TOWN OF NORWICH
REQUEST FOR BIDS

CULVERT REPLACEMENT PROJECT – New Boston Rd and Beaver Meadow Road

Issued: February 1, 2023

Project Location

The following culverts (locations are approximate and will be confirmed in the field) are to be replaced as follows:

1. New Boston Road
    a. Culvert No. 10 located at Longitude and Latitude: -72.3115, 43.7405
    b. Culvert No. 13 located at Longitude and Latitude: -72.3114, 43.7427
    c. Culvert No. 15 located at Longitude and Latitude: -72.3121, 43.7441
    d. Culvert No. 21 located at Longitude and Latitude: -72.3131, 43.7499

2. Beaver Meadow Road
    a. Culvert No. 17 located at Longitude and Latitude: -72.3334, 43.7323
    b. Culvert No. 22 located at Longitude and Latitude: -72.3377, 43.7356
    c. Culvert No. 24 located at Longitude and Latitude: -72.3396, 43.7372
    d. Culvert No. 25 located at Longitude and Latitude: -72.3404, 43.7381
    e. Culvert No. 28 located at Longitude and Latitude: -72.3454, 43.7424
    f. Culvert No. 29 located at Longitude and Latitude: -72.3463, 43.7437
    g. Culvert No. 35 located at Longitude and Latitude: -72.3544, 43.7478

Project Description (Existing Conditions)

Culverts located both on New Boston Road and Beaver Meadow Road are in poor condition and current conditions are described below:

1. New Boston Road
    a. Culvert No. 10 is an existing 18-inch diameter steel pipe in poor condition. The pipe has corrosion and end damage. Approximately 40 feet in length.
    b. Culvert No. 13 is an existing 18-inch diameter steel pipe in poor condition. The pipe has corrosion and deterioration on the bottom of the pipe. Approximately 35 feet in length.
    c. Culvert No. 15 is an existing 18-inch diameter steel pipe in poor condition. The pipe has corrosion, erosion at the header, plastic insert, and holes in the pipe. Approximately 30 feet in length.
    d. Culvert No. 21 is an existing 15-inch diameter steel pipe in poor condition. The pipe has significant corrosion and is undersized. Approximately 30 feet in length.

2. Beaver Meadow Road
    a. Culvert No. 17 is an existing 15-inch diameter steel pipe in fair condition. The pipe has corrosion, erosion at the header, end damage, and is undersized. Approximately 30 feet in length.
    b. Culvert No. 22 is an existing 15-inch diameter steel pipe in fair condition. The pipe has corrosion and is undersized. Approximately 30 feet in length.
    c. Culvert No. 24 is an existing 15-inch diameter steel pipe in fair condition. The pipe has corrosion, end damage, and is undersized. Approximately 35 feet in length.
    d. Culvert No. 25 is an existing 15-inch diameter steel pipe in fair condition. The pipe has corrosion and is undersized. Approximately 35 feet in length.
    e. Culvert No. 28 is an existing 15-inch diameter steel pipe in poor condition. The pipe has corrosion, holes in the pipe, header damage, and is undersized. Approximately 40 feet in length.

f. Culvert No. 29 is an existing 15-inch diameter steel pipe in poor condition. The pipe has significant corrosion and is undersized. Approximately 35 feet in length.
g. Culvert No. 35 is an existing 15-inch diameter steel pipe in fair condition. The pipe has corrosion and is undersized. Approximately 40 feet in length.

Project Work to be Completed and Project Specifications

In each location as detailed above, the existing culverts will be excavated, removed, and disposed of by the contractor.

Existing backfill will be removed from the trench excavation site by the contractor. Trench bottoms containing bedrock, soft muck, refuse, or other material unable to provide long-term uniform pipe support are unacceptable. All unsuitable foundation materials should be excavated before the new culvert pipe installation proceeds. The contractor should remove rock or unyielding material 1-foot below grade and 6 inches on either side of pipe. Soft areas within the foundation should be removed approximately 2 feet below grade and three times pipe width. A synthetic fabric (geotextile) will be required to separate native soil from backfill material.

