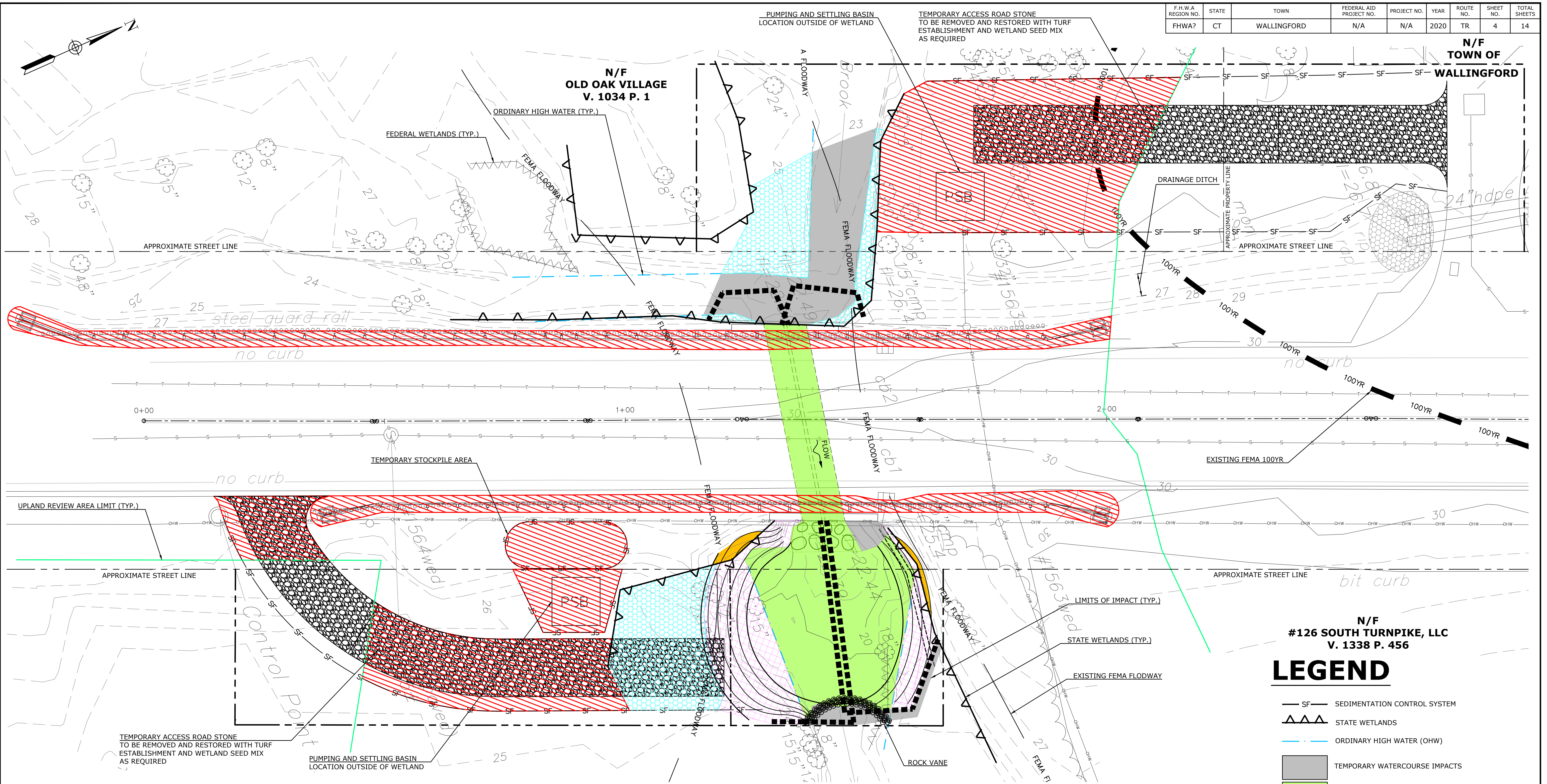


N/F  
TOWN OF  
WALLINGFORD



**PROPOSED ACTIVITY PLAN WITH TEMPORARY AND PERMANENT WETLANDS AND WATERCOURSE IMPACTS**  
SCALE: 1" = 10'-0"

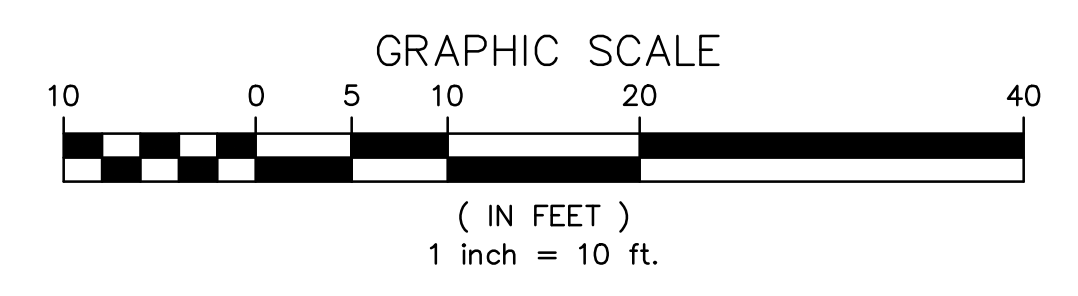
N/F  
#126 SOUTH TURNPIKE, LLC  
V. 1338 P. 456

