



# Right-of-Way Use Permits

## Commercial, Residential, or Utilities

### Purpose and Authority

1. *A.R.S. § 11-251* authorizes the Boards of Supervisors of the various counties to “lay out, maintain, control and manage” the public roads in unincorporated areas of the county. *A.R.S. § 40-283* provides that the Board “may impose restrictions and limitations upon the use of the public roads as it deems best for the public safety or welfare.” *A.R.S. § 11-562* provides that the County Engineer, as the agent of the Board of Supervisors, “shall have charge of all highways, other engineering construction and improvements, alterations and repairs to county property.”
2. The County Engineer shall require plans engineered by a Professional Engineer Licensed in Arizona to be submitted with a Use Permit for review and acceptance. Navajo County may waive this requirement for small projects with adequate justification from the applicant. All work in the right-of-way shall be performed under the supervision of a Professional Engineer unless otherwise waived by the County Engineer.
3. Work within the Right-of-Way shall be inspected and accepted by County Engineering Staff prior to closing of the permit.
4. Case law has held that the use of public rights-of-way for other than its primary intended use is subordinate to the use by the authority that controls the roads.
5. The Navajo County Board of Supervisors, on June 8, 1971, adopted a resolution imposing certain regulations on construction within the public rights-of-way in the unincorporated areas of Navajo County, including the requirement that a permit be obtained from the office of the County Engineer.
6. Changes in the methods of construction and in the liability exposure of the public agency require updating of permit requirements and construction specifications periodically.
7. The purpose of these stipulations and specifications is to consolidate and standardize permit requirements for work within public rights-of-way under the control of Navajo County to ensure adequate protection of legitimate users of public rights-of-way. It is not the intent to supplant any other requirements of Federal, State, or local regulatory agencies or codes, nor those of individual utilities.
8. The specifications detailed herein are intended to serve as the minimum standards for all construction within existing or proposed Navajo County rights-of-way. For work within existing public rights-of-way, the permit issued by the Deputy Director of Highways office shall prescribe which parts of these specifications shall be complied with in the work.



9. Failure to conform to these specifications may be considered a violation of *A.R.S. § 28-7053*, and subject to the penalties therein specified. Encroachments installed without a permit are subject to removal and restoration of the right-of-way at the owner's expense.
10. Navajo County may, in certain cases, require the *Permit Holder* to furnish a performance bond or other financial assurance for major or extensive projects, and/or may accept a financial assurance in lieu of certain testing requirements.

### General Requirements:

1. Prior to performing work above, beneath or within a Navajo County Road right-of-way, a permit shall be applied for at the Navajo County Public Works Department. This includes any public road right-of-way or easement, *whether or not it is a maintained road*. The permit will be issued to the owner of the encroachment. The *Contractor* who will be performing the work may apply for the permit. The hard copy of the permit shall be available on the job site.
2. For any construction within a right-of-way, the preferred location is the greatest distance away from centerline that is practical. Excavation, construction, and restoration requirements necessarily are more stringent closer to the center of the roadway.
3. For any construction within a right-of-way, the preferred location is the greatest distance away from centerline that is practical. Excavation, construction, and restoration requirements necessarily are more stringent closer to the center of the roadway.
4. Signs, including but not necessarily limited to, business and personal advertising, real estate, and political campaign signs, are NOT permitted within the public right-of-way, and are subject to immediate removal when observed by county personnel.
5. All work within road rights-of-way, including any landscaping work or driveway construction between the edge of the traveled roadway and the easement or property line, shall be performed by a licensed, bonded, and Insured *Contractor*, or a franchised or Improvement District utility. A property owner may install a driveway culvert, construct a driveway, or install minor landscaping materials for his/her own single family residence.
6. When a major part of the work is in the road right-of-way, the *Contractor* shall hold a *Contractor's* license of a grade and type acceptable to the County Engineer. When work in the right-of-way is minor or incidental to the main effort on a residential lot, any *Contractor* licensed for the particular work may perform the work in the right-of-way. Examples of minor work in the right-of-way include installation of short-side utility service(s) to a single family residence, installation of a driveway and culvert as part of



the construction of a single family residence, and landscaping of the area outside the roadway prism. All road crossings, whether bored or open cut, shall be made by a Licensed *Contractor* or a qualified crew from the local utility.

