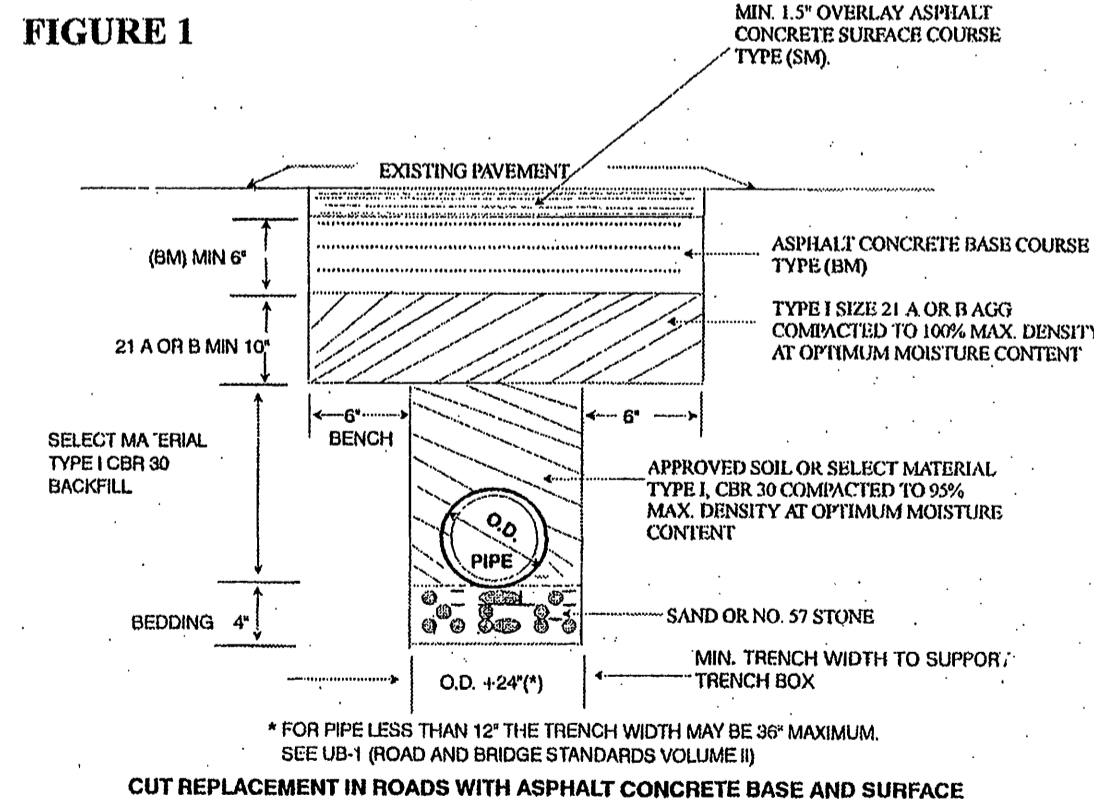


- All patches are to be replaced in accordance with the following requirements and as shown in Figure 1.
- All Excavations or Open Cuts shall comply with OSHA Technical Manual, Chapter 2, Title Excavation Hazard Recognition in Trenching and Shoring.
- The permit proprietor will be required to replace the surface and base of the roads included under this permit in accordance with VDOT Road and Bridge Specifications, VDOT Road and Bridge Standards, and this Special Provision.
- Backfill material shall include a minimum of four (4) inches bedding materials, sand or stone. The balance of the backfill shall be approved soil compacted to the bottom of subbase layer (Type I, Size 21 A or 21 B). The entire backfill shall be free from wood, decaying material, asphalt, concrete, ice, frost, large clods, stone and debris.
- Backfill material shall be compacted to a minimum of 95% of the theoretical maximum density at optimum moisture content, as determined by the Virginia Department of Transportation testing procedures (VTM), use mechanical tamping throughout the depth of the trench in six (6) layers to ensure that adequate support is provided for the subbase layer (Type I, Size 21 A or 21 B).
- It shall be the decision of the Resident Engineer to permit and review the backfill compaction test results and/or authorize an inspector to monitor the compaction.

