DEPARTMENT OF PUBLIC WORKS

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Standards To Be Employed by Public Utility Operators When Restoring any of the Streets, Lanes and Highways in Municipalities

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1.0 Purpose and Scope

1.1 The purpose of these standards is to ensure that a Utility, after excavating in any municipal street, lane and highway ("public ways"), restores such street, lane and highway to the same condition in which they were found before the excavation.

1.2 Nothing in these standards may be construed to restrict the Constitutional or statutory authority of cities or towns ("Municipalities") with respect to public ways. Nothing in these standards is intended to prevent a utility and a municipality from mutually agreeing to exceptions to these standards.

1.3 Nothing in these standards is intended to be inconsistent with any ordinance or by-law and the constitution and laws of the Commonwealth.

1.4 Nothing in these standards is intended to create a contractor relationship between a Municipality and the Utilities regulated by the DTE.

1.5 Nothing in these standards is intended to be inconsistent with the Department's regulations
concerning the Design, Construction, Operation, and Maintenance of Intrastate Pipelines Operating in Excess of 200 PSIG, 220 C.M.R. §§ 109.00 et seq. Inasmuch as the cover and backfill requirements in these standards are more stringent than those included in 220 C.M.R. § 109.09, these standards shall apply. See 220 C.M.R. § 109.05(2).

1.6 The Utility is responsible for insuring compliance, for itself and its contractors, with these

standards. However, Utility work may be inspected by the Municipality to assure that proper procedures are being followed. In the event a Utility fails to comply with these standards a Utility shall, at its own expense, correct such failures.

1.7 A Utility's performance in following these standards shall be considered by the Department when a Utility seeks recovery of costs related to these standards in a rate proceeding.

2.0 Definitions

AASHTO means The American Association of State Highway and Transportation Officials.

Clay means very finely textured soil which, when moist, forms a cast which can be handled freely without crumbling/breaking; that exhibits plasticity; and when dried, breaks into very hard lumps (i.e., high dry strength) and is difficult to pulverize into a soft, flour-like powder.

Cold Patch means a bituminous concrete made with slow curing asphalts and used primarily as a temporary patching material when hot mix plants are closed.

Compaction means compressing of suitable material and gravel that has been used to backfill an excavation by means of mechanical tamping to within 95% of maximum dry density as determined by the modified Proctor test in accordance with AASHTO T180.

Controlled Density Fill ("CDF"), meeting MHD Specification M4.08.0 Type 2E (flowable, excavatable), also called flowable fill means a mixture of portland cement, fly ash, sand and water. High air (25% plus) may be used instead of fly ash with an adjustment in sand content. CDF is hand-tool excavatable.

Department means the Department of Telecommunications and Energy.

Emergency Repair Work means street opening work which must be commenced immediately to correct a hazardous condition whose continuation would unreasonably risk injury, loss of life or property damage.

Gravel means coarse to very coarse-grained soil ranging from approximately 0.1 inch to 3.0 inches. Gravel exhibits no plasticity.

Infrared Process means a recycling procedure whereby an infrared heater plasticizes the surface of an asphalt pavement, preparatory to the introduction of additional compatible paving materials uniformly re-worked and compacted to achieve a density and profile consistent and thoroughly integrated with the adjacent pavement.

MHD means the Massachusetts Highway Department.

Mass. Highway Standards means the "Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highways and Bridges, 1988 edition."

Municipality means any Massachusetts city or town having subordinate and local powers of legislation.

Newly Paved Road means a road whose re-paving is less than five years old.

Organic Soil means soil high in organic content, usually dark (brown or black) in color. When considerable fibrous material is the principal constituent, it is generally classified as "peat." Plant remains or a woody structure may be recognized and the soil usually has a distinct odor. Organic soil may exhibit little (or a trace of) plasticity.

Permanent Patch means a final repair of street opening work to be performed in accordance with these standards and intended to permanently return the opened portion of the roadway to as good a condition as it was prior to the performance of the street opening work.