7. All utility work within the right-of-way shall adhere to the requirements of the approved project plans and utility specifications and/or the current county construction specifications.
8. The *Permit Holder* shall ensure compliance with all applicable Federal, State, and Local laws, including but not limited to, OSHA, EPA, and utility protection (Blue Stake) requirements. Work shall be done in conformance with the current edition of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction as modified herein, except as approved in advance by the Engineer.
9. Navajo County reserves the right to periodically or continuously inspect the work as it affects the road right-of-way, reduce or eliminate requirements and stipulations, and close the permit when all work and punch list items are finished. The specific involvement of the Inspector shall be to ensure compliance with the permit requirements and specifications as related to the road right-of-way, to ensure that the public convenience and safety are maintained, and to serve as the primary point of contact between the Engineer and the *Permit Holder*. The presence or absence of an Inspector does not relieve the *Permit Holder* from any of the permit provisions. The Inspector will not be responsible for technical inspection of the permitted work, but only for the compliance with the permit requirements. The Inspector may reject any portion of the work and require replacement of work that does not conform to these specifications.
10. A single point of contact, and at least one alternate, shall be designated in writing by the *Permit Holder* prior to the start of work. These contact persons may be employees of the *Permit Holder*, or of the *Contractor*, at the discretion of the *Permit Holder*. At least one contact person shall be available, in person or by radio or telephone, within 15 minutes of the job site whenever there is any work in progress on the job. The Inspector is the single point of contact with Navajo County, and is available by cell phone or radio from any of the Navajo County Public Works offices during working hours.
11. If the *Permit Holder* elects to work more than a forty-hour week, other than on an emergency basis, then work inspected after forty hours shall be considered as overtime. The Engineer reserves the right to inspect such planned work and the *Permit Holder* shall reimburse Navajo County for actual cost of inspection which includes wages at time-and-one-half (double time on Sundays and holidays) and mileage.



12. *Permit Holder* shall locate sufficient property corner pins along the right-of-way of each road included in the permit to assure themselves work is done in the proper location. Navajo County is not responsible for incorrectly located work.
13. *Permit Holders* and/or *Contractors* shall submit acceptable proof of insurance with the permit application or shall maintain on file an annual certificate of insurance proving coverage that is satisfactory to the County Engineer. All utilities shall maintain on file a current certificate of insurance listing Navajo County as an additional named insured.
14. *Permit Holders* and/or *Contractors* shall submit acceptable proof of insurance with the permit application or shall maintain on file an annual certificate of insurance proving coverage that is satisfactory to the County Engineer. All utilities shall maintain on file a current certificate of insurance listing Navajo County as an additional named insured.
15. Major changes to the approved construction plans will require submission of revised plans to the Engineer. Such revised plans shall be received in the Holbrook office at least three working days prior to the intended start date of the revised work, and may be submitted in a digital form compatible with AutoCAD. Minor changes may be approved by the Inspector on the job, or, at the Inspector's discretion, may be referred to the Engineer. All changes shall be reflected on the "As-Built" drawings submitted at the close of the project. Major changes include, but may not be limited to:
  - a. Changes of desired location:
    - i. to opposite side of road
    - ii. into roadway prism
    - iii. into pavement
  - b. Changes to proposed traffic control plan or methods
  - c. Changes backfill or restoration materials.
  - d. Any changes to culvert or drainage facilities other than substituting an equivalent arched culvert for a round pipe culvert.
16. *Permit Holder* shall be responsible for and warranty any and all repairs to the roadway should any work done under the permit fail.
17. The County Engineer shall require plans engineered by a Professional Engineer Licensed in Arizona to be submitted with a Use Permit for review and acceptance. Navajo County may waive this requirement for small projects with adequate justification from the applicant. All work in the right-of-way shall be performed under the supervision of a Professional Engineer unless otherwise waived by the County Engineer.
18. Navajo County reserves the right to require the use of specific types or sizes of equipment and construction methods for any portion of the work within the public right-of-way when such is deemed in the best interests of protection of public health,