Cuts in roads with Surface Course (SM) and Asphalt Concrete Base (BM) shall be replaced with ten (10) inches of Type I, Size 21 A or 21 B aggregate compacted to 100 percent of the theoretical maximum density at optimum moisture content covering the entire trench width in addition to a bench of six (6) inches minimum on each side. The asphalt base (BM-25d designed at 3% laboratory air void) having a thickness of 6 inches minimum or match the existing base thickness, shall be placed over the sub-base and match the elevation of the existing pavement surface. A surface asphalt concrete course (SM-9.5) of a minimum of 1.5 inches shall be placed on top of the base covering the trench width and extending 10 feet on each side.
- Cuts in surface treated roads with aggregate base course shall be replaced with the same layers as roads with asphalt base (BM) except the sub-base layer (Type I, Size 21 A or 21 B) is reduced to six (6) inches and the (BM) layer to four (4) inches but still keeping a six inch bench. The surface course shall be a surface treatment matching the existing surface.
- The cut to be back filled shall be made as dry as practicable at the time of back filling by pumping, bailing, draining, or other approved dewatering.
- All sides cuts shall be trimmed to neat straight lines and a tack coat shall be applied at a rate of 0.1 gallon per square yard of RC-250 before placing the plant mix.
- Replacement of pavement shall be from edge of pavement to edge of pavement except when individual cuts are made and not covering the entire width of the pavement.
- Replacement of all Asphalt Concrete and surface treated courses shall be rolled where possible with a unit having a manufacturer's rating of ten (10) tons, and rolled until the aggregate is keyed into the bitumen. Where rolling is not possible, a mechanical tamp will be used. In all cuts stone is to be placed in the trench daily up to maximum length of 500 feet, at which time the pavement shall be covered with a temporary or permanent asphalt patch. If the application of the bituminous layer is delayed for adverse weather conditions, the contractor shall provide and maintain a base course that is acceptable to the VDOT until such time as the appropriate pavement patch can be applied and completion of the installation of the gas, sewer, and water lines, contractor shall restore pavement in the manner prescribed on the VDOT permit within (10) days.
- Contractor will be responsible for any depression greater than 1/4" that occurs within three years of completion of patching. Correction shall consist of milling and replacing 1.5" of surface course mix (SM).