**LEGEND**

- SEDIMENTATION CONTROL SYSTEM
- STATE WETLANDS
- ORDINARY HIGH WATER (OHW)
- TEMPORARY WATERCOURSE IMPACTS
- PERMANENT WATERCOURSE IMPACTS
- TEMPORARY WETLAND IMPACTS
- PERMANENT WETLAND IMPACTS
- TEMPORARY UPLAND IMPACTS
- PERMANENT UPLAND IMPACTS

**NOTES:**  
ANY "UNCONFINED" INSTREAM WORK ASSOCIATED WITH THE PROJECT SHOULD BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE.

	WETLAND IMPACTS	WATERCOURSE IMPACTS	TOTAL	UPLAND REVIEW AREA
PERMANENT IMPACTS	630 S.F. (0.0144 AC.)	1348 S.F. (0.0309 AC.)	1978 S.F. (0.0453 AC.)	38 S.F. (0.00087 AC.)
TEMPORARY IMPACTS	975 S.F. (0.0224 AC.)	724 S.F. (0.0166 AC.)	1699 S.F. (0.0390 AC.)	4643 S.F. (0.10659 AC.)
TOTAL IMPACTS	1605 S.F. (0.0368 AC.)	2072 S.F. (0.0475 AC.)	3677 S.F. (0.0843 AC.)	4681 S.F. (0.10746 AC.)



SUPV.	J.A.C.
DESIGN	K.O.E.
DRAWN	N.S.
CHECKED	K.O.E.
DATE	12/15/2020

FD SUBMITTAL

**WMC**  
CONSULTING ENGINEERS  
WENGELL, McDONNELL & COSTELLO  
87 HOLMES ROAD  
NEWINGTON, CT 06111  
(860) 667-9624

**PREPARED FOR**  
TOWN OF WALLINGFORD  
45 SOUTH MAIN STREET  
WALLINGFORD, CT 06492

**REHABILITATION OF SOUTH TURNPIKE ROAD  
CULVERT OVER MANSION BROOK  
IMPACT PLAN**

D - S. TURNPIKE ROAD - S.F.D. - 16032.10 -	SHEET	4
SIZE PROJECT FILE NAME NUMBER REV. OF		14



Wengell, McDonnell, and Costello Consulting Engineers (WMC) has been retained by the town of Wallingford to perform design services for the rehabilitation of South Turnpike Road Culvert (#148-0028) over Mansion Road Brook. South Turnpike Road is a two-lane minor arterial that runs north-south parallel to Route 15 in southern Wallingford. The crossing is approximately 0.25 miles north of Mansion Road.

The existing crossing is reported to have been in use since 1935 and has a current structural rating of 4 out of 9, which is fair to poor condition. A large scour hole has formed at the outlet and is threatening the stability of the downstream wall. This project proposes to repair the existing culvert by applying a centrifugally cast concrete liner to the culvert interior that will be approximately 1 inch thick. Inlet geometry will be improved by adding a 45° bevel to account for the slight decrease in capacity. Riprap will also be added to the outlet to prevent further scouring.

Mansion Road Brook has been studied by FEMA and has a regulatory Floodway for this reach. The culvert is located within a numbered FEMA flood zone. Project hydrology is based on the current FIS for New Haven County, dated May 16, 2017. The drainage area for the culvert is 0.94 square miles. This classifies the crossing as a Small Structure (less than 1 square mile). The ConnDOT Drainage Manual states that a structure of this size should pass the 100-year flood event with at least 1 foot of roadway freeboard.

Estimated impacts are as follows:

Wetland Impact Areas

Wetland Impacts	Area	
	Ft <sup>2</sup>	Acres
Temporary	975	0.0224
Permanent	630	0.0144
<b>Total</b>	<b>1,605</b>	<b>0.0368</b>
<b>Watercourse Impacts</b>		
Temporary	724	0.0166
Permanent	1348	0.0309
<b>Total</b>	<b>2,072</b>	<b>0.0475</b>
<b>Overall Total Impacts</b>	<b>3,677</b>	<b>0.0843</b>