safety, and welfare. This particularly includes, but may not be limited to, the backfill and restoration operations and traffic protection and control.

19. Asphalt patches in roadway pavement shall conform to MAG Standards or match existing road section. Whichever is greater.
20. *Permit Holder* shall ensure that copies of all required test reports are transmitted through the Owner's Engineer to the Engineer on a timely basis. Compaction test reports shall be received by the Engineer not later than the next working day after the test is performed. Late test reports shall constitute grounds for the Engineer to require more stringent construction requirements, or suspend operations under the permit.
21. A Traffic Control Plan is required as part of the Use Permit and shall be submitted 5 days prior to start of construction.
22. Failure to provide proper traffic control per submitted plan may result in the issuance of an immediate STOP WORK order and/or revocation of the permit.

### Notices and Public Information

1. The *Permit Holder* shall notify homeowners in advance of work in front of their property that extends beyond one working day. Notice may be by letter, personal contact, or "Door Knob Hangers," etc.
2. The *Permit Holder* shall have notice of total road closures and partial closures if required by the Engineer announced on the local radio stations 24 to 48 hours in advance of the start of work. Notice shall give location and duration of travel restrictions and suggest detours to use.
3. The *Permit Holder* shall notify Navajo County before removing or obscuring any traffic control device, including signs, pavement markings or signals. Replacement of such devices shall be as directed by and under the supervision of the Engineer.
4. The *Permit Holder* SHALL notify affected utilities, local authorities, emergency service providers, etc., as appropriate, two working days prior to commencing construction.
5. The *Permit Holder* shall notify the Navajo County Sheriff's Dispatch upon the installation and/or removal of road closures, or lane closures on major roads.

#### **Emergency Call 911.**

6. The *Permit Holder* shall notify the Navajo County Public Works Department at least two working days prior to the start of any work under either an annual or one-time right-of-way use permit or before the pre-construction meeting for major projects. Emergency utility repairs are exempt from the advance notice requirement, but notice shall be given as soon as practical of any work within the right-of-way. This includes calling the Public Works Department or Sheriff's Dispatch during non-working hours while the emergency



repair crews are in route to or at the scene of the emergency. Public Works will inform the *Permit Holder* of the appropriate contacts before the permit is approved.

### Driveway, Culverts, and Landscaping

1. Installation of heated driveways, sidewalks, or other landscape features within the public right-of-way shall be specifically identified on the permit application. Use of glycol or other toxic or hazardous materials in such systems shall not be permitted within the public right-of-way. Neither Navajo County, its *Contractors* or agents, nor other *Permit Holders* or their *Contractors* shall be liable for replacement of any such features that are installed contrary to the requirements of the installation permits or without a permit.
2. New or restored driveway pavement shall conform with the established road grade, and shall not extend above the plane of the extended roadway crown within the roadway prism.
3. Driveway culverts shall be at least 18 inches in diameter or equivalent arched corrugated metal pipe. Larger sizes may be required when local drainage conditions warrant. Smaller sizes or other materials are not acceptable unless approved in advance by the engineer. Arched, or “squashed” or “flat-bottom” pipe shall be installed with the flatter side down, and in such a manner as to remove any bow or curvature of the pipe.