Permit means a permit granted by a Municipality to a Utility for permission to do street opening work in a public way.
Plasticity means that property of soil that allows it to be deformed or molded without crumbling (e.g., like dough or soft rubber). This property reflects the capacity of soil to absorb moisture.
Poorly Graded Soil means soil that contains a large percentage of its constituent particles within a relatively narrow range; also referred to as “uniform” soil.
Sand means coarse grained soil in which the individual grains can be visually detected. When moist it forms a cast which will crumble when lightly touched; when dry, it will not form a cast and will fall apart when confining pressure is released. Sand exhibits no plasticity.
Silt means finely-textured soil. When moist, it forms a cast which can be freely handled; when wet, it readily puddles; when dry, it may be cloddy and readily pulverizes into powder with a soft flour-like feel (i.e., low dry strength). Silt exhibits little or no plasticity.
Street Opening Work means any cutting, excavating, compacting, construction, repair or other disturbance in or under a public way together with restoration of the public way in accordance with these standards, municipal ordinances and any other applicable law following such disturbance.

Temporary Patch means the application of either cold patch or Type I bituminous concrete compacted to achieve a density equal to that of the surrounding pavement.
Utility means any corporation, city, town or other governmental subdivision, partnership or other organization or any individual engaged within the Commonwealth in any business which is, or the persons engaged in which are, in any respect made subject to the supervision or regulation by the Department of Telecommunications and Energy. For the purposes of these Standards, a Utility shall also mean any person or entity engaged by or on behalf of a Utility to perform Street Opening Work.
Well Graded Soil means soil having its constituent particles within a wide range, also referred to as “non-uniform” soil.

3.0 Permit Requirements

Each Municipality may incorporate in its permit procedures the portions of these standards that shall apply to Utility excavations within its jurisdiction. A permit may be issued with the stipulation that it may be modified or revoked with just cause at any time at the discretion of the Municipality without rendering the Municipality liable in any way. It is recognized that each Municipality shall have the authority to inspect work in progress and the Utility shall correct any deficiencies identified during said inspections. The following are the requirements that a Municipality may require of a Utility when granting Permits.
3.1 The work shall be performed in accordance with plans on file with the Municipality.
3.2 The Utility shall notify the Municipality two (2) days prior to the start of work. No work shall be authorized or proceed (except Emergency Repair Work) without said notification.
3.3 The Utility shall notify Dig Safe, in accordance with G.L. c. 82 § 40, at least 72 hours prior to the start of work for the purpose of identifying the location of underground utilities.
3.4 The Utility shall be responsible to contact the Municipality regarding the field location of

any underground traffic control devices on this project.
3.5 A copy of the Permit must be on the job site at all times for inspection (except for emergency repair work). Failure to have the permit available could result in suspension of the rights granted by the Permit.
3.6 Work, day, and time constraints shall be conditions of the Permit.
3.7 If it becomes necessary to open the roadway surface in a larger area than specified in the Permit, the Utility shall apply for an additional Permit to cover the project.
3.8 The Utility shall notify the Municipality within 14 days after completion of the physical work.

4.0 Work Standards

4.1 All work shall be in compliance with the Mass. Highway Standards as it pertains to utility street excavations and repairs unless modified by these standards.
4.2 The Utility shall be responsible for any settlement that may occur as a result of the work done in accordance with the Permit.
4.3 The Utility shall be responsible for the ponding of water that may develop within the roadway which was caused by this work.
4.4 In the event a street opening failure presents a nuisance or a public safety problem, the Utility shall respond to all trench restoration requests by the Municipality within 48 hours. Non-response within the specified time will result in the required restoration work being done by the Municipality, with all expenses to be paid by the Utility. The Utility shall reimburse the Municipality for the invoiced amount within thirty (30) days.
4.5 Failure to respond to trench restoration requests may result in denial of future Permit requests.

