Blacksburg TOWN OF VIRGINIA

DEPARTMENT OF
ENGINEERING AND GIS

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UTILITY TRENCH REPAIR STANDARDS 01-06-2020

Backfill & Compaction – Backfill requirements will be established under the following criteria or as required by the Engineering Department at the time of permit review and issuance.

- Backfill material placed in excavation running perpendicularly across existing public streets shall be only Flowable Fill that meets the VDOT Special Provision for Flowable Backfill.
  - No Flowable Fill may come in contact with any utilities. There shall be one (1) foot of separation with compacted VDOT No. 21A Aggregate.

  This requirement can be waived, at the discretion of the Engineering Department, upon special consideration of the site-specific permit constraints.
- Backfill of material placed in excavations running parallel along existing public streets shall be only Flowable Fill or VDOT No. 21A Aggregate, placed in loose lifts not exceeding six inches (6") and compacted to at least 95% maximum dry density.
- Backfill material placed in excavation under or within 2-ft of existing or proposed pavement, curb and gutter, sidewalk or other asphalt and/or concrete structures shall be Flowable Fill or VDOT No. 21A Aggregate, placed in loose lifts not exceeding six inches (6") and compacted to at least 95% maximum dry density. Excavated material cannot be reused in the excavation without the approval of the Engineering Department. At no time shall excavated material be placed in the roadway.
- Backfill material for excavation located within a Public Utility Easement but not under or within two feet of existing or proposed pavement or concrete may be backfilled with VDOT No. 21A Aggregate, placed in loose lifts not exceeding six inches (6") and compacted to at least 95% maximum dry density. Local material classified as Type I select material may be used as backfill upon approval by the Engineering Department. Placement and density requirements outlined above will apply.

Steel Plates – When required the permittee shall cover an open excavation with properly designed and load rated steel plates conforming to the requirements established by the Virginia Work Area Protection Manual (latest edition). Steel plates shall extend at least one foot on all sides of the excavation and shall be firmly anchored with pins. The use of steel plates will be restricted between December 1st and March 30th as directed by the Engineering Department at the time of the site-specific permit issuance.

Temporary Asphalt Repair – A temporary hot or warm mix asphalt repair shall be applied over backfilled excavation before the lane is opened to traffic. The patch shall be a minimum of 2 inches thick and level with the surrounding pavement. In streets without stripping, and at the determination of the Engineering Department, alternatives to a temporary hot or warm mix asphalt repair may be considered for periods of less than 48 hours. Temporary Asphalt Repairs must be approved as part of the excavation permitting process and final asphalt restoration shall be installed as expeditiously as possible. Should the application asphalt repairs be delayed due to adverse weather, a temporary alternate pavement structure can be provided with the approval of the Engineering Department.

Initial Pavement Repair – The following repair is required, unless another method has been approved as part of the site-specific permit.

- After backfill & compaction to subgrade is complete, saw cut pavement surface one (1) foot beyond all sides of the excavated trench.
- Remove existing pavement structure, exposing a minimum of one-foot wide undisturbed bench on top of the base (aggregate or asphalt). For asphalt sections that include a BM-25 base course, only

the asphalt structure above the base layer shall be removed and replaced. For all other asphalt structures, the complete asphalt structure shall be removed to the aggregate base.

- Replace aggregate base stone with VDOT No. 21A aggregate placed in loose lifts not exceeding six inches (6") and compacted to at least 95% maximum dry density.
- Place new hot or warm mix asphalt in lifts not to exceed three (3) inches in thickness. Each lift shall be compacted using a vibratory plate compactor or static roller. Asphalt pavement depths shall match existing pavement depths but in no case shall be less than the depth described below as determined by the presence of lane stripping on the street.
  - For streets with lane striping, the minimum depth shall be eight (8) inches of asphalt surface mix conforming to VDOT requirements for type SM-9.5D.
  - For streets without lane striping, the minimum depth shall be four (4) inches of asphalt surface mix conforming to VDOT requirements for type SM-9.5A or SM-9.5D.

The repair shall be rectangular and saw cut in straight, uniform lines that are aligned with the street centerline. When edges of pavement have been undermined, pavement shall be removed to a neat line 12" beyond the undermined area.