### Sanitary, Traffic Control, and Safety Provisions

1. *Contractor* shall provide adequate sanitary facilities on the job site for use of the workers. The *Contractor* shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as required to comply with the requirements of the State and local boards of health, or of other bodies or tribunals having jurisdiction.
2. Trenching operations shall be conducted under the immediate supervision of an OSHA certified Competent Person or a Registered Professional (Civil or Geotechnical) Engineer, who shall have full authority to immediately stop the work until an unsafe trench conditions is corrected. Navajo County reserves the right to immediately stop-order trenching operations in the right-of-way if the trench is or becomes unsafe, regardless of depth, or if the *Contractor* does not have a Competent Person on the job site when a trench exceeds 4 feet in depth.
3. Maximum open trench limits for non-working hours are 50 feet with lighted barricades and bright orange nylon or plastic fencing surrounding the trench, unless otherwise



indicated on the signed permit. Specific individual variations within a project will be considered on an individual case-by-case basis.

4. ANSI/ISEA 107-210 Class II safety apparel including shirts, vests, jackets, and bibs and all appropriate personal protective equipment. When factors such as: nighttime, no physical barrier, work on roadway, high speed roadways, urban areas, and high-crash areas exist; or performing flagging operations, temporary traffic control setup and removal, positive protection setup and removal, and construction - Class III apparel shall be used. Nomex vests and/or shirts are available in the appropriate colors for operations which require fire resistant or non-spark-generating clothing.
5. A Traffic Control Plan (TCP, in conformance with Part VI of the *Manual of Uniform Traffic Control Devices (MUTCD)*, shall be submitted to the Engineer for approval, not less than 3 working days prior to any work being started. **A COPY OF THE APPROVED TCP SHALL BE AVAILABLE ON THE JOBSITE AT ALL TIMES WHEN WORK IS IN PROGRESS.**
6. *Permit Holder* shall ensure that at least two certified flaggers are present and working when work equipment is within the roadway prism and when equipment is entering, exiting, or working in roadway. For short periods of time not to exceed ten (10) minutes out of any one hour when working on low volume roadways. Except in an emergency when the public safety is immediately endangered, flaggers shall be equipped with a STOP/SLOW sign on a 72" staff.
7. Flaggers other than uniformed police officers shall not direct traffic to operate contrary to any visible regulatory signs. For example, if there is a **STOP** sign at a flagged intersection, traffic must stop even when moving under flagger control. Requests to remove or obscure regulatory signs shall be included in the TCP and approved by the Engineer in advance.
8. Control of traffic takes precedence over all other construction operations in the right-of-way and is especially important during any emergency situation. If one lane of traffic is obstructed by construction equipment, materials, or operations, flaggers will be in place and working at all times. If there are not sufficient workers available to flag traffic and perform the construction operations, work shall stop and substitute flaggers shall be provided until adequate flaggers are present, and all signs are in place and visible to traffic. Sufficient flaggers shall be available to provide continuous flagging during the work operations that required flagging.
9. Flagging and traffic control set-up shall proceed from the least restrictive (the flagger or road closer) and shall be removed in the reverse order.
10. All personnel setting or removing traffic controls shall be protected with at least one vehicle with flashing lights between them and the approaching traffic.



11. No blasting shall be accomplished within the right-of-way unless approved by the County Engineer, local authorities, and done by an appropriately licensed, bonded, and insured blasting *Contractor*. Requests for approval for blasting shall be submitted, *IN WRITING*, not later than one working day prior to intended start date of any blasting.
12. Blasting within 1000 ft. of a road right-of-way shall be coordinated with the Engineer to ensure proper warning of motorists. Blasting zones shall have such additional warning signs as are required in Section I, MUTCD.
13. Roads may be closed during non-working hours only with the prior approval of the Engineer. Adequate lighting, detour signing and maintenance, changeable message signs, and advance notice to users of the roadway shall be provided by the *Permit Holder*. In certain exceptional cases when one lane of a road must remain closed during non-working hours, the Engineer may approve posting the roadway for one-way traffic with proper advance notice and appropriate signs. Flaggers may be required to be on site twenty-four hours per day, with adequate flood lighting of their positions, when one way traffic or overnight road closure is in effect. Additionally acceptable for 24 hour control of single lane operations, is the use of temporary traffic lights and signals with auto start backup generators.

