

TOWN OF TEMPLETON
HIGHWAY DEPARTMENT

Specifications for trench construction and excavations within public ways

Section 1
GENERAL REQUIREMENTS

1.1 Preface

- 1.1.1 Work requiring permits – Any utility, private contractor or any person(s) who intends to break any street or sidewalk surface, or excavate any road or shoulder should contact the Templeton Highway Department.
- 1.1.2 Granting of permit – This permit will be granted if the proposed work is in the best interests of the Town and its inhabitants, is appurtenant to a building permit duly issued by the Building Inspector, or is in conjunction with the construction of a road shown on an approved subdivision plan. The permit is conditional upon the permittee's willingness to abide by these Specifications.
- 1.1.3 Permit Fees – Application forms for a permit hereunder are available from the Templeton Highway Department, 381 Baldwinville Road, Templeton, MA. The permit fee is **\$100.00**. All fees are non-refundable.
- 1.1.4 Plan Approval – Plans or sketches showing the proposed work, must be submitted with the application, and are subject to the approval of the Highway Superintendent or his designee.
- 1.1.5 Interpretation of Specifications – The Superintendent or his designee will be solely responsible for the interpretation of these Specifications, and all work hereunder must be done to his satisfaction.
- 1.1.6 Time Limits – The Superintendent or his designee, in his judgement, may extend any time limit in these Specifications if weather or other conditions beyond the control of the permittee have hindered the proper completion of the work.
- 1.1.7 Inspection Schedule – Routine inspections will normally be required at the following phases of construction, however, this schedule will be adjusted to fit the size and complexity of individual jobs. The Highway Department will generally provide only the minimum amount of inspection necessary to insure reasonable compliance with these Specifications. The contractor must notify the Highway Department at least 24 hours in advance whenever an inspection is indicated.
 - 1.1.7.1 Prior to the issuance of a permit hereunder, a site inspection will features as road bounds, private property bound, stone walls, pavement, sidewalks, trees, etc.
 - 1.1.7.2 After the excavation and installation of the proposed utility and later during the compaction of backfill and installation of surface gravel.
 - 1.1.7.3 After installation of the temporary patch.
 - 1.1.7.4 After installation of the final patch.

1.1.7.5 Prior to release of the bond.

1.1.7.6 At other specific times deemed necessary by the Superintendent of his designee.

1.1.8 Emergency Utility Repair- Contractors may undertake emergency underground repair of their facilities without a permit when such repairs must be made at night or on weekends or holidays provided that a permit is applied for on the first regular business day following the repair, and the company takes all reasonable measures provided for in these Specifications for the care and safety of the public.

1.2 Public Safety – As required by G.L. c. 82A, §1, and 520 CMR 14.04, **an excavator shall not leave any open trench unattended without first making every reasonable effort to eliminate any recognized safety hazard that may exist as a result of leaving said open trench unattended.**

1.2.1 General – The permittee, from the time the work commences until the work has been approved in writing by the Superintendent or his designee, shall be responsible for the safety of the public. Depending upon the nature of the work, traffic control devices shall be applied.

1.2.2 Detours – If the nature of the work requires the closing of all or a portion of a public way, the Police Chief must be contacted for proper traffic control.

1.2.3 Warning Devices – When required by the nature of the work; signs, lights and barricades, erected at the expense of the permittee shall be utilized.

1.2.4 “Dig Safe” – Massachusetts Law (Chapter 82, Section 40) requires that contractors notify public utility companies at least 72 hours before any excavation in a public way. A telephone call to the Underground Plant Damage Prevention System “ Dig Safe” satisfies this requirement. The “Dig Safe” job number assigned by the Underground Plant Damage Prevention System must be included on the permit application. A permit cannot be issued until the applicant demonstrates compliance with MGL Ch. 82, Sec. 40.

Section 2

EXCAVATIONS

2.1 General

2.1.1 Preservation of physical features – All excavations and other work within the limits of a town way will be conducted in a manner which will minimize damage or disruption to such features as stonewalls, trees, fences, guard rails, etc.

