

**DATE:** June 29, 2016

**SUBJECT:** Subsurface Utility Occupancy Testing and Inspection Requirements

**TO:** District Executives

**FROM:** R. Scott Christie, P.E., *Scott Christie /s/*  
Deputy Secretary for Highway Administration

This Strike-off Letter (SOL) is time and cost increasing and updates and clarifies compaction testing and inspection for permitted utility trench openings in PennDOT's highway right of way.

The Department has been approached by utility owners and the Pennsylvania Utility Contractors Association, now d/b/a NUCA Pennsylvania, in regard to the October 2014 Publication 408, Section 601 update which requires utility facility, pipe and other conduit trench backfill work under the roadway, sidewalk and shoulder be conducted only in the presence of an authorized inspector who will document and provide compaction results to PennDOT. Historically and typically, the majority of subsurface utility permits were not inspected during backfill operations. The utility owners and NUCA Pennsylvania both have indicated that there are additional costs and delays due to the specification change.

Publications 170 and 282 are hereby revised to provide additional guidance and to clarify testing and inspection requirements with respect to utility trench backfill and compaction operation under highway occupancy permits. This policy does not apply to utility permits issued related to PennDOT Construction Projects (i.e Utility Relocation Permits). Publication 408 will continue to define the testing and inspection requirements for those permits.

The attached policy is effective immediately. Publications 170 and 282 have been revised to include the updates. Additionally, Form M-945 SI has been developed to assist in documenting the subsequent inspections that are to be completed yearly. The following sheets are to be used to update the existing Publications. Please place in the Publications:

- Pub. 170, HOP Manual, pg. 56, 147-147B, 169, 169A, 170, 170A, 180A
- Pub. 282, HOP Guidelines, pg. 47, 105-105B, 120, 120A, 121, 121A, 130A

Should you have any questions, please contact Michael Dzurko, Manager, Highway Occupancy Permit Unit, at 717.783.6080.

Attachments

4940/MJD/hmq

cc: Renee Sigel, Division Administrator, FHWA  
Timothy Scanlon, P.E., Traffic Engineer, Pennsylvania Turnpike Commission  
Ryan Bream, Chairman, Utility Highway Liaison Committee  
Assistant District Executives – Construction  
Assistant District Executives – Design  
Assistant District Executives – Maintenance  
Louis Belmonte, Assistant District Executive – Services, District 6-0  
Maintenance Services Executives  
District HOP Managers  
District Utility Relocation Administrators  
Roger Cohen, Director, Policy Office  
William Cressler, Chief Counsel, Office of Chief Counsel  
Eric Jackson, Assistant Chief Counsel, Office of Chief Counsel  
Brian Thompson, P.E., Director, BOPD  
Richard Roman, P.E., Director, BOMO  
BOMO Division Chiefs

## Additional Fees

Additional fees may be charged by PennDOT consistent with Sections 411 and 420 of the State Highway Law and Regulations 441.4(d) and 459.4(d) as explained below:

1. Additional Application Fees. -- Additional application fees may be charged when PENNDOT determines that the cost of reviewing the application will exceed the application and inspection fees by a "substantial" amount. When it is anticipated that such additional application review costs will be incurred, process Form M-945 H (in the case of a utility facility) or Form M-950 H (in the case of a driveway). After Form M-945 H or M-950 H is signed by the Applicant and received by the District Permit Manager, formal review of the application may begin. Additional application fees may be assessed only for costs incurred after the Effective Date of Form M-945 H or M-950 H. The following guidelines may be used to determine if there may be additional "substantial" costs:
  - a. Work involving more than 500 linear feet of pavement or shoulder, or both.
  - b. Work involving more than 1,000 total feet of surface openings within State highway right-of-way.
  - c. An "accident damaged" or "cluster area" aboveground facility.
  - d. An access application which warrants a Traffic Impact Study or Drainage Impact Report.
  - e. Work involving construction of acceleration, deceleration or left turn lanes.
  - f. An application returned more than once for incompleteness or correction, if resubmitted.
  - g. Work involving an unusual situation which requires the need for extreme care.
  - h. Other circumstances for which PennDOT may reasonably require reimbursement.
2. Additional Utility Inspection Fees. -- Under Regulation 459.4(d)(2), additional inspection fees may be charged when PennDOT determines that the permitted work is of sufficient magnitude or importance to warrant assignment of one or more inspectors on a more than spot inspection basis. Examples of such work include:
  - a. Work involving a subsurface facility in limited access highway right-of-way.
  - b. Work involving trench openings exceeding 500 feet (whether or not contiguous) in the pavement or shoulder on a non-limited access highway. See Chapter 7 of this Manual for more information.
  - c. Work involving an unusual situation which requires the need for extreme care.
  - d. Work authorized under Regulation 459.12 (relating to modification of conditions).
  - e. Work involving substantial excavation of the highway, e.g. a project of considerable size, importance or restoration cost.