### Temporary Facilities and Maintenance of Work Area

1. No processing of soil will occur on the traveled portion of road rights-of-way without written approval of the Engineer in advance.
2. *STOP* and *YIELD* signs that are removed or obscured by construction activities shall be replaced with ones mounted on a temporary support as directed by the Inspector during periods when flaggers are not present. Permanent replacement of *STOP* or *YIELD* signs shall be under, the direct supervision of the Engineer.
3. Disposal or processing of soils on private property shall only occur with written permission of the property owner. If such disposal is in excess of fifty (50) cubic yards or within a wash or flood plain, a copy of the approved grading plan and permits shall be attached to the written approval.
4. Trenching spoil shall be removed from the traveled portion of road rights-of-way prior to the end of each work day in order to restore unobstructed two-way traffic. If this is not practical, then traffic control shall establish accordance with a traffic control plan prepared in accordance with the MUCTD and approved by the Engineer.
5. Proper temporary ditching shall be provided to carry storm water away from the work area, as dictated by the weather conditions, without creating erosion or sedimentation conditions downstream of the project. Erosion barriers may be required if conditions





warrant. Drainage facilities shall be restored on a daily basis when the National Weather Service forecast indicates a 50% or greater chance of precipitation within the next seventy-two hours without regard to the timing of other work on the project including scheduled cleanup and restoration or when any work is in progress within the right-of-way between November 1 and March 1 of the next year.

6. All paved surfaces shall be power swept and/or washed clean at the end of each work day, or as appropriate for conditions. Surface shall be sufficiently clean to preclude dust formation or muddy or slippery conditions.
7. Unpaved roads in the work area shall be *bladed with a road grader* at least once each week to maintain the roadway so that it is passable to any passenger vehicle during the duration of the work included in the permit, and as necessary to eliminate ruts, large bumps, mud or mud holes. Back dragging with a bucket is not an acceptable substitute.
8. If permitted work is not completed before winter, twenty-four hours per day, winter maintenance, including snow removal and ice control, are the responsibility of the *Permit Holder*. *Permit Holder* shall provide snow removal and ice control equipment with operators working on site within two hours after being notified of the need by the Navajo County Public Works Department.
9. During cold months when snow or ice conditions occur, it shall be the responsibility of the *Permit Holder* to ensure that permitted work does not interfere with public snow removal and ice control operations.
10. Trench plates shall not be left in place past the close of the working day when the US Weather Service predicts snow or ice before the next working day.

## Trenching and Backfill Requirements

### Preferred Method

1. Boring is the preferred method of crossing paved areas. Where boring is unfeasible and open cut trenches are used, surfaces shall be restored in conformance with this section.

### Clearing and Grubbing

1. Remove all trees, shrubs, other landscaping materials, and debris in the right-of-way within five feet of the trench and as necessary for construction of trench. Remove from the job site all rocks dug out of trench and within construction path unless the homeowner requests in writing they be moved to their property.