2.1.2 Working around public shade trees – Any work within the drip line of a public shade tree must be approved by the Templeton Tree Warden.

2.1.3 New Roads – The cutting of paved road surfaces less than five years old will not be permitted, unless approved by the Highway Superintendent or his designee.

2.1.4 Seasonal limit for construction – No paved road surface may be cut between November 15 and March 15 except that in the interest of public safety and convenience the Highway Superintendent or his designee may issue a permit for an emergency repair to an existing facility.

2.2 Materials

- 2.2.1 Approval of materials – All materials used on construction within public ways shall be subject to approval by the Superintendent or his designee. This will include but not be limited to, the size, type, and quality of pipe, the type of gravel backfill, the quality of the patching material, etc. Cold patch as a temporary or permanent patching material will not be allowed except that between November 15 and March 15 it may be used for temporary patches on emergency cuts allowed under Section 1.1.8.

2.3 Trenches

Section 4. For purposes of this chapter, a “trench” shall be defined as an excavation which is narrow in relation to its length, made below the surface ground in excess of 3 feet below grade and the depth of which is, in general, greater than the width, but the width of the trench, as measured at the bottom, is no greater than 15 feet and the words “excavator”, “excavation” and “emergency” shall have the same meanings as defined in section 40 of chapter 82.

- 2.4 Pavement cut-backs – After excavation is commenced, the bituminous or concrete street or sidewalk surface shall be cut vertically in a line parallel to the centerline of construction and approximately one foot wider on all sides than the excavation, using an approved power tool, to allow for trench excavation without further disturbing the road or sidewalk surface on either side of the trench.

- 2.4.1 Backfill – The backfill shall consist of the excavated material if it is declared suitable by the Superintendent or his designee. Backfill will be placed in successive layers of not more than six (6) inches of compacted depth. If, in the opinion of the Superintendent or his designee, the excavated material is unsuitable, the applicant in an approved location shall dispose of the entire rejected material. In its place, the applicant shall bring in suitable fill material consisting of approved gravel or borrow, as directed. After thorough tamping around and beneath the utility, the six (6) inch layers of backfill will be thoroughly compacted as follows: if dry, it shall be moistened and then compacted by tamping with mechanical rammers, or by hand tampers having a tamping face not exceeding 25 square inches in area. The final 12 inches of backfill will, in all cases, consist of crushed gravel thoroughly tamped and made even with the surrounding surface.

- 2.4.2 Ready mixed flowable fill – The use of ready mixed flowable fill (or controlled low strength material) as trench backfill for all pavement cuts in excess of 30 inches in depth is encouraged in all cases, especially for such cuts on numbered routes. The composition of the mix shall be approximately as follows:

Cement	50-75 lbs
Sand	3160 lbs
Water	500-560 lbs

Final cured material is to be excavatable and have a load bearing about the same as fully compacted gravel. When this material is used, the final patch can be placed not less than 12 hours after the backfill is placed. If the final patch is not placed within 36 hours, a temporary patch according to section 2.4.3 shall be applied not less than 12 hours after the flowable backfill is placed.

- 2.4.3 Patching requirements – After backfill is in place and satisfactorily compacted, the applicant shall apply at once a 1 ½ inch temporary patch course over the entire excavated area (bituminous-concrete type I-1 hot top) to be left in place for at least one month and not more than three months, until no further settling can be reasonably expected. At that time the applicant shall remove the temporary patch course. Any uneven edges of existing pavement will be cut vertically with an approved power tool and tack coated with asphalt emulsion (RC-2). For oil treated roads, the permanent patch must be three (3) inches of bituminous-concrete (type I-1) in layers of 1 ½ inches each. For bituminous-

concrete surfaced roads, the permanent patch must be four (4) inches of bituminous-concrete (type I-1) laid in two (2) courses, a 2-½ inch binder course and a 1-½ inch top course. If existing pavement is of a greater depth, the patch should be of the same depth. At no time should the bituminous-concrete be laid in layers greater than 2 ½ inches. When the patch has been completed, the joints should be painted with RC-2 and sealed with sand.