Note: If additional inspection fees are contemplated as part of an access or utility permit, then the Applicant must obtain an EPS Business Partner ID for electronic invoicing through EPS prior to permit issuance.

3. Additional Access Inspection Fees. -- Under Regulation 441.4(d), additional inspection fees may be charged when PennDOT determines that the permitted work is of sufficient magnitude or importance to warrant assignment of one or more

## CHAPTER 7 -- INSPECTION OF WORK

### 7.1 -- ASSIGNMENT OF ON-SITE PERMIT INSPECTORS

Inspection of Permit work is necessary to verify that the Permittee complies with applicable laws, regulations and HOP conditions, for the security, maintenance and protection of the motoring public and Pennsylvania's highway and bridge infrastructure.

Inspectors, as defined in 441.1 and 459.1, are representatives authorized by PennDOT to be in immediate charge of inspecting all or part of the performance of the permitted work and materials furnished.

There are two types of inspectors:

1. PennDOT employee inspection staff, and
2. PennDOT contracted consultant inspection staff

Inspectors represent PennDOT's interest and report to the District Permit Manager and staff for inspection operations.

Each District authorizes Inspectors to conduct inspection and quality assurance operations. Inspectors are competent, skilled technical experts with State highway and local road and bridge inspection and/or construction project management experience and a thorough working knowledge of the Regulations, this manual, Publication 408, the appropriate Design Manuals, and other related PennDOT publications, standards and requirements.

Each District maintains a list of inspectors and inspection enterprises. Inspectors demonstrate competence to the District's satisfaction by performance verification, or NICET certification (Highway Construction Level 1 or higher); ACI Concrete Field Testing Certification; NECEPT Bituminous Pavement Field Technician certification or equivalent work experience or other qualifications acceptable to the District, based on the type and amount of permitted work.

The District Executive is responsible to oversee the Permit inspection program for the District, and shall appoint the Assistant District Executive for Construction (ADE-C) to establish and implement the District's program and to select, approve and qualify inspectors and inspection enterprises.

Districts must plan ahead to meet anticipated inspection staffing requirements for permitted work.

Districts will make every attempt to limit the amount of reimbursable inspection costs and perform inspection in-house where practical. Utilization of on-demand consultant inspection contracts should be considered. Advance planning for seasonal inspectors, borrowing or hiring construction inspectors and consultant inspectors, and coordinating with municipalities, utilities, applicants, and Permittees will minimize inspection staff shortages which may delay Permit work.

On-site inspectors may be assigned by the District Permit Manager or delegate to perform:

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PennDOT Web Site: [www.penndot.gov](http://www.penndot.gov) > Doing Business > Permits > Highway Occupancy Permits (HOP)

PennDOT WAN: Statewide Drive > Permits Shared > HOP

1. Non-reimbursable spot inspections, or
2. Reimbursable continuous (full-time) inspections

### Spot Inspection

Non-reimbursable on-site inspection is conducted on a spot-inspection basis by District staff and consultant inspectors. When continuous inspection is not required, spot inspection must be performed to monitor compliance with the permit.

In addition to permit close-outs, specific instances where spot inspection should be performed are:

1. Prior to installing drainage facilities, curb, sidewalk or curb ramps.
2. Prior to final pavement or shoulder restoration.
3. Prior to paving an access driveway, to verify compliance with the Permit plans.
4. To verify proper traffic control is in place prior to and during permitted work.
5. After restoration of emergency work to verify highway is properly restored.