## Material

1. Trench bedding, shading, and backfill shall conform with the *Permit Holder's* plans and specifications for all work within the roadway prism, where such plans and specifications have been previously submitted to the Engineer for review and approval. Where such plans and specifications have not been approved, work within the roadway prism shall be performed in accordance with the appropriate section(s) listed below.
2. Bedding, shading, backfill and aggregate materials shall be consistent within a job. Variation between individual deliveries of material shall be kept to a minimum, and all materials used shall conform to gradation and mix designs approved by the Engineer for the job. Noticeable changes between loads of a material or in the compaction characteristics of the in-place materials may delay approval or result in rejection of the permitted work until new laboratory tests can be completed, submitted and approved. *Permit Holder* shall submit to the Engineer copies of all test reports in conformance with the schedules listed in a project.
3. Submit slurry mix design for Engineer's approval. Slurry shall be used from the top of the shading over the utility line up to the bottom of the AC layer. Slurry may be brought up to the finished surface temporarily to allow for efficiency in the construction and restoration operations. County reserves the right to require the installation of aggregate base in accordance with the appropriate Trenching Section above if conditions require. Pavement or surface material shall be replaced according to the Longitudinal Trenches within Three Feet of Edge of Pavement or in a Wheel Path as detailed below.
4. County reserves the right to require cold mix temporary patches in place of or in addition to slurry if conditions require, and to limit seasonal usage of trench plates.
5. Slurry or lean concrete mix designs shall include mix proportions, compressive strength, and slump recommendations. Seasonal adjustment of mix design should account for cold weather, varying wait times at the job site, the mass or volume of the material in place, drainage conditions, and allowable additives including additional water at the job site.

## Testing

1. For trenches falling under the paved category, submit at least one compaction report every 200 feet for each 8 inch lift when the trench is filled by lifts, or every 200 feet at random elevations when the trench is backfilled diagonally.
2. Transverse trenches require in addition to item 1, at least one compaction test for each lift of the backfill, regardless of the length of the crossing



3. For trenches falling under the non-paved category, submit at least one compaction report every 200 feet for each 12 inch lift when the trench is filled by lifts, or every 200 feet at random elevations when the trench is backfilled diagonally.
4. For additional testing requirements please see appropriate section below.

## Requirements within Roadway Prism

### Longitudinal Trenches

#### *Paved Areas*

#### Within Three Feet of Edge of Pavement or in a Wheel Path

1. Compact shading material to 95% (or to 90% if sand) minimum six inches (6") over line.
2. Compact select backfill to 90% T-180 density, or 95% of T-99 density.
3. Compact to 98% of T-180 or 102% of T-99 density an 8 inch lift of AB Class-2 to the bottom-of-asphalt elevation of the road.
4. The pavement shall be saw cut and removed back an additional twelve inches on the centerline side from disturbed subgrade or to a minimum of three feet from the edge, the existing aggregate base moistened and compacted to 95% T-180 density or 102% of T-99 density, and the pavement replaced one inch thicker than the existing pavement or three-and-one-half inches thickness whichever is greater. Placement of Asphaltic Concrete Pavement 4 inches thick or greater shall be in two or more lifts.
5. At *Permit Holder's* option, a County-approved, seasonally appropriate slurry or lean concrete may be installed from finished shading material to bottom of ***SURFACE MATERIAL ELEVATION***. Surface shall be restored as described above.

#### Within One Foot of the Center of a Lane or the Centerline

1. Compact shading material to 95% (or to 90% if sand) minimum six inches (6") over line.
2. Compact select backfill to 95% of T-99 density. Submit at least one compaction report every 200 feet for each 12 inch lift when the trench is filled by lifts, or every 200 feet at random elevations when the trench is backfilled diagonally.
3. Compact to 95% of T-180 density or 100% of T-99 density an 8 inch lift of AB Class-2 to the bottom-of-asphalt elevation of the road. Submit certified compaction report for each lift every 200 feet. Ditches and fill slopes shall be brought to finished grade with select native materials and compacted.
4. The pavement shall be saw cut and removed back an additional twelve inches on each side of the trench from disturbed subgrade or to a minimum of three feet wide, the existing aggregate base moistened and compacted to 95% T-180 density or 100% T-99



density, and the pavement replaced at least one inch thicker than the existing pavement, or three-and-one half inches thickness, whichever is greater.

5. At *Permit Holder's* option, and with advance approval from the Engineer, trench may be compacted to 100% T-180 density and pavement replaced to the thickness of existing pavement.
6. At *Permit Holder's* option, a County-approved, seasonally appropriate slurry or lean concrete may be installed from finished shading material to bottom of ***SURFACE MATERIAL ELEVATION***. Surface shall be restored as described above.