FIGURE 1



- Permittee acceptance and use of a Virginia Department of Transportation (VDOT) Land Use Permit is prima facie evidence that the permittee has read and is fully cognizant of all required permit provisions, applicable traffic control plans and associated construction standards to be employed. ALL applicants to whom permits are issued shall at all times indemnify and save harmless the Commonwealth Employees, agents, and officers, from responsibility, damage, or liability arising from the exercise of the privileges granted in such permit to the extent allowed by law.
 - The permittee agrees to secure and carry insurance against liability for personal injury and property damage that may arise from the work performed under permit and/or from the operation of permitted activity up to one million dollars (\$1,000,000) each occurrence to protect the Board members and the Department's agents or employees; seventy-five thousand dollars (\$75,000) each occurrence to protect the Board, the Department, or the Commonwealth in event of suit.
 - The permittee assumes full responsibility for any and all (downstream flooding, erosion, siltation, etc.) damages that may occur as a result of the work performed under this permit. Furthermore, the Department will in no way be responsible for any damage to the facility being placed as a result of future maintenance or construction activities performed by the Department.
 - The permittee agrees to move, remove, alter, or change any installation that interferes with the ultimate construction of the highway in alignment or grade at ND cost to the Department unless otherwise stipulated and agreed to by the Department.
 - The permittee shall immediately correct any situation that may arise as a result of these activities that the Residency Administrator or his/her representative deems hazardous to the traveling public.
 - Any and all highway signs, right-of-way markers, etc., disturbed as a result of work performed under this permit shall be accurately re-set by the permittee immediately following the work in the vicinity of the disturbed facility. The services of a certified land surveyor with experience in route surveying may be required.
 - It shall be the permittee's responsibility to obtain ANY and ALL necessary permits that may be required by any other government agencies, i.e., U.S. Army Corp. of Engineers, Department of Environmental Quality, Soil Conservation Services, etc.
 - A copy of the VDOT Land Use Permit shall be kept at the work site at all times.
 - The permittee is required to notify the local VDOT Residency Office or Permit Office at least 48 hours in advance of commencing with ANY proposed work within state maintained right-of-way.
 - The permittee is required to notify the local VDOT Residency Office or Permit Office, and the District Traffic Engineering Section when planned excavation is within 1,000 feet of a signalized intersection. Failure to carry out this requirement may result in the permit being **revoked**.
 - The permittee shall to notify "Miss Utility" (or each operator of an underground utility where no notification center exists) of any planned excavation within state maintained right-of-way. This notification must be provided at least 48 hours (excluding weekends and holidays) in advance of commencing with ANY planned excavation within state maintained right-of-way. Failure to carry out this requirement may result in this permit being **revoked**.
 - If during or before construction it is deemed necessary for the local VDOT Residency Office or Permit Office to assign an inspector to the project, the permittee shall pay the Department an additional inspection fee in an amount that will cover the salary, expense allowance, and mileage allowance for the inspector(s) assigned by the Department for handling work covered by this permit. Said inspection fee to be paid promptly each month on bills rendered by the Department.
 - The absence of a VDOT inspector does NOT in any way relieve the permittee of his/her responsibility to perform the work in accordance with the approved plans, provisions of the attached permit, VDOT's Road and Bridge Standards (Current edition) and VDOT's Road and Bridge Specifications (Current edition). No changes shall be made without approval of the Residency Administrator or his/her representative.
 - It is the duty of the Residency Administrator or his/her representative to keep all roads maintained in a safe and travelable condition at ALL times. Therefore, any permit may be **denied, revoked or suspended** when in the opinion of the Residency Administrator or his/her representative, the safety, use or maintenance of the highway so requires.
 - The permittee shall at ALL times give strict attention to the safety and rights of the traveling public, their employees and themselves. VDOT reserves the right to stop work at anytime due to safety problems and/or non-compliance with the terms of the permit. The Department may, at its discretion, complete any of the work covered in the permit or restore the right-of-way to the Department's standards and bill the permittee for the actual cost of such work. The permittee may be required to move, alter, change or remove from state maintained right-of-way, in a satisfactory manner, any installation made under this permit.
 - ALL work performed under the auspices of this permit shall be subject to VDOT's direction and in accordance with VDOT's Road and Bridge Standards (Current edition) and VDOT's Road and Bridge Specifications (Current edition) and shall be performed to the satisfaction of the Residency Administrator or his/her representative.
 - Design changes, specified material changes and/or field changes from the approved plans shall be submitted to the appropriate local VDOT Residency Office or Permit Office prior to proceeding with the work. A letter of explanation shall accompany the revised design plans and/or engineering calculations submitted for review and approval by the local Residency Office or Permit Office.
 - The permittee shall meet or exceed the existing pavement and sub-base typical section when constructing pavement widening adjacent to an existing state maintained roadway. The proposed typical section must be reviewed and approved by the Residency Administrator or his/her representative prior to commencing with any work within state maintained right-of-way. ALL pavement widening shall be in accordance with VDOT Road and Bridge Standard 303.02.
- Traffic Control and Safety**
- Traffic shall NOT be blocked or re-routed (detoured) without written permission from the Residency Administrator or his/her representative. Where one-way traffic is necessary, the active work zone shall be properly flagged by a trained, certified flagperson. A certification card is required for any person flagging within state maintained right-of-way.
 - During construction, the permittee shall furnish ALL necessary signs, flagpersons and other protective devices (lights, barricades, etc.) for protection of traffic and workers in accordance with the Virginia Work Area Protection Manual or as directed by the Residency Administrator or his/her representative. All signs shall be in accordance with the current edition of the Manual of Uniform Traffic Control Devices (MUTCD). Trained, certified flagpersons shall be provided in sufficient number and locations as necessary for control and protection of vehicular and pedestrian traffic in accordance with the MUTCD. Flagpersons shall use sign paddles to regulate traffic in accordance with the MUTCD.
 - Certification for flagperson will be awarded upon a candidate's satisfactory completion of an examination. Certification card shall be carried by the flagperson while performing duties. Any flagperson found not in possession of his/her certification card shall be removed from the flagging site and the Residency Administrator or his/her representative will suspend operations requiring flagpersons. Furthermore, flagpersons performing duties improperly shall have their certification **revoked**.
 - No excavated material is to be placed or tracked on the pavement, without written permission of the Residency Administrator or his/her representative. When so permitted, the pavement shall be satisfactorily cleaned by an approved method. No cleaned (track-mounted) equipment is to be used on the pavement, without proper protection to the pavement.