5.0 Safety

5.1 Provisions shall be made for the safety and protection of pedestrian traffic during the construction period.
5.2 The Utility shall be responsible to furnish and erect all required signs and traffic safety devices.
5.3 Cones and non-reflecting warning devices shall not be left in operating position on the highway when the daytime operations have ceased. If it becomes necessary for the Municipality to remove any construction warning devices or the appurtenances from the project due to negligence by the Utility, all cost for this work will be charged to the Utility.
5.4 Flashing arrow boards will be used as directed when operations occupy the roadway and shall be available for use at all times.
5.5 All signs and devices shall conform to the 1988 edition, Revision 3, or subsequent current edition, of the Manual on Uniform Traffic Control Devices (MUTCD).
5.6 Efforts shall be made to maintain normal traffic flow, but interruptions or obstructions to traffic shall be defined by conditions of the Permit.
5.7 When, in the opinion of the Municipality, the work constitutes a hazard to traffic in any area the Utility may be required to suspend operations during certain hours and to remove any equipment from the roadway.
5.8 When a snow or ice condition exists during the progress of this work, the Utility shall keep the area affected by the work safe for travel. The Municipality may restrict work during snow, sleet, or ice storms and subsequent snow removal operations.

5.9 The highway surface shall be kept clean of debris at all times and shall be thoroughly cleaned at the completion of the work.
5.10 At the completion of the work done in accordance with the Permit, all disturbed areas shall be restored to a condition equal in kind to that which existed prior to the work.
5.11 Blasting, if necessary, shall be done in accordance with state law and local ordinance.
5.12 The Utility shall supply copies of all log data and analyses collected from groundwater monitoring wells as required by state law and local ordinance.
5.13 Massachusetts Highway Department Standards for Line Clearance will conform to the National Electric Safety Code Standard Clearance for Highway Crossings.

6.0 Protection of Adjoining Facilities

6.1 If directed by the Municipality, photographs shall be taken prior to the start of work to insure restoration of designated areas to their former conditions within the limits of the work areas. Copies of the photographs shall be delivered to a place designated by the Municipality.
6.2 Care must be taken to not interfere with underground structures that exist in the area.
6.3 Care shall be exercised not to disturb any existing traffic duct systems. Any such system, if disturbed, shall be restored immediately to its original condition.
6.4 The Utility shall be responsible to replace all pavement markings in kind which have been disturbed as a result of work done in accordance with the permit. These pavement markings shall be restored within ten (10) days after this work is performed or as deemed necessary by the Municipality.
6.5 Existing guardrail that may be removed or damaged shall be reset or replaced to Mass. Highway Standards.
6.6 The Utility will be responsible for any damage caused by its operation to curbing, structures, roadway, etc.
6.7 No trees shall be cut or removed under this Permit.
6.8 Hand digging shall be required around roots of trees.
6.9 Tree Removal
6.9.1 The Utility shall obtain written permission from the tree warden of the Municipality if it becomes necessary to remove any tree. Replacement trees must be obtained from an established nursery in accordance with "USA Standard for Nursery Stock". The trees will be replaced in size and specie as directed by said tree warden.
6.9.2 The tree stump shall be removed a minimum of six inches below the surrounding surface
and all debris shall be disposed of outside the right-of-way line.
6.9.3 The tree shall be removed under the supervision of a qualified tree surgeon.
6.10 Every effort shall be made to protect bound markers. However, if it becomes necessary to remove and reset any bound marker, the Utility shall hire a registered professional land surveyor to perform this work. It shall be the responsibility of this land surveyor to submit to the Municipality a statement in writing and a plan containing his stamp and signature showing that said work has been performed.
6.13 These standards do not cover the installation of any utility poles.