See Permit Condition Codes #306, #308 and #309.

### Continuous Inspection

Reimbursable on-site inspection is conducted on a continuous basis if the District determines the work is of sufficient magnitude or importance to warrant assignment of one or more inspectors. The inspector authorized by the District is present full-time during operations within the PennDOT right-of-way. The permit will so indicate and the Permittee will be charged for additional salary, overhead and expenses incurred.

The District Permit Manager may use the following criteria for assigning continuous (full-time) inspectors for permitted work involving:

1. A subsurface facility in limited access highway right-of-way.
2. Trench openings greater than 500 linear feet (LF) for subsurface utility facilities, sewers, and storm drains in the pavement, sidewalk or shoulder (Openings in the pavement, sidewalk or paved shoulder less than or equal to 500 LF are the responsibility of the permittee to ensure that Form CS-6 (Pipe Installation Inspection Form) and the appropriate Forms TR-478 and/or TR-4276 are completed and submitted to PennDOT within two weeks of the completion of the work represented on the form. PennDOT will not close-out the permit prior to receiving the completed forms.)
3. Highway improvements such as the construction of auxiliary lanes or additional thru-lanes.
4. A situation which requires extreme care, as determined by PennDOT (e.g., work adjacent to the shoulder, work in a slope "fill" area which provides lateral support to the highway, work in an established "Clear Zone", work involving unique Work Zone Traffic Control, work requiring mud or dust control, and similar situations).
5. Work involving substantial excavation of the highway, e.g., a project of considerable size, importance or restoration cost.

See Permit Condition Code #318.

The frequency of inspection is based on the type, size, and location of an operation within State highway right-of-way.

If there will be reimbursable plant material inspections or other off-site inspections of fabricated products, the Permit should indicate this as a Condition Code (for example, see Permit Condition Code #319). Arrangements for such inspections should be made with the District Construction Unit prior to issuance of the Permit.

If continuous inspection will be provided on an HOP project, then the permittee must identify a duly authorized representative who will initial the Permit Inspection Costs Form (M-371 A) every workday. These daily initials are essential in settling future billing disputes without having to retrieve the inspector's FIDs/PSAs for that time period to verify charges are valid. If this representative is not identified during the project pre-construction meeting, documentation identifying the representative should be furnished to PennDOT prior to start of work.

The primary responsibilities of the on-site inspector on a reimbursable or non-reimbursable permit project shall be to verify that the Permittee complies with the following:

1. Highway Occupancy Permit (M-945 P), plans, and attachments.
2. Department Driveway/Utility Regulations.
3. Temporary Traffic Control Guidelines (Chapter 213) and Traffic Control Plan.
4. Highway Material Manuals (Publications 34, 35, 41, 42).
5. Publication 408 Specifications.
6. Roadway Construction Standards (Publication 72M).

Note: Section 3326 of The PA Vehicle Code contains laws governing movement of traffic through work areas.

Under Regulations 441.6(1)(i), 459.7(1)(i), and 459.7(4)(v), the permittee is primarily responsible for complying with all Permit conditions.

459.7, relating to trenching, backfill and restoration, requires the Permittee to identify to PennDOT both its contractor and its inspector-in-charge assigned to monitor backfill and restoration if work is being performed by a contractor within the improved area.

The Permittee's inspector-in-charge, as well as the Permittee, are responsible for ensuring work is performed in compliance with the permit, this chapter and Publication 408 and Design Manual, Parts 2 and 5. All required documentation must be delivered to the District contact as directed.

### Section 459.8(g)(3) -- Backfill Compaction Plan

Subparagraph (ii) allows for backfill material to be placed in layers thicker than eight inches prior to compaction provided the opening is outside the pavement and shoulders and provided the Applicant/Permittee has submitted a compaction plan for approval at least 15 days prior to the start of work. Upon receipt of a compaction plan, it will be reviewed for compliance with information required under this subparagraph. If approved, it will be documented on the Permit or a Supplement. Security may be required consistent with Section 459.5(b). Work done under an approved compaction plan may be inspected periodically to verify the work is being performed consistent with the approved plan.