- 2.4.4 Nights, weekends and holidays – No trench shall be left open overnight or over weekends and holidays, and no unattended trench shall be left open at any time unless the applicant has implemented one of the safeguards described in 520 CMR 14.04.
- 2.4.5 Accessibility - All driveways to homes and places of business shall be bridged and open to travel overnight.
- 2.5 Shoulders
- 2.5.1 Restoration of road shoulders – All road shoulders must be carefully returned to their original condition.
- 2.5.2 Restoration of lawns – Lawns will be restored with a minimum of four (4) inches of loam, fertilized, rolled and seeded.

Section 3

PERFORMANCE DEPOSITS AND INSURANCE

- 3.1 Performance Deposits
- 3.1.1 Deposit amount – All permits issued hereunder shall require a certified check in the amount of fifteen hundred dollars (\$1,500.00) to be deposited in an escrow account as a guarantee to abide by these specifications.
- 3.1.2 Special deposits – Street cuts over thirty (30) feet in length or significantly larger in scope than usual shall be secured by a larger amount, determined by the Highway Department Superintendent or his designee. However, the minimum deposit shall be fifteen hundred dollars (\$1,500.00). Letters of credit will be accepted only for amounts exceeding ten thousand dollars (\$10,000.00) and must be approved by the Superintendent.
- 3.1.3 Deposit release – When permanent patching, re-loaming and seeding, and all work required by the permit issued hereunder has been approved in writing by the Superintendent or his designee, the Town will refund to the applicant the amount of the deposit, less any amounts as noted below.

- 3.1.4 Deposit forfeiture – In the event that town personnel or equipment must be utilized to make emergency repairs or to complete unfinished work required by the permit issued hereunder, the cost of such repair or work will be deducted from the deposit. A standard multiplier of 2.5 will be applied to all labor and material costs to determine the amount to be deducted. If the repair or completion cost exceeds the amount of the deposit, the applicant must pay the difference to the Town of Templeton.
- 3.2 Insurance
- 3.2.1 Insurance requirements – A certificate of insurance indemnifying the Highway Department against claims for injury, death or property damage during construction, and naming the Town as an additional insured, must be filed with the permit application. The limits shall conform with the following schedule:
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| ▪ Workmen’s Compensation and Employer’s Liability | \$1 Million |
| ▪ Insurance in Compliance with Statutory Limits | \$1 Million |
| ▪ Comprehensive General Liability Insurance- each occurrence | \$1 Million |
| and aggregate amount | \$2 Million |
| ▪ Automobile Liability Insurance | \$1 Million |
| ▪ Bodily Injury: each person | \$ 300,000 |
| each occurrence | \$1 Million |
| ▪ Property Damage: each occurrence | \$ 300,000 |

Section 4

VIOLATIONS

4.1 General

- 4.1.1 Expiration of permits – If after three (3) months from the date of the permit the repair to the town way is not completed according to these Specifications and to the satisfaction of the Superintendent or his designee, the permittee will be notified in writing by the Superintendent or his designee that the permit has expired. If no action is taken by the applicant to complete the unfinished work within thirty (30) days of the date of the written notice, the Highway Department will then complete the necessary work in any manner deemed appropriate and deduct from the deposit all costs of completing the work in accordance with these specifications.
- 4.1.2 Emergency repairs – If at any time during the life of the permit the permittee allows the construction to exist in a condition dangerous to users of the road, then the Superintendent or his designee may, without written notice to the permittee, make the necessary arrangements to correct the unsatisfactory condition. The cost of such work will then be deducted from the deposit in accordance with Section 3.1.4 of these specifications at the time the deposit is refunded.
- 4.1.3 The Highway Superintendent or his designee has the authority to refuse a permit if a contractor violated these Specifications on previous construction sites.