### ***Non-Paved Area***

1. Compact shading material to 95% (or to 90% if sand) minimum six inches (6") over line.
2. Compact select backfill to 95% T-99 density.
3. Compact to 100% T-99 density an 8 inch lift of AB Class-2 and a 4 inch lift of AB Class-6 to the finished elevation of the road.
4. At *Permit Holder's* option, County-approved slurry mix may be installed from finished shading material to bottom of ***SURFACE MATERIAL ELEVATION***. Slurry may be brought to surface as a temporary measure, but shall be removed prior to replacement of surface material. Surface shall be restored as described above. Slurry used as backfill in drainage areas or ditches shall not be placed above the previously existing top of the grade.

### **Transverse Trenches**

#### ***Paved Area***

All transverse trenches beneath a paved area shall be backfilled in the same manner as Longitudinal Trenches, following the Testing Section number 2 requirements.

#### ***Non-Paved Area***

1. Shading material shall be in accordance with the material section above.
2. Compact select backfill to 95% and submit compaction report for each of the 12 inch lifts. Diagonal backfill compaction methods are not permitted without prior approval by Engineer.
3. Compact new 8" AB Class-2 lift to 100%, submit compaction report for each lift.
4. Replace aggregate surface (Class 6) as appropriate. Compact to 98% of T-180 or 102% of T-99 density an 8 inch lift of AB Class-6 to the bottom-of-asphalt elevation of the road. Submit certified compaction report for each lift every 200 feet.
5. At *Permit Holder's* option, County-approved slurry mix may be installed from finished shading material to bottom of ***SURFACE MATERIAL ELEVATION***, using manual tamping or



internal vibrators for lifts of 12" or less, and internal vibration for lifts greater than 12" thick. Surface shall be restored as described above.

### **Individual Excavations for Manholes, Sewer, Water, or Gas Service Connections, etc.**

1. Compact shading material to 95% (or to 90% if sand) over utility line.
2. Compact select backfill to 95% T-180 density on each lift above the shading material and submit certified compaction report for each lift accomplished within the road prism. Lifts greater than one foot thick will be tested every foot. Backfill of such excavations shall precede approximately level across the entire excavation.
3. Replace Base and Surface materials as described in the Paved Area, Longitudinal Trenches section. Cold mix may be used as a temporary patch in paved roads until hot mix can be installed.

### **Within Primitive or Non-Maintained County Roads**

1. Trenches and individual excavations within primitive or non-maintained county roads will be in accordance with the above, or as agreed in advance by the Engineer and the *Permit Holder*.

### **Requirements Outside the Roadway Prism**

1. Trenches located in area from ditch bottom to outside right-of-way line shall be compacted to 90% but with no compaction reporting required. However, Navajo County reserves the right to have *Permit Holder* submit compaction test report(s) on suspect trench compaction anywhere within the right-of-way.

### **Additional Requirements**

1. Trenches located within five (5) feet of the downstream end of cross-road culverts shall be compacted to 100% in 12" lifts, 15 feet each side of CMP and the surface protected with at least a 9 inch thickness of rip-rap (D50 = 6 inches) on an appropriate geotextile 5 feet perpendicular on each side of culvert opening by five feet (5') away from the opening. As an alternative, slurry may be used in the trench five feet either side of the culvert.
2. Ditches and fill slopes shall be brought to finished grade with select native materials and compacted.
3. Shading material shall be a minimum of 6 inches over utility line piping, or as specified by the utility, whichever is greater. When a utility line is in the road prism outside of the surfaced area, and bury is less than 36 inches, a concrete cap or slurry will be required



up to the surface elevation until the bury depth is back to 36 inches under the existing road surface.