While “flowable fill” was not an approved backfill material when Regulation 459 was amended in 1989, “flowable fill” is now acceptable backfill material which can preclude subsidence and minimize lane closure durations (see Publication 408, Section 220). A compaction plan is not required for “flowable fill” to be authorized.

### Section 459.8(g)(4) -- Backfill Testing

PennDOT may require the Permittee to have both proposed backfill material and compacted backfill material tested for conformance to the applicable gradation and compaction requirements of Publication 408.

Material slips may be inspected to verify material to be used within the right-of-way is acquired from an approved source.

Compaction testing shall be performed by nuclear gauge, by non-movement, or by another PennDOT approved method. Testing is required on all non-emergency permitted openings in pavement, paved shoulder or sidewalk. A minimum of one test per lift per day is required. If exceeding 500 LF per day, a minimum of one test per lift every 500 LF is required. Additional testing may be warranted on longitudinal or transverse openings which exceed 500 total feet in length, or which exceed four feet in depth and at other times when the inspector believes the compaction method is not resulting in a compaction percentage consistent with Section 601.3(f) of Publication 408.

For openings greater than 500 total feet in pavement, shoulder or sidewalk, the appropriate testing method is to be based on the gradation of the aggregate as specified in Publication 408 Section 206.3(b)1.

For openings **less than or equal to 500 total feet in pavement, paved shoulder or sidewalk**, the Permittee may choose the compaction test method, provided the test method is performed consistent with Department Publications, and on the condition that the Permittee provide the completed CS-6 (Pipe Installation Inspection Form) and accompanying TR-478 and/or TR-4276 forms within two weeks of the completion of the work represented on the form. PennDOT will not close-out the permit prior to receiving the completed forms. PennDOT will randomly spot inspect to ensure compliance. The following Condition Code #347 will be included on the HOP:

“BACKFILL COMPACTION TESTING IS REQUIRED A MINIMUM ONE TEST PER LIFT DAILY. FOR OPENINGS LESS THAN OR EQUAL TO 500 TOTAL FEET IN PAVEMENT,

SHOULDER OR SIDEWALK, THE PERMITTEE MAY CHOOSE THE COMPACTION TEST METHOD, PROVIDED THE TEST METHOD IS PERFORMED CONSISTENT WITH DEPARTMENT PUBLICATIONS, AND ON THE CONDITION THAT THE PERMITTEE PROVIDE THE COMPLETED CS-6 (PIPE INSTALLATION INSPECTION FORM) AND ACCOMPANYING TR-478 AND/OR TR-4276 FORMS WITHIN TWO WEEKS OF THE COMPLETION OF THE WORK REPRESENTED ON THE FORM. PENNDOT WILL NOT CLOSE-OUT THE PERMIT PRIOR TO RECEIVING THE COMPLETED FORMS.”

Note: No backfill compaction testing documentation is required 1) during emergency repairs, 2) openings less than 36 square feet and/or 3) if approved flowable backfill material is utilized.

### Section 459.8(h) -- Restoration of Flexible Base Pavements

If binder course is required, it will be in addition to the wearing and base courses. If an existing wearing course is over 2" in depth, additional base or binder course will be required to fill the additional void. See Restoration Figure 7-N series (posted on PennDOT Web Site -- see footer).

### Section 459.8(i) -- Cement Concrete Pavement Restoration

Paragraph (3) specifies that on existing reinforced cement concrete pavements that are opened for more than six feet in either length or width, reinforcing steel, expansion tie bolts and load transfer devices shall be placed consistent with Roadway Construction Standard RC-26M.

Paragraph (4) specifies full lane width restoration may be required to restore the structural integrity of the damaged cement concrete pavement. The District Permit Manager may require, as a Permit condition, a full lane width restoration on cement concrete pavements less than ten years old or on other pavements which are in good condition. See Restoration Figure 7-N series (posted on PennDOT Web Site -- see footer).