Hours and Days of Work

- Permittee is authorized to work between the hours of 9:00 a.m. to 3:30 p.m. Monday through Friday, which deals with lane closures and/or impedes/stop traffic. The permit will not be valid from 12:00 noon on the weekday preceding and through the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day. If the observed holiday falls on Monday, the permit will not be valid from 12:00 noon on the preceding Friday through the holiday. Any variance in the authorized work times must be obtained from the Residency Administrator or his/her representative.

Excavation

- OSHA requires shoring for any excavation four feet (4') or more in depth.
- When not utilizing shoring, excavations are to be sloped accordingly.

- A licensed Professional Engineer shall certify all shoring and/or trenching boxes.

Inspection and Restoration

- Inspection and testing of all fill embankments, storm sewer and utility trench backfill shall be performed in accordance with all applicable sections of VDOT's Road and Bridge Specifications (current edition).
- A licensed geotechnical engineer (or certified technician under the direction of a licensed geotechnical engineer) shall observe the placement of all fill embankments, and storm sewer and utility trench backfill.
- Inspection services shall be provided utilizing one of the following options:
 - The permittee may retain services of licensed geotechnical engineer (or technician under the direction of a geotechnical engineer) to perform required inspection and testing, or
 - The permittee may request that VDOT provide inspection services through the establishment of an account receivable with the contractor responsible for providing all required material testing.
- All testing reports and engineer's certification shall be submitted to VDOT for review and approval prior to completion of the VDOT Land Use Permit.
- The permittee shall be responsible for correcting any settlement of backfill or pavement for a period of three (3) years after completion of work.
- Where pavement exists, all crossings shall be bored, pushed or jacked from back-of-ditchline to back-of-ditchline or toe-of-fill to toe-of-fill. The pavement shall NOT be cut unless otherwise approved by the Residency Administrator or his/her representative and then only if justifiable circumstances prevail or proof is shown that a thorough attempt has been made to push, bore or jack.
- Whenever the pavement is permitted to be cut, not over one-half of the roadway width shall be disturbed at one time. The first opening shall be completely restored to satisfactory, travelable condition before the second half can be opened. The permittee shall mill and resurface ALL (asphalt) concrete roadways and resurface all other roadway with like material that exists. Whenever the pavement is permitted to be cut, the provisions of LUP-DC shall apply. Where the pavement is disturbed or deemed weakened in its entirety or such portions as deemed desirable by the Department, the pavement shall be restored or replaced in a manner that is satisfactory to the Residency Administrator or his/her representative.

Environmental

- The permittee is responsible for pursuing and obtaining any and all environmental permits which may be required to pursue the proposed activity prior to any work beginning within state maintained right-of-way.
- In the event the permittee encounters hazardous materials or underground storage tanks within state maintained right-of-way in the pursuit of his activities, the permittee is responsible for ceasing all work within the site, notifying the local VDOT Residency Office or Permit Office and other responsible parties, i.e., the local fire department, emergency services, Department of Environmental Quality, etc. The permittee is responsible for coordinating and completing all removal/removal activities required in order to complete the proposed activities within the state maintained right-of-way.
- In the event the permittee encounters cultural resources, archaeological, paleontological, and/or rare minerals within the right of way in the pursuit of his activities, the permittee shall act immediately to suspend work at the site of the discovery and notify the local VDOT Residency Office or Permit Office. The permittee is responsible for notifying the proper state authority charged with the responsibility for investigating and evaluating such finds. The permittee will meet all necessary requirements for resolving any conflicts prior to continuing with the proposed activities within the state maintained right-of-way and shall provide evidence of such compliance to the local VDOT Residency Office or Permit Office.
- Roadway drainage shall NOT be blocked or diverted. The shoulders, ditches, roadside and drainage facilities, as well as the pavement, shall be kept in an operable condition satisfactory to the Department. Necessary precautions shall be taken by the permittee to insure against sitation of adjacent properties, streams, etc. in accordance with VDOT's current standards or as prescribed by the Department's Environmental Manual and Residency Administrator or his/her representative.

Entrances

- Road and street connections, private entrances, and construction entrances shall be kept in satisfactory condition. Entrances shall NOT be blocked. Ample provisions must be made to provide safe ingress and egress to adjacent property at ALL times. Entrances that are disturbed shall be restored to the satisfaction of the property owner and the Residency Administrator or his/her representative.