Excavation will occur at each culvert location using the lines and grades of the existing culverts unless final cover depth requirements or site conditions dictate adjustments be made. Minimum trench cover depth and width requirements for the new 18-inch culvert pipe will be as shown on the Trench Installation Detail in Attachment No.1.

Trench boxes will be required to be used for all trenching work per OSHA requirements. The length of the trench box should be suitable for the pipe length. It is recommended that the contractor provide a 'sub-trench' within which to place the pipe and backfill. In this way, the trench box can be pulled along the top edge of the sub-trench without affecting the backfill in the pipe embedment zone. If a sub-trench is not used, dragging a trench box should only be done if it does not damage the pipe or disrupt the backfill; otherwise, the box should be lifted vertically into its new position, again taking great care not to disturb the pipe or backfill.

A minimum of 4 inches of bedding material will be used prior to placing the new culvert pipe. The pipe bedding material will either a fine graded crushed gravel meeting the requirements VTrans 704.05B or sand borrow meeting the requirements of VTrans 703.03A.

All culverts described above will be replaced with 18-inch ADS HP Storm Dual Wall Pipe or approved equivalent. Refer to the ADS Corrugated Plastic Pipe Storm Installation Guide for installation details.

An initial backfill material will be used to backfill around the pipe. This initial backfill material will be a fine graded crushed gravel meeting the requirements of VTrans 704.05B. The backfill material will be carefully haunched around the pipe to eliminate voids. The initial backfill material will be compacted with appropriate compaction equipment to a minimum 6 inches above the pipe.

The remaining final cover to the base of the pavement can be suitable material removed from the original excavation that is free of organics, refuse, muck, wet, and clayey soils. The minimum depth of cover should meet the requirements as shown on the HP Storm Trench Installation Detail in Attachment No.1. The loading should meet the requirements of AASHTO H-25 and should be no less than 24 inches in depth. The final cover should be placed in layers that are no thicker than 6-8 inches and compacted (utilizing water if necessary). Compaction of the final cover should be completed by the contractor. If the owner is not satisfied that compaction is being adequately maintained, it is the responsibility of the contractor to provide adequate onsite soil testing for verification. If a subbase gravel was used underneath the existing pavement, the contractor should replace the subbase gravel with similar gravel and depth.

The culvert inlets and outlets should be armored to prevent erosion and channelization. Armoring should be made with erosion stone meeting the requirements of VTrans 706.04 (size will be determined on site conditions). The extent of the armoring will depend on the topography and specific onsite conditions, but in general placed around the entire pipe ends and extend from the pipe inlet and outlet ends to an extent no less than 12 linear feet (on either side of the inlet channel) and on the downstream side of the culvert. Steep outfall

topography may dictate additional armoring and should be anticipated.

In areas where roadside shoulders are present, the shoulders should be re-installed as similar to adjacent areas in depth and type of gravel.

New culvert pipe markers will be required to be installed on either side of the new pipe. These markers should be approved by the DPW Director. The location of the new culvert pipe should be documented, and coordinates provided to the DPW.

Paving the trench limits will be required. Prior to paving, at least 10 feet on either side of the trench limits should be cold planed. The existing paving thickness is anticipated to be approximately 5 to 6 inches thick. Once the cold plaining is completed and prior to paving, all cold-planed areas and pavement cut edges should be tacked by emulsified asphalt. The base layer will be a VTrans 3/4-inch asphalt mix placed in compacted lifts no greater than 2 inches and the surface (wearing course) layer will be a 1 1/2-inch compacted lift thickness of a VTrans 3/8-inch asphalt mix.

During the work, traffic will be required to be maintained for one lane traffic using a trench plate or working on one side of the road at any time. Traffic control will be required and all traffic control delineation, traffic signs, and flagging will be required to follow the MUTCD latest edition.