### Section 459.8(k) -- Temporary Restoration

While temporary restoration methods should be avoided where feasible -- to preclude additional disruptions to traffic generally -- the District Permit Manager may require, as a Permit condition, temporary restoration of pavements or paved shoulders in the following instances:

- a. Openings expected to be restored during the dates indicated in Publication 408, Section 409.3(b) & (b)(1).
- b. An opening in the pavement which was already *backfilled* without the Department having an opportunity to have an inspector present (e.g., emergency repairs during evenings, weekends, or holidays; or where the Department was not provided required prior notice; particularly if the Utility or its contractor has a documented history of highway restoration failures).
- c. An opening in the pavement or shoulder over 100 feet in length or over six feet in depth, where "flowable fill" is not used as trench backfill material.
- d. Where unfavorable subsurface or surface conditions preclude final restoration being performed promptly.

Temporary pavement surface suitable for driving may be kept in place for up to 6 months or as specified in the permit, if it is properly maintained. See *Permit Condition Code #343*.

Spreading, finishing and compaction of the temporary pavement material shall leave the surface smooth and level with the edge of existing pavement. The distance at any point from a ten (10) foot straight edge to the surface shall not exceed one-half (1/2) inch in any direction for the duration of temporary restoration. Lumps or depressions exceeding this tolerance shall be corrected by removing defective work and replacing with new material as directed.

Approved hot-mix or warm-mix bituminous material must be used for temporary restoration when available. Cold mix material will be permitted at the discretion of PennDOT. See the following Permit Condition Code #346:

“THE PERMITTEE IS REQUIRED TO USE HOT MIX OR WARM MIX MATERIAL FOR TEMPORARY RESTORATION. COLD MIX WILL BE PERMITTED AT THE DISCRETION OF THE DEPARTMENT. PERMITTEE MUST MAINTAIN A SMOOTH PAVEMENT SURFACE SUITABLE FOR DRIVING FOR THE DURATION OF THE TEMPORARY PAVEMENT.”

See Restoration Figure 7-N series (posted on PennDOT Web Site).

Section 459.8(l) -- Paint Date

The Permittee is not required to paint a date on temporary pavement restorations.

## **7.12a – SUBSEQUENT INSPECTIONS AFTER PENNDOT’S ACKNOWLEDGMENT OF COMPLETION**

Every year each District will QA at least 50% (per County) of randomly chosen permanent pavement and/or paved shoulder restorations within one to two years from PennDOT’s acknowledgement of completion of the permitted work and will document the results.

The Permittee has absolute responsibility to make temporary and permanent restoration if there is a failure in the area of the permitted work within two years after the acknowledged completion by PennDOT and provided there is no similar failure beyond the area of the permitted work. Any failure of the highway in the area of the permitted work identified by the District to the Permittee and/or its contractor shall be restored in accordance with the permit or as further specified by the District within 30 days (immediately if considered a safety concern), subject to final inspection by the District. A failure of the highway may be considered but not be limited to the various conditions identified in Publications 33 and 336 which are classified as medium severity.

The Regulations allow for the Permittee to deliver clear and convincing evidence demonstrating that a highway failure was caused by another party. If the Permittee claims in writing that a highway failure was caused by another party, clear and convincing evidence and documentation thereof must be submitted together with the Permittee's request for waiver of responsibility. After the Permittee provides evidence that it has provided written notice to any other party claimed by the Permittee to be responsible for the highway failure, PennDOT will investigate and make a written determination. If any affected party does not agree with PennDOT's determination, an administrative hearing may be requested within 30 days of PennDOT's written determination.

A failure of the highway more than two years after the acknowledged completion by PennDOT does not relieve the Permittee of responsibility to restore the highway. While the Permittee has absolute responsibility to restore highway failures within two years after the acknowledged completion of the permitted work, PennDOT may pursue the Permittee to correct highway failures after two years where PennDOT believes the highway failure was caused by the permitted work as provided by general principles of law.