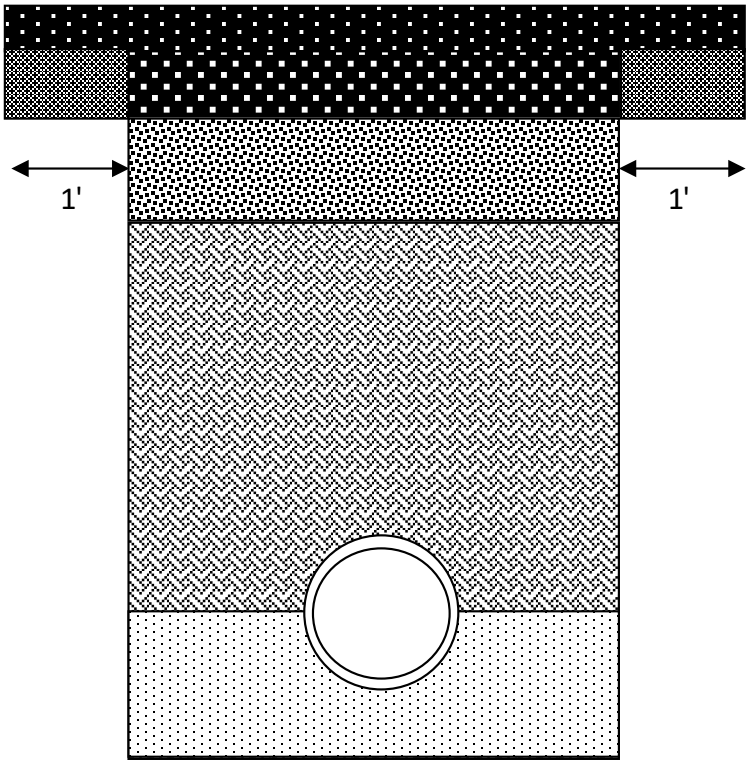
Final Restoration – The following restoration of the initial pavement repair is required, unless another method has been approved by the Engineering Department as part of the site-specific permit.

- Any initial pavement repair with an area greater than 100 square feet shall require the entire lane width to be milled and repaved, with asphalt surface mix type SM-9.5A/D (without lane striping) or SM-9.5D (with lane striping), for a distance of 10 feet from the edge of the initial pavement repair in both directions. Milling depth shall be a minimum of one and one-half inches (1 ½") and replacement shall exactly match milling depth.
- For any initial pavement repair with an area equal to or less than 100 square feet, milling and repaving are not required, however, the repair shall be made seamless by using infrared or other approved technology.

Warranty - In the event that subsurface material, curbing, sidewalk, trail or pavement over or immediately adjacent to any Excavation should become depressed, broken, or fail in any way within two (2) years after the Excavation has been completed, and such failure is attributable to the excavation or repaving the excavation, the Permittee and subcontractor who completed such work shall make the necessary repairs as directed by the Engineering Department.

- The Engineering Department shall notify the Permittee and/or subcontractor of the condition, location, and required remedy, and such Permittee or subcontractor shall repair or restore, or cause to be repaired or restored, such condition to the satisfaction of the Engineering Department within thirty (30) calendar days of the notification. If a failure poses a hazardous situation, the Permittee or subcontractor shall restore such condition within seventy-two (72) hours of notification. If the Permittee fails to make the repairs or restoration required by this section after notice has been provided, the Town may perform the necessary repairs and recover the reasonable cost of such repairs from the Permittee.
- All warranty repairs shall comply with the standards contained herein.
- All repairs to areas damaged as a result of performing the work covered by the permit shall be covered by the warranty.
- All such repair or restoration work shall be subject to an additional warranty period of two (2) years from the date of the completion of such repair. Failure of any such work will be repaired or restored as set forth above or as otherwise provided in these standards.