CONDITIONS AND REQUIREMENTS PURSUANT TO G.L.C.82A AND 520 CMR 7.00 et seq. (as amended)

(1) By signing the application, the applicant understands and agrees to comply with the following:

(2)

1. No trench may be excavated unless the requirements of sections 40 through 40D of chapter 82, and any accompanying regulations, have been met and this permit is invalid unless and until said requirements have been complied with by the excavator applying for the permit including, but not limited to, the establishment of a valid excavation number with the underground plant damage prevention system as said system is defined in section 76D of chapter 164 (DIG SAFE);
2. Trenches may pose a significant health and safety hazard. Pursuant to Section 1 of Chapter 82 of the General Laws, **an excavator shall not leave any open trench unattended without first making every reasonable effort to eliminate any recognized safety hazard that may exist as a result of leaving said open trench unattended.** Excavators should consult regulations promulgated by the Department of Public Safety in order to familiarize themselves with the recognized safety hazards associated with excavations and open trenches and the procedures required or recommended by said department in order to make every reasonable effort to eliminate said safety hazards which may include covering, barricading or otherwise protecting open trenches from accidental entry.
3. Persons engaging in any in any trenching operation shall familiarize themselves with the federal safety standards promulgated by the Occupational Safety and Health Administration on excavations: 29 CFR 1926.650 et.seq. entitled Subpart P “Excavations”.
4. Excavators engaging in any trenching operation who utilize hoisting or other mechanical equipment subject to chapter 146 shall only employ individuals licensed to operate said equipment by the Department of Public Safety pursuant to said chapter and this permit must be presented to said licensed operator before any excavation is commenced;
5. By applying for, accepting and signing this permit, the applicant hereby attests to the following: (1) that they have read and understands the regulations promulgated by the Department of Public Safety with regard to construction related excavations and trench safety; (2) that he has read and understands the federal safety standards promulgated by the Occupational Safety and Health Administration on excavations: 29 CMR 1926.650 et.seq., entitled Subpart P “Excavations” as well as any other excavation requirements established by this municipality; and (3) that he is aware of and has, with regard to the proposed trench excavation on private property or proposed excavation of a city or town public way that forms the basis of the permit application, complied with the requirements of sections 40-40D of chapter 82A.
6. This permit shall be posted in plain view on the site of the trench.

For additional information please visit the Department of Public Safety’s website at www.mass.gov/dps

Summary of Excavation and Trench Safety Regulation (520 CMR 14.00 et seq.)

This summary was prepared by the Massachusetts Department of Public Safety pursuant to G.L.c.82A and does not include all requirements of the 520 CMR 14.00. To view the full regulation and G.L.c.82A, go to [www/mass.gov/dps](http://www.mass.gov/dps)

Pursuant to M.G.L. c. 82, § 1, the Department of Public Safety, jointly with the Division of Occupational Safety, drafted regulations relative to trench safety. The regulation is codified in section 14.00 of title 520 of the Code of Massachusetts Regulations. The regulation requires all excavators to obtain a permit prior to the excavation of a trench made for a construction-related purpose on public or private land or rights-of-way. All municipalities must establish a local permitting authority for the purpose of issuing permits for trenches within their municipality. Trenches on land owned or controlled by a public (state) agency requires a permit to be issued by that public agency unless otherwise designated.

In addition to the permitting requirements mandated by statute, the trench safety regulations require that all excavators, whether public or private, take specific precautions to protect the general public and prevent unauthorized access to unattended trenches. Accordingly, unattended trenches must be covered, barricaded or backfilled. Covers must be road plates at least $\frac{3}{4}$ " thick or equivalent; barricades must be fences at least 6' high with no openings greater than 4" between vertical supports; backfilling must be sufficient to eliminate the trench. Alternatively, excavators may choose to attend trenches at all times, for instance by hiring a police detail, security guard or other attendant who will be present during times when the trench will be unattended by the excavator.

The regulations further provide that local permitting authorities, the Department of Public Safety, or the Division of Occupational Safety may order an immediate shutdown of a trench in the event of a death or serious injury; the failure to obtain a permit; or the failure to implement or effectively use adequate protections for the general public. The trench shall remain shutdown until re-inspected and authorized to re-open provided, however, those excavators shall have the right to appeal an immediate shutdown. Permitting authorities are further authorized to suspend or revoke a permit following a hearing. Excavators may also be subject to administrative fines issued by the Department of Public Safety for identified violations.