## Additional Fees

Additional fees may be charged by PennDOT consistent with Sections 411 and 420 of the State Highway Law and Regulations 441.4(d) and 459.4(d) as explained below:

1. Additional Application Fees. -- Additional application fees may be charged when PennDOT determines that the cost of reviewing the application will exceed the application and inspection fees by a "substantial" amount. When it is anticipated that such additional application review costs will be incurred, process Form M-945 H (in the case of a utility facility) or Form M-950 H (in the case of a driveway). After Form M-945 H or M-950 H is signed by the Applicant and received by the District Permit Manager, formal review of the application may begin. Additional application fees may be assessed only for costs incurred after the Effective Date of Form M-945 H or M-950 H. The following guidelines may be used to determine if there may be additional "substantial" costs:
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  - a. Work involving a subsurface facility in limited access highway right-of-way.
  - b. Work involving trench openings exceeding 500 feet (whether or not contiguous) in the pavement or shoulder on a non-limited access highway. See Chapter 7 of this Manual for more information.
  - c. Work involving an unusual situation which requires the need for extreme care.
  - d. Work authorized under Regulation 459.12 (relating to modification of conditions).
  - e. Work involving substantial excavation of the highway, e.g. a project of considerable size, importance or restoration cost.

Note: If additional inspection fees are contemplated as part of an access or utility permit, then the Applicant must obtain an EPS Business Partner ID for electronic invoicing through EPS prior to permit issuance.
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Districts will make every attempt to limit the amount of reimbursable inspection costs and perform inspection in-house where practical. Utilization of on-demand consultant inspection contracts should be considered. Advance planning for seasonal inspectors, borrowing or hiring construction inspectors and consultant inspectors, and coordinating with municipalities, utilities, applicants, and Permittees will minimize inspection staff shortages which may delay Permit work.

On-site inspectors may be assigned by the District Permit Manager or delegate to perform:

1. Non-reimbursable spot inspections, or
2. Reimbursable continuous (full-time) inspections

### Spot Inspection

Non-reimbursable on-site inspection is conducted on a spot-inspection basis by District staff and consultant inspectors. When continuous inspection is not required, spot inspection must be performed to monitor compliance with the permit.

In addition to permit close-outs, specific instances where spot inspection should be performed are:

1. Prior to installing drainage facilities, curb, sidewalk or curb ramps.
2. Prior to final pavement or shoulder restoration.
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See Permit Condition Codes #306, #308 and #309.

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The District Permit Manager may use the following criteria for assigning continuous (full-time) inspectors for permitted work involving:

1. A subsurface facility in limited access highway right-of-way.
2. Trench openings greater than 500 linear feet (LF) for subsurface utility facilities, sewers, and storm drains in the pavement, sidewalk or shoulder (Openings in the pavement, sidewalk or paved shoulder less than or equal to 500 LF are the responsibility of the permittee to ensure that Form CS-6 (Pipe Installation Inspection Form) and the appropriate Forms TR-478 and/or TR-4276 are completed and submitted to PennDOT within two weeks of the completion of the work represented on the form. PennDOT will not close-out the permit prior to receiving the completed forms.)
3. Highway improvements such as the construction of auxiliary lanes or additional thru-lanes.
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The primary responsibilities of the on-site inspector on a reimbursable or non-reimbursable permit project shall be to verify that the Permittee complies with the following:

1. Highway Occupancy Permit (M-945 P), plans, and attachments.
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Note: Section 3326 of The PA Vehicle Code contains laws governing movement of traffic through work areas.

Under Regulations 441.6(1)(i), 459.7(1)(i), and 459.7(4)(v), the permittee is primarily responsible for complying with all Permit conditions.

459.7, relating to trenching, backfill and restoration, requires the Permittee to identify to PennDOT both its contractor and its inspector-in-charge assigned to monitor backfill and restoration if work is being performed by a contractor within the improved area.

The Permittee's inspector-in-charge, as well as the Permittee, are responsible for ensuring work is performed in compliance with the permit, this chapter and Publication 408 and Design Manual, Parts 2 and 5. All required documentation must be delivered to the District contact as directed.