All construction work will be performed in accordance with the technical requirements of the Vermont Agency of Transportation 2018 Standard Specifications for Construction. Payment for the work shall be based on the pay units and unit prices defined in the bid tabulation and the Request for Bids.

Intention Of Terms

The Town would like to have the project completed as soon as possible, but in no case no later than June 30, 2023, for the culverts on New Boston Road and no later than July 30, 2023 for the culverts on Beaver Meadow Road.

All work shall be performed within the existing right-of-way limits, which are assumed to be three rods wide centered on both New Boston Road and Beaver Meadow Road. No additional R.O.W. rights are anticipated for this work.

Bidding Notification

If you are considering entering a bid for this work, please notify Chris Kaufman at the following email address: ckaufman@norwich.vt.us. The Town will use this notification to contact you or your firm in the event that there is a change to the project or bid schedule.

Site Visit

Although a site visit is not mandatory, it is highly recommended due to the nature of the work. Please reach out to Chris Kaufman directly to schedule a visit.

Questions Due Date

Questions may be submitted by email to Chris Kaufman at the following address: ckaufman@norwich.vt.us. The due date for questions is Friday, February 17, 2023, at 3:00 PM.

Bid Submission and Due Date

Bids are due by **Friday, February 24, 2023, at 1:00 PM** (prevailing time). Bids shall be submitted in a sealed envelope addressed to the Town Manager, Town of Norwich at PO Box 376, Norwich VT, 05055 or can be hand delivered to the Town of Norwich at 300 Main St, Norwich, VT 05055. The envelope should be plainly marked with the name of the bid. Bid proposals will be date stamped on the outside of the envelope immediately upon receipt by the Town. Any bid may be withdrawn in writing prior to the scheduled time for the opening of the bids. Any bid received after the date and time specified will not be considered and will be returned to the bidder unopened. Any exceptions to the bid specifications or proposed work as described must be noted by the bidder. A bidder submitting a bid certifies that the bid was made in good faith without

fraud, collusion, or connection of any kind with any other bidder for the same work, and that the bidder is competing solely on his/her behalf with connection with or obligation to any undisclosed person or firm.

Project Schedule
The Town intends to open bids on February 24, 2023, at the Town Office; and the Selectboard intends to select a contractor by mid-March 2023.

Traffic Control
The Town will require that all traffic signage, flagging, and traffic delineations are following MUTCD requirements. At a minimum, one-way (alternating) traffic will need to be maintained on the road during the duration of the work.

Bid Information
Please provide:
- A description of proposed approach to the project
- Proposed traffic control measures
- Completed bid tabulation
- Proposed start and completion dates for all work
- A list with descriptions of similar work performed
- Two references, with contact information, who are familiar with similar work performed

Bid Opening
Every bid received prior to the bid submission deadline will be publicly opened and read aloud and recorded by the Town Manager and the respective Department Head.

Criteria for Bid Selection
In evaluating bids, the Town will consider the following criteria:
- Price
- Bidders' ability to perform within the specified time limits
- Bidders experience and reputation, including past performance for the Town
- Quality of the materials and services specified in the bid
- Bidder's ability to meet other terms and conditions, including insurance and/or bond requirements
- Bidder's financial responsibility
- Bidder's availability to provide future service, maintenance, and support
- Nature and size of the bidder
- Contract provisions that are acceptable to the Town
- Bidder is not on any debarment list related to goods and services the bidder provides
- Any other factors that the Town determines relevant and appropriate in connection with the project

A low bid does not guarantee award of the contract.

Penalty for Late Completion
For every day that actual completion of the project is past the contractor's proposed completion date, excluding rain dates or issues beyond the contractor's control, $100 may be deducted from the Town's payment.

Insurance
Prior to starting work the selected bidder will be required to provide a Certificate of Liability Insurance with commercial general liability coverage of no less than $1,000,000 per occurrence and $2,000,000 per aggregate, naming the Town of Norwich as an additional insured. The Certificate must also include Workers Compensation Insurance.

