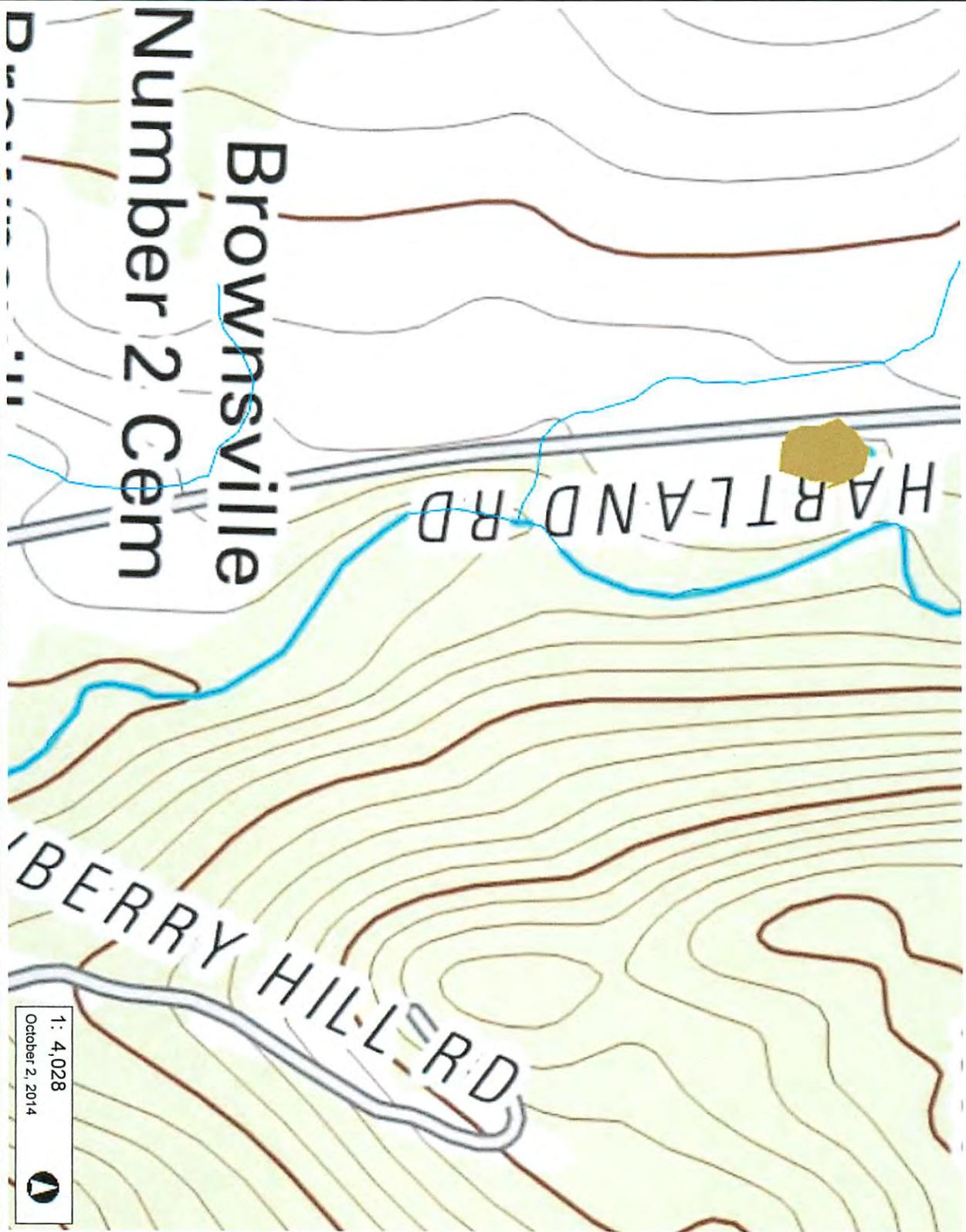
TOTAL IMPACT SAY 1,250 SF

EXISTING FILL ACROSS TOP ROAD EDGE 85 L.F. EACH SIDE  
 EXISTING FILL ACROSS BOTTOM AT PIPE 15 L.F. EACH SIDE



**Natural Resources Atlas**  
 Vermont Agency of Natural Resources

[vermont.gov](http://vermont.gov)



205.0  
 0 102.00 205.0 Meters  
 WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
 1" = 336 Ft. 1cm = 40 Meters  
 © Vermont Agency of Natural Resources  
 THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

1: 4,028  
 October 2, 2014



**LEGEND**

- Wetlands - VSWI
  - Class 1 Wetland
  - Class 2 Wetland
- Wetlands Advisory Layer
- Stream
- Town Boundary

**NOTES**

Map created using ANR's Natural Resources Atlas



