### Section 459.8(g)(3) -- Backfill Compaction Plan

Subparagraph (ii) allows for backfill material to be placed in layers thicker than eight inches prior to compaction provided the opening is outside the pavement and shoulders and provided the Applicant/Permittee has submitted a compaction plan for approval at least 15 days prior to the start of work. Upon receipt of a compaction plan, it will be reviewed for compliance with information required under this subparagraph. If approved, it will be documented on the Permit or a Supplement. Security may be required consistent with Section 459.5(b). Work done under an approved compaction plan may be inspected periodically to verify the work is being performed consistent with the approved plan.

While “flowable fill” was not an approved backfill material when Regulation 459 was amended in 1989, “flowable fill” is now acceptable backfill material which can preclude subsidence and minimize lane closure durations (see Publication 408, Section 220). A compaction plan is not required for “flowable fill” to be authorized.

### Section 459.8(g)(4) -- Backfill Testing

PennDOT may require the Permittee to have both proposed backfill material and compacted backfill material tested for conformance to the applicable gradation and compaction requirements of Publication 408.

Material slips may be inspected to verify material to be used within the right-of-way is acquired from an approved source.

Compaction testing shall be performed by nuclear gauge, by non-movement, or by another PennDOT approved method. Testing is required on all non-emergency permitted openings in pavement, paved shoulder or sidewalk. A minimum of one test per lift per day is required. If exceeding 500 LF per day, a minimum of one test per lift every 500 LF is required. Additional testing may be warranted on longitudinal or transverse openings which exceed 500 total feet in length, or which exceed four feet in depth and at other times when the inspector believes the compaction method is not resulting in a compaction percentage consistent with Section 601.3(f) of Publication 408.

For openings greater than 500 total feet in pavement, shoulder or sidewalk, the appropriate testing method is to be based on the gradation of the aggregate as specified in Publication 408 Section 206.3(b)1.

For openings **less than or equal to 500 total feet in pavement, paved shoulder or sidewalk**, the Permittee may choose the compaction test method, provided the test method is performed consistent with Department Publications, and on the condition that the Permittee provide the completed CS-6 (Pipe Installation Inspection Form) and accompanying TR-478 and/or TR-4276 forms within two weeks of the completion of the work represented on the form. PennDOT will not close-out the permit prior to receiving the completed forms. PennDOT will randomly spot inspect to ensure compliance. The following Condition Code #347 will be included on the HOP:

“BACKFILL COMPACTION TESTING IS REQUIRED A MINIMUM ONE TEST PER LIFT DAILY. FOR OPENINGS LESS THAN OR EQUAL TO 500 TOTAL FEET IN PAVEMENT,

SHOULDER OR SIDEWALK, THE PERMITTEE MAY CHOOSE THE COMPACTION TEST METHOD, PROVIDED THE TEST METHOD IS PERFORMED CONSISTENT WITH DEPARTMENT PUBLICATIONS, AND ON THE CONDITION THAT THE PERMITTEE PROVIDE THE COMPLETED CS-6 (PIPE INSTALLATION INSPECTION FORM) AND ACCOMPANYING TR-478 AND/OR TR-4276 FORMS WITHIN TWO WEEKS OF THE COMPLETION OF THE WORK REPRESENTED ON THE FORM. PENNDOT WILL NOT CLOSE-OUT THE PERMIT PRIOR TO RECEIVING THE COMPLETED FORMS.”

Note: No backfill compaction testing documentation is required 1) during emergency repairs, 2) openings less than 36 square feet and/or 3) if approved flowable backfill material is utilized.

### Section 459.8(h) -- Restoration of Flexible Base Pavements

If binder course is required, it will be in addition to the wearing and base courses. If an existing wearing course is over 2" in depth, additional base or binder course will be required to fill the additional void. See Restoration Figure 7-N series (posted on PennDOT Web Site -- see footer).

### Section 459.8(i) -- Cement Concrete Pavement Restoration

Paragraph (3) specifies that on existing reinforced cement concrete pavements that are opened for more than six feet in either length or width, reinforcing steel, expansion tie bolts and load transfer devices shall be placed consistent with Roadway Construction Standard RC-26M.

Paragraph (4) specifies full lane width restoration may be required to restore the structural integrity of the damaged cement concrete pavement. The District Permit Manager may require, as a Permit condition, a full lane width restoration on cement concrete pavements less than ten years old or on other pavements which are in good condition. See Restoration Figure 7-N series (posted on PennDOT Web Site -- see footer).