INITIAL PAVEMENT REPAIR CROSS SECTION — IPR - 01



Asphalt Surface Layer

Asphalt Base Layer

Aggreagte Base Stone

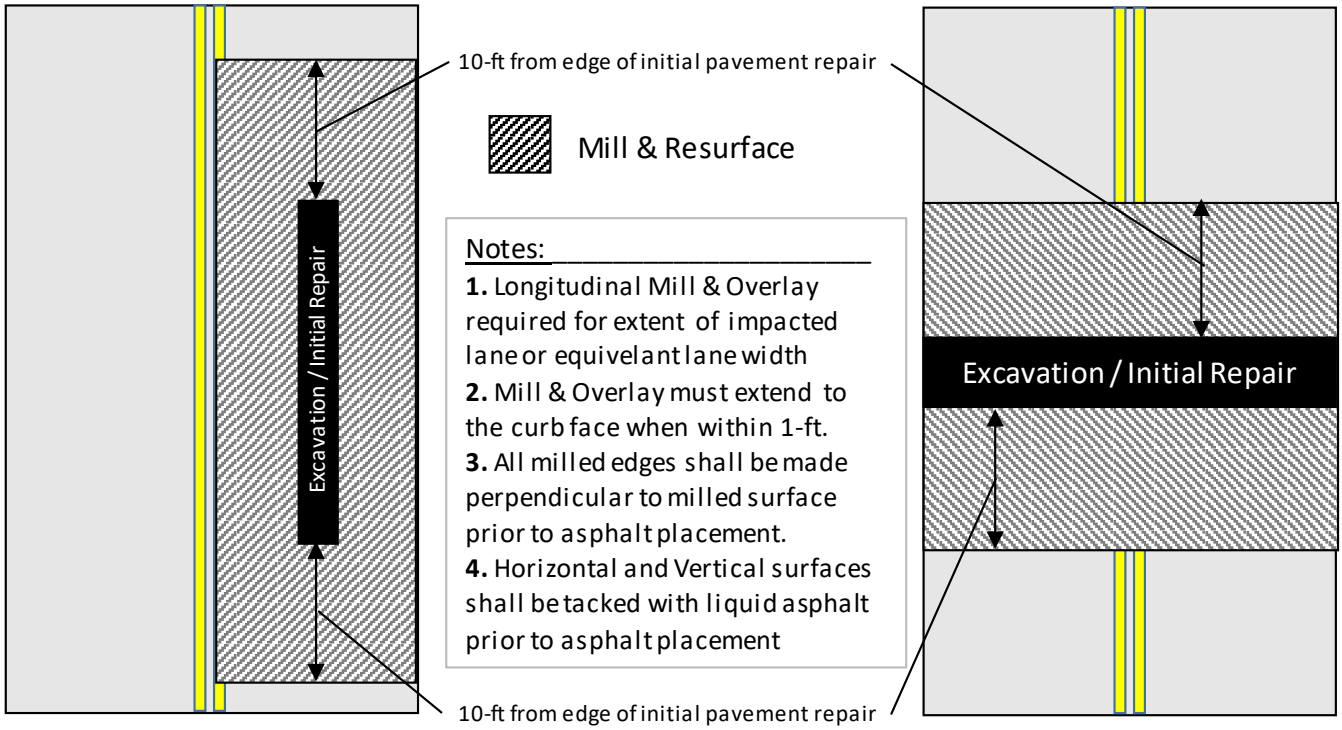
Backfill Zone

Utility Bedding

Notes:

1. ALL PAVEMENT SHALL BE SAW CUT WITH NEAT, UNIFORM LINES PRIOR TO EXCAVATION
2. PIPE BEDDING MATERIAL AND INSTALLATION REQUIREMENTS PER APPLICABLE TOWN STANDARDS
3. PIPE/UTILITY MATERIAL AND INSTALLATION REQUIREMENTS PER APPLICABLE TOWN STANDARDS
4. FULL COVERAGE TACK COAT IS REQUIRED ON ALL NEW ASPHALT SURFACE LAYER CONTACT AREAS
5. NOT OVER ONE-HALF OF THE ROADWAY WIDTH SHALL BE DISTRUBED AT ONE TIME

FINAL RESTORATION — FR-01



Notes:

1. Longitudinal Mill & Overlay required for extent of impacted lane or equivelant lane width

2. Mill & Overlay must extend to the curb face when within 1-ft.

3. All milled edges shall be made perpendicular to milled surface prior to asphalt placement.

4. Horizontal and Vertical surfaces shall be tacked with liquid asphalt prior to asphalt placement

Logitudinal Excavation

Perpendicular Excavation