7.0 Excavations

7.1 The surface of a roadway to be excavated for utility work shall be cut in reasonably straight and parallel lines using a jack hammer, saw or other accepted method to insure

the least amount of damage to the roadway surface. The pavement, including reinforcing steel on concrete roadways, shall be cut the full depth of surfacing. The excavation shall only be between these lines. The cutting operation shall not be done with a backhoe, gradall or any type of ripping equipment.
7.2 Steel plates used by a Utility to protect an excavation shall be of sufficient thickness to resist bending, vibration, etc., under traffic loads and shall be anchored securely to prevent movement. If these conditions are not met, the Utility will be required to backfill and pave the excavations daily. No open trench shall be left unattended overnight.
7.3 Steel sheeting, shoring or bracing shall be driven or placed for all depths over five (5) feet. At the discretion of the Municipality, said sheeting shall be left in place and cut off two (2) feet below the surface.
7.4 When a Utility installs a service lateral to a customer an opening may be made over the common supply line to make the proper connection, but the service should be bored or driven the remainder of the way wherever possible.
7.5 Water jetting of the trench area is prohibited.

8.0 Backfill And Compaction

In restoring municipal streets, lanes and highways, Utilities may utilize approved backfill material compacted to achieve soil density values of 95% modified Proctor density (as described in AASHTO T180), which may include, as the conditions warrant, the use of Controlled Density Fill ("CDF")
8.1 If CDF is the selected option of the Utility, when backfilling excavations made for the installation or maintenance of a natural gas line, the Utility may backfill with sand and compact to a level six inches over the gas line before adding CDF to the trench.
8.2 If CDF is the selected option of the Utility, excluding the exception granted in 8.1, CDF shall flow under and around the pipe, conduit, or bedding material providing uniform support without leaving voids. CDF shall be discharged from the mixer by a reasonable means into the trench area to be filled. Filling operations shall proceed simultaneously on both sides of the pipe or conduit so that the two fills are kept at approximately the same elevation at all times. An external load shall be applied to the pipe or conduit, sufficient to hold it in place before filling.
8.3 The trench in all cases shall be filled to the bottom of the existing pavement to provide room for the pavement restoration.
8.4 CDF shall be utilized for those excavations where compaction cannot be readily accomplished with normal compaction methods (i.e. vacuum holes, utility clusters).
8.5 The following subsections provide general guidelines and criteria to determine whether a soil is suitable as backfill for Utility excavations in roadways. They prescribe proper procedures for backfilling and compaction to achieve soil density values of 95% modified Proctor density. The ultimate objective is to obtain a finished road surface repair which will undergo settlements only within acceptable performance limits as defined within these standards for the functional life of the existing road. The guidelines are based on good engineering practice and testing of both materials and equipment.
8.6 Compliance with these standards will insure satisfactory compaction. These standards are to be used in the field when there is an absence of sieve analysis of materials, Proctor values of the soils and the corresponding inability to utilize a nuclear density gauge or sand cone field density test. The Utility shall not be required to use other accepted testing methods. However, the Municipality reserves the right, at its own expense, to utilize

other accepted testing methods to verify compaction. In the event of test failure the Utility shall be responsible for re-compacting the excavation to meet the required standards.

8.7 Suitability Of Backfill Material

8.7.1 This section addresses suitability of materials to obtain an adequate level of compaction.

8.7.2 Suitable backfill material is free of stones larger than half the size of the compacted lift as provided for in Mass. Highway Standards, construction debris, trash, frozen soil and other foreign material. It consists of the following:

a. Well graded gravel and sand;
b. Poorly graded gravel and sand;
c. Gravel-sand mixtures with a small amount of silt;
d. Gravel-sand mixtures with a small amount of silt and trace amounts of clay.

8.7.3 Unsuitable backfill materials consist of the following:

a. Inorganic silts and clays;
b. Organic silts;
c. Organic soils including peat, humus, topsoil, swamp soils, mulch, and soils containing leaves, grass, branches, and other fibrous vegetable matter.

8.8 Evaluation Of Excavated Soil

8.8.1 The soil excavated from a trench shall be evaluated by trained personnel to determine whether or not it is suitable as a backfill in accordance with Subsection 8.7.