- The permittee is responsible for determining the correct size of each entrance pipe through the submittal of engineering calculations to the local VDOT Residency Office or Permit Office for review and approval.

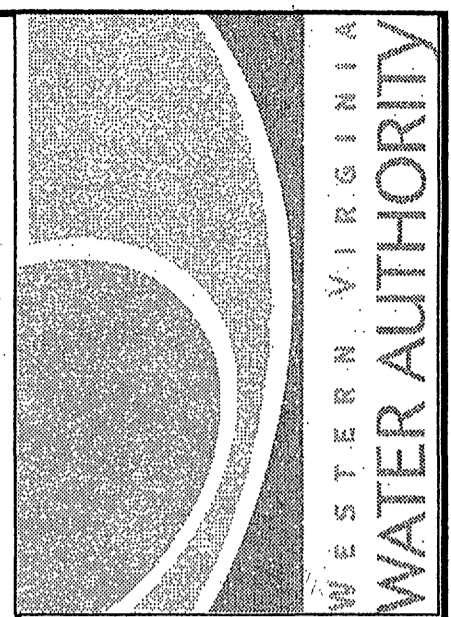
Utilities

- Prior to any excavation, the permittee shall comply with the terms of Title 56, Chapter 103 of the Underground Utility Damage Prevention Act and Section 56-265.14 through 56-265.20 of the Code of Virginia. This permit does NOT grant permission to grade on or near property of others, or adjust or disturb in anyway existing utility poles or underground facilities within the permitted area. Permission to do so must be obtained from the impacted utility company and any expense involved shall be borne by the permittee. Any conflicts with existing utility facilities must be resolved between the permittee and the utility owner(s) involved.
- All underground utility crossings and parallel installations shall have a minimum cover of 36 inches except underground telecommunications cables placed adjacent to the outside edge of the right-of-way line and beyond of ditch line shall have a minimum of 30 inches cover. All other underground facilities shall have a minimum cover of 36 inches.
- Where feasible, all aboveground installations (such as fire hydrants, telephone pedestals, markers, etc.) shall be located adjacent to the outside edge of the right-of-way line and in accordance with minimum clear zone requirements. All manhole covers, valve box, etc., shall be installed two inches below existing ground line and shall conform to existing contours.
- No poles, guys, anchors, etc. are to be placed on state maintained right-of-way unless so indicated and approved on this permit. At no time will any such facilities be allowed between the ditchline and the traveled roadway.
- ALL overhead crossings(s) shall conform to the requirements of the National Electrical Safety Code (current edition). The vertical clearance of the lowest wire or cable crossing an Interstate and limited access highway shall not be less than 21 feet, and 18 feet for crossing all primary and secondary roads and entrances.

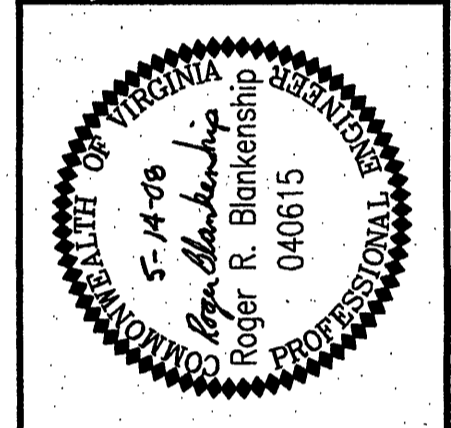
Final Inspection and Completion of Permit

- Upon completion of the work covered by this permit, all disturbed areas outside of the roadway prism shall be restored to their original condition as found prior to starting such work.
- Completion of this permit is contingent upon the permittee's compliance with ALL governing bodies involved in the total completion of work on state maintained right-of-way.
- The permittee is required to notify the local VDOT Residency Office or Permit Office upon completion of work covered by the attached VDOT Land Use Permit to request a final inspection.

APPROVED



ENGINEERING SERVICES
601 SOUTH JEFFERSON STREET
SUITE 300
ROANOK, VIRGINIA 24011
PHONE: (540) 853-5641



CLEARWATER AVENUE WATER LINE REPLACEMENT PROJECT

Designed By:	RRB
Drawn By:	RRB
Checked By:	JGR
Date:	03/31/08
Scale:	N.T.S.
Plan #:	00-00
Sheet:	7 OF 7