Payment Schedule
One invoice is to be submitted following the completion of all work and inspection by the Town's Public Works Director.

Town Contact

Questions may be directed to Chris Kaufman at the following address: ckaufman@norwich.vt.us.

The Town reserves the rights to select any bid for any reason, and to reject any or all bids.

The Town also reserves the right to award any portion of the work as listed in the Project Description and Bid Form.

BID FORM
Culvert Replacement New Boston and Beaver Meadow Roads, Town of Norwich

Proposal of _____ (hereinafter called Bidder), organized and existing under the laws of the State of _____ doing business as _____

(a corporation, a partnership, of an individual)

To the Town of Norwich, Vermont (hereinafter called Owner)

The Bidder represents that this bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation. The bidder has not directly or indirectly induced or solicited any other bidder to submit a false bid. Bidder has not solicited or induced any person, firm, or corporation to refrain from bidding and the bidder has not sought by collusion to obtain for himself any advantage over any other bidder or Owner.

The undersigned bidder proposed and agreed, if this bid is accepted, to enter into an agreement with Owner to furnish all materials and to complete all work as specified or indicated in the Contract Documents for the contract price and within the contract time indicated in this bid and in accordance with the Contract Documents.

Bidder hereby agrees to commence Work under this contract on the date of issuance of the Notice to Proceed and that the Final Completion date for this contract is _____.

Bidder acknowledges receipt of the following Addenda:

The Bidder agrees to perform all the Work described in the Contract Documents for the following schedule of prices. Material, labor, or construction operations not otherwise specified, are to be included in the bid item most appropriate to the work involved and otherwise considered incidental to the Contract. Unqualified bids will not be accepted.

ITEM #	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1	Culvert No. 10 New Boston Rd				
	LS	1		$_____	$_____
	Unit Price in Words_____				
2	Culvert No. 13 New Boston Rd				
	LS	1		$_____	$_____
	Unit Price in Words_____				
3	Culvert No. 15 New Boston Rd				
	LS	1		$_____	$_____
	Unit Price in Words_____				
4	Culvert No. 21 New Boston Rd				
	LS	1		$_____	$_____
	Unit Price in Words_____				
5	Culvert No. 17 Beaver Meadow Rd				
	LS	1		$_____	$_____
	Unit Price in Words_____				
6	Culvert No. 22 Beaver Meadow Rd				
	LS	1		$_____	$_____
	Unit Price in Words_____				
7	Culvert No. 24 Beaver Meadow Rd				
	LS	1		$_____	$_____
	Unit Price in Words_____				

8 Culvert No. 25 Beaver Meadow Rd

LS 1 $_____ $_____

Unit Price in Words_____

9 Culvert No. 28 Beaver Meadow Rd

LS 1 $_____ $_____

Unit Price in Words_____

10 Culvert No. 29 Beaver Meadow Rd

LS 1 $_____ $_____

Unit Price in Words_____

11 Culvert No. 35 Beaver Meadow Rd

LS 1 $_____ $_____

Unit Price in Words_____

12 Mobilization/Demobilization (Including Access & Staging)

LS 1 $_____ $_____

Unit Price in Words_____

Total Bid (Total of above)

$_____

The lowest responsive and responsible bidder will be determined by the Total Base Bid.

The above unit prices shall include all labor, materials, removal, overhead, profit, insurance, etc. to cover the finished work of the several kinds called for on the drawings and specifications.