8.8.2 An excavated soil that has been evaluated as suitable for backfill shall be reused provided its moisture content has been determined to be “suitable” in accordance with Subsection **8.9.**

8.8.3 An excavated soil that has been evaluated as unsuitable for backfill shall be removed from the site and disposed of properly.

8.8.4 New material, which meets the requirements of Subsection 8.7, shall be brought in to replace excavated soil found to be unsuitable.

8.9 Proper Moisture Content for Backfill Material

Proper moisture content (i.e., ratio of moisture to mineral solid by weight in a soil) in a backfill is essential for effective compaction. Soils with too much moisture (wet) or too little moisture (dry) would not yield an adequate level of compaction. All material used as backfill shall be examined by testing a sample prior to backfilling. This requirement applies to excavated soil to be reused as backfill and to new replacement material.

8.10 Field Determination of Moisture Content

8.10.1 Trained personnel will conduct the following field test of moisture content, also referred to as a “soil ball” test.

8.10.2 The personnel conducting the soil ball test must do the following:

a. first take a handful of the particular soil from beneath the surface of a stockpile (i.e., excavated from a trench or obtained from a borrow area) and then;
b. squeeze the sample firmly making a closed fist;
c. open the hand and observe the condition of the soil ball;
d. if the soil ball is loose and crumbly, the soil is too dry for compaction;
e. if the soil ball drips water, the soil is too wet for compaction;
f. if the soil ball holds together firmly or breaks into large chunks, the soil has suitable moisture content for compaction.

8.11 Corrective Treatment When Moisture Content is Not Suitable:

a. if the soil is too dry, small amounts of water may be added by sprinkling;
b. if the soil is too wet, the soil may be dried out by spreading it out and exposing it to the atmosphere;
c. after the remedial treatment, the soil shall be tested again (Subsection 8.10.2);
d. if the corrective treatment is not effective, the soil shall be removed from the site and disposed of properly.

8.12 Backfill And Compaction Of Excavations

8.12.1 Backfill and compaction shall be performed in accordance with Subsections 8.12.2 through 8.12.6, or Subsections 8.12.7 and 8.12.8. All utility lines shall be properly bedded with materials and in depths as specified by the appropriate utility prior to backfilling to obtain compaction values of 95% modified Proctor density.

TABLE A

Tool	Thickness of Lifts
Pneumatic Air Tamper	6”
Percussive Wacker Rammer	6” – 12”
Vibratory Compactor (7000lb)	6” – 12”
Pavement Breaker Tamping Foot	6”

8.12.2 Compaction equipment which may be used is specified in Table A. Compactors shall be operated in approximately the vertical position.

8.12.3 Care should be exercised when compacting near a buried facility to avoid damage to the facility.

8.12.4 The bottom of the excavation shall be level, free of stones and compacted in accordance with Subsection 8.12.5 prior to commencement of backfilling.

8.12.5 Compaction shall be performed by making a minimum of four (4) passes per lift with the compactor. The passes shall start around the perimeter of the excavation and move toward the center in an inward spiral.

8.12.6 Backfill material shall be placed in lifts with the loose thickness (i.e., prior to compaction) as specified in Table A.

8.12.7 The effectiveness of any compaction method used other than that specified in this Section, including Table A, shall be determined by testing to establish the precompacted or loose thickness of lifts, the number of passes with the compactor required to obtain the desired results, the type of compacting tool used and the soil type.

8.12.8 All maintenance work shall be compacted in 6” lifts. Construction work shall, based on the specific compaction equipment used, utilize Table A to determine appropriate lifts. Construction work shall be defined as the installation of new or replacement facilities.

