**TOWN OF NORWICH REQUEST FOR BIDS**

**CULVERT REPLACEMENT PROJECT – Route 132 and Turnpike Road**

**Issued: March 15, 2024**

## Project Location

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

1. Route 132
    a. Culvert No. 21 located at Longitude and Latitude: 43.774800 -72.258000

2. Turnpike Road
    a. Culvert No. 7 located at Longitude and Latitude: 43.729700 -72.316700
    b. Culvert No. 9 located at Longitude and Latitude: 43.731700 -72.316800
    c. Culvert No. 10 located at Longitude and Latitude: 43.732600 -72.316800
    d. Culvert No. 13 located at Longitude and Latitude: 43.735200 -72.316900

## Project Description (Existing Conditions)

The culverts above located both on Route 132 and Turnpike Road (See Figure 1) are in poor condition and current conditions are described below:

1. Route 132
    a. Culvert No. 21 is an existing 15-inch diameter steel pipe in fair condition. The pipe has corrosion, undersized, and is mostly plugged. Approximately 35 feet in length.

2. Turnpike Road
    a. Culvert No. 7 is an existing 15-inch diameter steel pipe in fair condition. The pipe has corrosion, clogged, and is undersized. Approximately 35 feet in length.
    b. Culvert No. 9 is an existing 15-inch diameter steel pipe in poor condition. The pipe has corrosion, clogged, and is undersized. Approximately 30 feet in length.
    c. Culvert No. 10 is an existing 12-inch diameter plastic pipe in poor condition. The pipe is clogged and undersized. Approximately 40 feet in length.
    d. Culvert No. 13 is an existing 15-inch diameter steel pipe in poor condition. The pipe has corrosion, end damage, clogged, 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 unsuitable 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 culvert pipes will be as shown on the Trench Installation Detail in Attachment No.1.

Trenching work will be required to follow OSHA requirements per 29 CFR 1926.651 and 1926.652 or comparable OSHA-approved state plan requirements. Several key points included but not limited to:

- If a trench box is used, it must extend 18 inches above the surface to prevent cave-ins. The maximum distance between the bottom of the trench box and the bottom of the trench should be no more than 2 feet. Excavations 24 inches below the bottom of the trench box are prohibited.
- Means of egress is required every 25 feet for all trenches.
- Trenches 5 feet deep or greater require a protective system unless the excavation is made entirely in stable rock.

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 an 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 metal culvert pipe markers (with reflectors) 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 5 feet on either side of the trench limits should be cold planed. The existing paving thickness is estimated 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 August 30, 2024.

All work shall be performed within the existing right-of-way limits, which are approximately 25 feet on each side of the centerline. No additional R.O.W. 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, bid addenda, 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, March 29, 2024, at 3:00 PM.

## Bid Submission and Due Date

Bids are due by **Friday, April 5, 2024, 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 April 5, 2024, at the Town Office; and the Selectboard intends to select a contractor in April 2024.

## Traffic Control

The Town will require that all traffic signage, flagging, and traffic delineations follow 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:

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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. 21 Route 132 | LS | 1 | $_____ | $_____ |
| | Unit Price in Words_____ | | | | |
| 2 | Culvert No. 7 Turnpike Rd | LS | 1 | $_____ | $_____ |
| | Unit Price in Words_____ | | | | |
| 3 | Culvert No. 9 Turnpike Rd | LS | 1 | $_____ | $_____ |
| | Unit Price in Words_____ | | | | |
| 4 | Culvert No. 10 Turnpike Rd | LS | 1 | $_____ | $_____ |
| | Unit Price in Words_____ | | | | |
| 5 | Culvert No. 13 Turnpike Rd | LS | 1 | $_____ | $_____ |
| | Unit Price in Words_____ | | | | |
| 6 | 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