THE ABOVE PROPOSAL IS HEREBY RESPECTFULLY SUBMITTED BY:

_____

Contractor

_____

By

_____

Title

_____

Business Address

_____

City State

_____

Phone Number

_____

Email Address

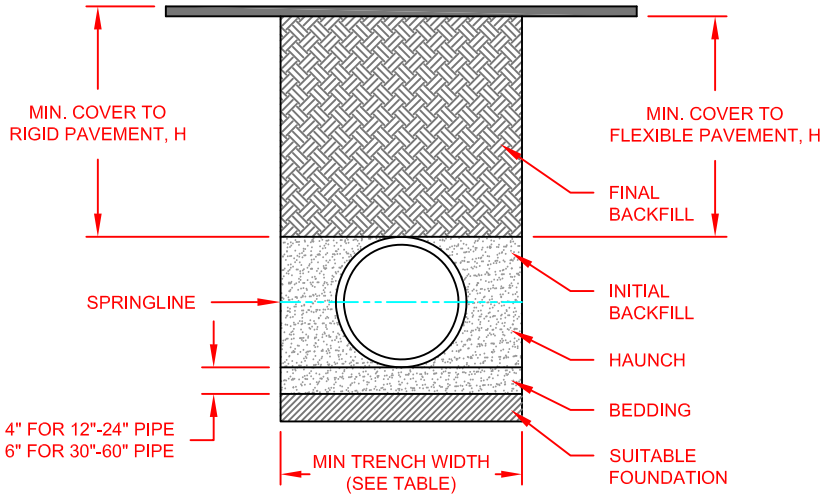
_____

Date

ATTEST_____(Signature)

ATTACHMENT 1

HP STORM TRENCH INSTALLATION DETAIL



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS IVB MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24" (300mm-600mm) DIAMETER PIPE; 6" (150mm) FOR 30"-60" (750mm-1500mm) DIAMETER PIPE. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT; USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT; USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS; CLASS I OR II MATERIAL COMPACTED TO 90% SPD AND CLASS III COMPACTED TO 95% SPD IS REQUIRED. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

7. FOR ADDITIONAL INFORMATION SEE TECHNICAL NOTE 2.04.

TABLE 1, RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

TABLE 2, MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION	
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48" (300mm - 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

TABLE 3, MAXIMUM COVER FOR ADS HP STORM PIPE, ft

	CLASS I	CLASS II			CLASS III		CLASS IV
PIPE DIA	COMPACTED	95%	90%	85%	95%	90%	95%
12" (300mm)	41 (12.5m)	28 (8.5m)	21 (6.4m)	16 (4.9m)	20 (6.1m)	16 (4.9m)	16 (4.9m)
15" (375mm)	42 (12.8m)	29 (8.8m)	21 (6.4m)	16 (4.9m)	21 (6.4m)	16 (4.9m)	16 (4.9m)
18" (450mm)	44 (13.4m)	30 (9.1m)	21 (6.4m)	16 (4.9m)	22 (6.7m)	17 (5.2m)	16 (4.9m)
24" (600mm)	37 (11.3m)	26 (7.9m)	18 (5.5m)	14 (4.3m)	19 (5.8m)	14 (4.3m)	14 (4.3m)
30" (750mm)	39 (11.9m)	27 (8.2m)	19 (5.8m)	14 (4.3m)	19 (5.8m)	15 (4.6m)	14 (4.3m)
36" (900mm)	28 (8.5m)	20 (6.1m)	14 (4.3m)	10 (3.0m)	14 (4.3m)	11 (3.4m)	10 (3.0m)
42" (1050mm)	30 (9.1m)	21 (6.4m)	14 (4.3m)	10 (3.0m)	15 (4.6m)	11 (3.4m)	10 (3.0m)
48" (1200mm)	29 (8.8m)	20 (6.1m)	14 (4.3m)	9 (2.7m)	14 (4.3m)	10 (3.0m)	10 (3.0m)
60" (1500mm)	29 (8.8m)	20 (6.1m)	14 (4.3m)	9 (2.7m)	14 (4.3m)	10 (3.0m)	9 (2.7m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE
UNIT WEIGHT OF SOIL (γs) = 120 PCF

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
6	REV. MAXIMUM COVER HEIGHTS	RWD	01/11/17	

TRENCH INSTALLATION DETAIL (HP STORM)

DRAWING NUMBER: STD-101D

ADS
ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026

DRAWN BY:	JAB
DATE:	01/29/09
CK'D BY:	
SCALE:	NTS
SHEET	1 OF 1