8.12.9 Well graded gravel that may exist immediately under the paved surface shall be replaced in like-compacted depth.
8.12.10 All leak detection holes (i.e., bar holes) shall be filled in lifts with an appropriate mineral filler and compacted to the bottom of the pavement.
8.13 Compaction Verification
8.13.1 Compaction verification shall be performed in accordance with the following to assure that 95% modified Proctor density has been achieved:
a. The compaction of each lift shall be verified using a Dynamic Cone Penetrometer (DCP), or equivalent as approved by the Municipality. For standard maintenance excavations, each lift shall be verified at one location. For longer excavations (e.g., trenches), a DCP test shall be made approximately every 25 feet for each lift.
b. A DCP test shall be considered acceptable if, after 15 drops, the pass/fail reference line on the DCP is above the soil surface.
c. An unacceptable DCP test shall require that corrective measures be taken until an acceptable DCP test is achieved. This may include making additional passes with the compactor or, in some cases, removing the backfill material and starting over.
8.14 Training
Field personnel performing backfill and compaction operations shall be trained in the implementation of this procedure. Personnel shall receive retraining every two years. The Utility shall certify with the submission of a Permit application that all personnel are properly trained.

9.0 Pavement Restoration

9.1 The Utility shall be responsible to replace all pavement disturbed by work under the Permit with homogeneous and in-kind pavement, unless otherwise stipulated, to the original strength and condition.
9.2 Single gradation (Type I, surface course) bituminous concrete patches may be used when the existing pavement depth is less than three inches, provided that the new patch is installed to a depth 1 inch greater than the surrounding pavement.
9.3 Single gradation (Type I, binder course) bituminous concrete may be used where post grind and inlay method is a condition of the Permit. Minimum allowable depth of pavement shall be four inches when utilizing the grind and inlay method. When the grind and inlay method is performed, the surface of the pavement shall be uniformly ground and removed to a minimum depth of 1.5 inches for subsequent pavement replacement The grinding procedure shall provide a cutback into existing undisturbed pavement and shall encompass all disturbed pavement areas of the excavation. Grinding shall be done in reasonably straight lines.
9.4 All non-emergency pavement excavations shall be repaired with same day permanent patches unless specifically exempted in the permit.
9.5 Same day patches installed in conformance with these standards will not require reexcavation
and may utilize the infrared method or the grind and inlay method to correct subsequent settlements. However, the restoration of single patches up to five feet by seven feet in area shall be by the infrared method, unless another method is agreed to by the Municipality.

9.6 Immediately following the procedures outlined in the section for Backfill and Compaction,
the adjacent pavement shall be cut back, full depth, to encompass all disturbed pavement areas and underlying cavities associated with the excavation. All cutbacks shall be done in reasonably straight and parallel lines.
9.7 All existing pavement surfaces shall be swept clean of dirt, dust, and debris prior to patching. The existing vertical pavement surfaces shall be tack coated with an appropriate asphalt tacking material prior to patching and subsequent to cleaning.
9.8 Pavement repair depths shall equal or exceed adjoining pavement depths. When existing pavement depths are greater than 2 inches, pavement repairs shall be made utilizing Type I, binder course in the underlying patch courses. The wearing surface shall be a minimum 1.5 inches of Type I, surface course. Pavement courses shall not exceed two inches. All pavement courses shall be thoroughly compacted prior to placement of subsequent courses.
9.9 When the pavement remaining between an excavation and the edge of the roadway is less than two feet, the remaining area shall be removed and replaced in conjunction with the permanent pavement repair.
9.10 All leak detection holes (i.e. bar holes) shall be filled to refusal with an appropriate asphalt filler to a depth equal to the surrounding pavement depth.
9.11 Temporary pavement repairs shall be permitted under the following conditions:
a. Emergency Repair Work completed outside normal Monday through Friday working hours.
b. Work performed between December 1 and March 30 when bituminous concrete is not available on a daily basis.
c. Excavations which shall be reopened within five (5) working days.
9.12 The Utility shall make every effort to limit excavations conducted under the aforementioned conditions.
9.13 All excavation, back fill, and compaction work associated with temporary patches shall be performed in accordance with these standards.
9.14 Temporary patches shall be made with high-performance cold patch or Type I, bituminous concrete to a minimum depth of 4 inches. Temporary patches made between December 1 and March 30 shall be removed and replaced with a permanent patch as outlined above within five (5) working days. Temporary patches made between April 1 and November 30 shall be removed and replaced with a permanent patch as outlined above within two (2) working days.
9.15 The Utility shall be responsible to maintain temporary patches in a safe condition for all types of travel until a permanent pavement repair has been made.
9.16 The Municipality shall have jurisdiction to determine the pavement repair method to be utilized on all pavements which have been installed for less than five years.
9.17 Completed pavement repairs shall not deviate more than 0.25 inches from the existing street surface.
9.18 No less than thirty (30) days and no more than sixty (60) days from the completion of the
permanent pavement repair, the Utility shall inspect the excavation for settlements, cracking and other pavement defects. Any such excavation which has required repair shall then be reinspected no less than thirty (30) days and no more than sixty (60) days from the completion of the subsequent repair. The Utility shall further inspect all