### Section 459.8(k) -- Temporary Restoration

While temporary restoration methods should be avoided where feasible -- to preclude additional disruptions to traffic generally -- the District Permit Manager may require, as a Permit condition, temporary restoration of pavements or paved shoulders in the following instances:

- a. Openings expected to be restored during the dates indicated in Publication 408, Section 409.3(b) & (b)(1).
- b. An opening in the pavement which was already *backfilled* without the Department having an opportunity to have an inspector present (e.g., emergency repairs during evenings, weekends, or holidays; or where the Department was not provided required prior notice; particularly if the Utility or its contractor has a documented history of highway restoration failures).
- c. An opening in the pavement or shoulder over 100 feet in length or over six feet in depth, where "flowable fill" is not used as trench backfill material.
- d. Where unfavorable subsurface or surface conditions preclude final restoration being performed promptly.

Temporary pavement surface suitable for driving may be kept in place for up to 6 months or as specified in the permit, if it is properly maintained. See *Permit Condition Code #343*.

Spreading, finishing and compaction of the temporary pavement material shall leave the surface smooth and level with the edge of existing pavement. The distance at any point from a ten (10) foot straight edge to the surface shall not exceed one-half (1/2) inch in any direction for the duration of temporary restoration. Lumps or depressions exceeding this tolerance shall be corrected by removing defective work and replacing with new material as directed.

Approved hot-mix or warm-mix bituminous material must be used for temporary restoration when available. Cold mix material will be permitted at the discretion of PennDOT. See *the following Permit Condition Code #346*:

“THE PERMITTEE IS REQUIRED TO USE HOT MIX OR WARM MIX MATERIAL FOR TEMPORARY RESTORATION. COLD MIX WILL BE PERMITTED AT THE DISCRETION OF THE DEPARTMENT. PERMITTEE MUST MAINTAIN A SMOOTH PAVEMENT SURFACE SUITABLE FOR DRIVING FOR THE DURATION OF THE TEMPORARY PAVEMENT.”

See Restoration Figure 7-N series (posted on PennDOT Web Site).

Section 459.8(l) -- Paint Date

The Permittee is not required to paint a date on temporary pavement restorations.

## **7.9a – SUBSEQUENT INSPECTIONS AFTER PENNDOT’S ACKNOWLEDGMENT OF COMPLETION**

Every year each District will QA at least 50% (per County) of randomly chosen permanent pavement and/or paved shoulder restorations within one to two years from PennDOT’s acknowledgement of completion of the permitted work and will document the results.

The Permittee has absolute responsibility to make temporary and permanent restoration if there is a failure in the area of the permitted work within two years after the acknowledged completion by PennDOT and provided there is no similar failure beyond the area of the permitted work. Any failure of the highway in the area of the permitted work identified by the District to the Permittee and/or its contractor shall be restored in accordance with the permit or as further specified by the District within 30 days (immediately if considered a safety concern), subject to final inspection by the District. A failure of the highway may be considered but not be limited to the various conditions identified in Publications 33 and 336 which are classified as medium severity.

The Regulations allow for the Permittee to deliver clear and convincing evidence demonstrating that a highway failure was caused by another party. If the Permittee claims in writing that a highway failure was caused by another party, clear and convincing evidence and documentation thereof must be submitted together with the Permittee's request for waiver of responsibility. After the Permittee provides evidence that it has provided written notice to any other party claimed by the Permittee to be responsible for the highway failure, PennDOT will investigate and make a written determination. If any affected party does not agree with PennDOT's determination, an administrative hearing may be requested within 30 days of PennDOT's written determination.

A failure of the highway more than two years after the acknowledged completion by PennDOT does not relieve the Permittee of responsibility to restore the highway. While the Permittee has absolute responsibility to restore highway failures within two years after the acknowledged completion of the permitted work, PennDOT may pursue the Permittee to correct highway failures after two years where PennDOT believes the highway failure was caused by the permitted work as provided by general principles of law.