_____

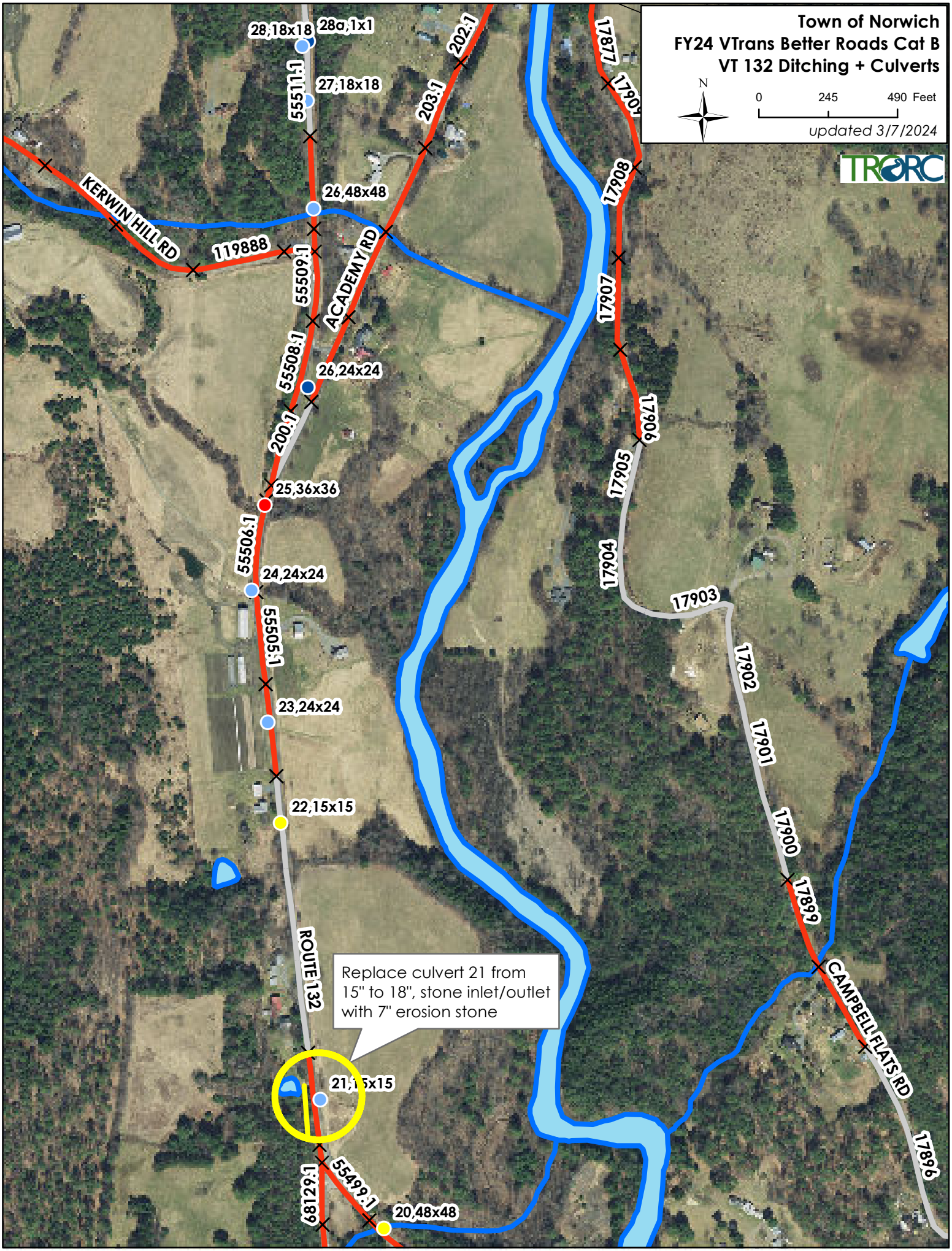
Email Address

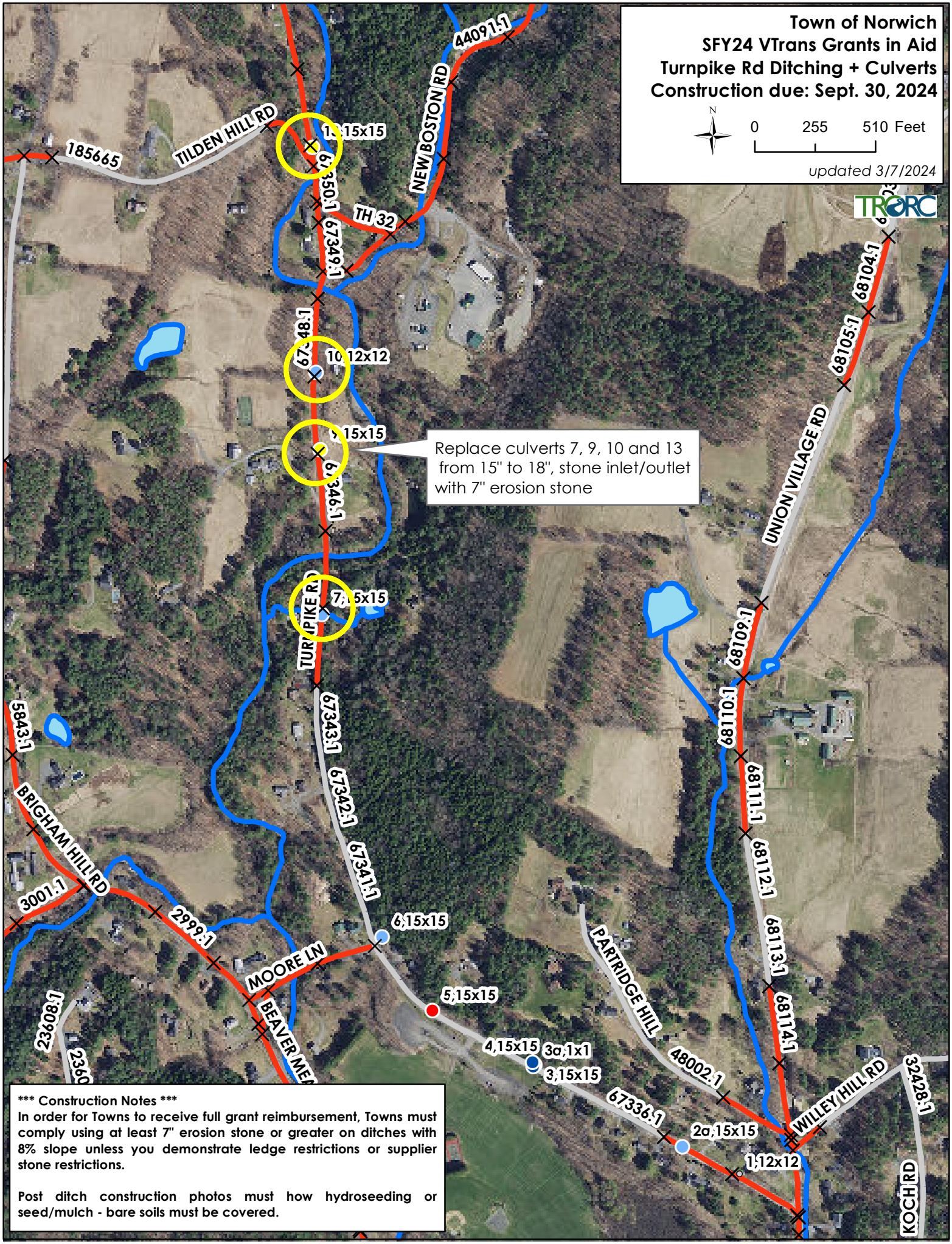
_____

Date

ATTEST_____(Signature)

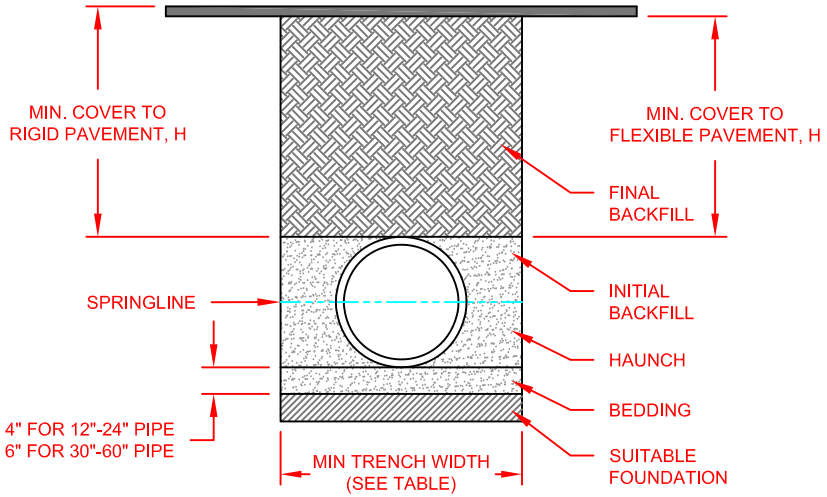
# FIGURE 1


Town of Norwich
FY24 VTrans Better Roads Cat B
VT 132 Ditching + Culverts
N
0
245
490 Feet
updated 3/7/2024
TRORC
28,18x18
28a,1x1
27,18x18
26,48x48
26,24x24
25,36x36
24,24x24
23,24x24
22,15x15
20,48x48
55511.1
202.1
203.1
KERWIN HILL RD
119888
55509.1
ACADEMY RD
55508.1
200.1
55506.1
55505.1
ROUTE 132
48129.1
55499.1
17877
17909
17908
17907
17906
17905
17904
17903
17902
17901
17900
17899
CAMPBELL FLATS RD
17896
Replace culvert 21 from 15" to 18", stone inlet/outlet with 7" erosion stone


Town of Norwich
SFY24 VTrans Grants in Aid
Turnpike Rd Ditching + Culverts
Construction due: Sept. 30, 2024
N
0
255
510 Feet
updated 3/7/2024
TRORC
Replace culverts 7, 9, 10 and 13 from 15" to 18", stone inlet/outlet with 7" erosion stone
TILDEN HILL RD
185665
NEW BOSTON RD
44091:1
TH 32
67350.1
67349.1
67348.1
10,12x12
15x15
67346.1
TURNPIKE RD
67343.1
67342.1
67341.1
6,15x15
5,15x15
4,15x15
3a,1x1
3,15x15
2a,15x15
1,12x12
UNION VILLAGE RD
68104.1
68105.1
68109.1
68110.1
68111.1
68112.1
68113.1
68114.1
48002.1
67336.1
32428.1
WILLEY HILL RD
KOCH RD
PARTRIDGE HILL
BRIGHAM HILL RD
3001.1
2999.1
MOORE LN
BEAVER MEA
23608.1
5843.1
*** Construction Notes ***
In order for Towns to receive full grant reimbursement, Towns must comply using at least 7" erosion stone or greater on ditches with 8% slope unless you demonstrate ledge restrictions or supplier stone restrictions.
Post ditch construction photos must how hydroseeding or seed/mulch - bare soils must be covered.

# 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 |