Summary of 1926 CFR Subpart P-OSHA Excavation Standard

This is a worker protection standard, and is designed to protect employees who are working inside a trench. This summary was prepared by the Massachusetts Division of Occupational Safety and not OSHA for informational purposes only and does not constitute an official interpretation by OSHA of their regulations, and may not include all aspects of the standard.

For further information or a full copy of the standard go to www.osha.gov.

- **Trench Definition per the OSHA standard:**
 - An excavation made below the surface of the ground, narrow in relation to its length.
 - In general, the depth is greater than the width, but the width of the trench is not greater than fifteen feet.
- **Protective Systems** to prevent soil wall collapse are always required in trenches deeper than 5', and are also required in trenches less than 5' deep when the competent person determines that a hazard exists. Protection options include:
 - Shoring. Shoring must be used in accordance with the OSHA Excavation standard appendices, the equipment manufacturer's tabulated data, or designed by a registered professional engineer.
 - Shielding (Trench Boxes). Trench boxes must be used in accordance with the equipment manufacturer's tabulated data, or a registered professional engineer.
 - Sloping or Benching. In Type C soils (what is most typically encountered) the excavation must extend horizontally 1 ½ feet for every foot of trench depth on both sides, 1 foot for Type B soils, and ¾ foot for Type A soils.
 - A registered professional engineer must design protective systems for all excavations greater than 20' in depth.
- **Ladders** must be used in trenches deeper than 4'.
 - Ladders must be inside the trench with workers at all times, and located within 25' of unobstructed lateral travel for every worker in the trench.
 - Ladders must extend 3' above the top of the trench so workers can safely get onto and off of the ladder.
- **Inspections** of every trench worksite are required:
 - Prior to the start of each shift, and again when there is a change in conditions such as a rainstorm.
 - Inspections must be conducted by the competent person (see below).
- **Competent Person(s) is:**
 - Capable (i.e., trained and knowledgeable) in identifying existing and predictable hazards in the trench, and other working conditions which may pose a hazard to workers, and
 - Authorized by management to take necessary corrective action to eliminate the hazards. Employees must be removed from hazardous areas until the hazard has been corrected.
- **Underground Utilities** must be:
 - Identified prior to opening the excavation (e.g., contact Digsafe).
 - Located by safe and acceptable means while excavating.
 - Protected, supported, or removed once exposed.
- **Spoils** must be kept back a minimum of 2' from the edge of the trench.
- **Surface Encumbrances** creating a hazard must be removed or supported to safeguard employees. Keep heavy equipment and heavy material as far back from the edge of the trench as possible.
- **Stability of Adjacent Structures:**

- Where the stability of adjacent structures is endangered by creation of the trench, they must be underpinned, braced, or otherwise supported.
- Sidewalks, pavements, etc. shall not be undermined unless a support system or other method of protection is provided.
- **Protection from water accumulation hazards:**
 - It is not allowable for employees to work in trenches with accumulated water. If water control such as pumping is used to prevent water accumulation, this must be monitored by the competent person.
 - If the trench interrupts natural drainage of surface water, ditches, dikes or other means must be used to prevent this water from entering the excavation.
- **Additional Requirements:**
 - For mobile equipment operated near the edge of the trench, a warning system such as barricades or stop logs must be used.
 - Employees are not permitted to work underneath loads. Operators may not remain in vehicles being loaded unless vehicles are equipped with adequate protection as per 1926.601(b)(6).
 - Employees must wear high-visibility clothing in traffic work zones.
 - Air monitoring must be conducted in trenches deeper than 4' if the potential for a hazardous atmosphere exists. If a hazardous atmosphere is found to exist (e.g., $O_2 < 19.5\%$ or $> 23.5\%$, 20% LEL, specific chemical hazard), adequate protections shall be taken such as ventilation of the space.
 - Walkways are required where employees must cross over the trench. Walkways with guardrails must be provided for crossing over trenches > 6' deep.
 - Employees must be protected from loose rock or soil through protections such as scaling or protective barricades.