excavations after a one-year time period. Pavements that deviate more than 0.25 inches from the existing street surface shall be repaired by the infrared or grind and inlay methods. Surface or joint cracking 0.25 inches wide or greater shall be repaired utilizing a modified asphalt pavement sealant.
9.19 The Utility shall prepare, document and maintain records of these inspections and make them available to the Municipality and the Department upon request.
9.20 All excavations made within concrete roadways shall be repaired with concrete in depths equal to the existing concrete .
9.21 Concrete used for repairs shall conform to the requirements of Mass. Highway Standards for concrete roadway construction.

10.0 Sidewalks and Driveways

10.1 All work shall be performed in accordance with 521 CMR Rules and Regulations of the Architectural Access Board (AAB) and Americans with Disabilities Act (ADA).
10.2 A sidewalk area that is disturbed shall be restored, full width, in kind a minimum of one foot beyond the disturbed area for bituminous concrete and to the next joint line for concrete.
10.3 After the subgrade has been prepared, a foundation of gravel shall be placed upon it. After thorough mechanical compaction, the foundation shall be at least 8 inches thick and parallel to the proposed surface of the walk.
10.4 If applicable, the bituminous concrete sidewalk surface shall be laid in 2 courses to a depth after rolling of 3 inches. The bottom course shall be 1½ inches thick and its surface after rolling shall be 1½ inches below the parallel to the proposed grade of the finished surface. The top course shall be 1½ inches thick after rolling.
10.5 If applicable, the concrete sidewalk shall be placed in alternate slabs 30 feet in length. The slabs shall be separated by transverse preformed expansion joint filler ½ inch thick (shall conform to AASHTO- M153). Preformed expansion joint filler shall also be placed adjacent to or around existing structures.
10.6 On the foundation as specified above, the concrete (Air-Entrained 4000 psi, 3/4" 610) shall be placed in such quantity that after being thoroughly consolidated in place it shall be 4 inches in depth. At driveways, the sidewalk shall be 6 inches in depth.
10.7 Driveways shall be surfaced with Bituminous Concrete, Type I and shall be laid in two courses to a depth of three inches, after rolling, with a foundation of at least six inches of compacted gravel. The finished surface shall butt into and not overlap the existing highway grade at the road edge.
10.8 Driveways shall be so graded that no water shall enter the layout, pond or collect thereon, including the roadway.

11.0 Compliance with these Standards

11.1 Utilities shall file with the Department, by May 1 of each year, written statements or policies designed to insure that managers, supervisors and other distribution personnel are aware of, and held accountable to, these Standards.
11.2 Utilities shall track the success and failures of their programs to include the restorations and the inspections of such restorations. Utilities shall specify the number of failed restorations compared to the total number of restorations made during the preceding calendar year, the number of failures reported by a party other than a utility inspector and the age of the failed restoration.

11.3 Utilities shall record the number of failed restorations encountered during the inspections
required in Section 9.19. They shall also document the cause of the failure and their policy changes to prevent the recurrence of a similar failure.
11.4 Utilities shall record the number of failed restorations and cost incurred when Municipalities perform the corrective action in accordance with Section 4.4.