4. Utility lines shall have at least 36 inches cover under all surfaces within the right-of-way in conformance with the agreements reached among the members of the Navajo County Utility Coordination Committee, unless excavation is in rock and slurry or concrete protective cap is used. Concrete or slurry shall be continuous in the area where there is less than 36 inches cover or such other extra protection as is previously approved by the Engineer shall be provided. In no case will a utility line have less than 24 inches of cover. The Engineer may require additional cover or depth of bury when anticipated or potential road or drainage improvements indicate the need for greater depth.

### Restoration

1. *Permit Holder* shall video the entire length of the project before starting work. This should be done in coordination with the Inspector. Video shall clearly identify roadway features, including, but not necessarily limited to, condition of surface, culverts, signs. Special attention should be given to any existing damage or deterioration. This video shall be available to Inspector at the time of the final inspection.
2. All driveways and culverts shall be replaced to their original condition or better. Culvert pipes removed for utility installation shall be replaced with new 18" diameter pipe unless Navajo County approves a different size in writing. Navajo County may, at its option, furnish 18" diameter or equivalent culvert pipe to replace existing undersize culverts at the time the existing pipe is removed and also may restore all or portions of the drainage system with its own crews.
3. Street signs, traffic signs, delineator posts, mail boxes, etc., removed for construction purposes shall be re-installed by the *Contractor* in their same location. Those posts/signs damaged during their removal or by *Contractor's* operations shall be replaced with new posts/signs at no cost to Navajo County. If the *Contractor* cannot, for any reason, reinstall signs in their precise same location, Navajo County will reinstall the sign at *Permit Holder's* expense.
4. Cleanup and restoration shall follow construction activities as soon as possible after the primary construction is complete. The Engineer reserves the right to limit the elapsed time and/or distance between the actual construction work and cleanup/restoration when conditions warrant.



5. At no time shall the *Contractor* have more than two acres of disturbed area, nor shall cleanup and restoration be delayed longer than one month or lag sufficiently behind the primary construction to cause restoration to be performed in the following year. (An area one mile long by sixteen feet wide is two acres.)
6. Restore all existing ditches to their original location and condition. Ensure they provide the same flow characteristics as existed prior to the construction. Damaged culverts shall be straightened or replaced as necessary, regardless of the cause or origin of the damage.
7. Cuts in pavement shall be patched to match existing or with cold mix as soon as possible. Cold mix may be used for temporary patches only, which shall be excavated and replaced with hot mix prior to the completion of the job. Exceptions to this may be authorized when the existing pavement is road mix or cold mix. Saw cutting the "Tee-top" should be delayed until the cuts are prepared for final patching. Hot mix asphalt shall be used for all permanent pavement restoration using a mix which has been approved in advance by the Engineer.
8. Pavement replacement shall be to the same standards as new or overlay pavement construction on county roads, including, but not limited to, the requirements for submitting a mix design for approval, weather limitations on pavement placement, and construction methods, equipment, and tolerances. All pavement replacement shall be true to line and grade, and shall not deviate more than 0.01' from the approved profile, nor more than one-eighth inch from a ten-foot straight edge. The crown (cross-slope) shall be 2% or shall match the adjacent pavement unless otherwise approved by the Engineer.
9. Asphalt replacement shall be with a locally available hot-mix asphaltic (HMA) concrete produced in compliance with ADOT Section 406, 409, or 416, or Navajo County specifications. Mix may be an off-the-shelf or stock mix design. For larger jobs, *Permit Holder* shall submit mix design for Navajo County approval prior to first using the mix on the job. *Permit Holder* may obtain the HMA from any supplier or multiple suppliers, but shall not use more than one supplier for any contiguous work.
10. When work is along the edge of paved roads within the shoulder or fore slope and the pavement is cut, broken off, etc., in the course of the work, the remaining pavement edge shall be saw cut 2 feet from the damaged area and removed, the exposed aggregate base compacted to 100%, and hot mix installed to meet the existing pavement edge and thickness. Length of the cut shall be at least five feet (5 ft.) each side past the affected area.



11. Pavements with chip seals will have new chip seal placed by Navajo County following completion of the permit work. Costs of chip seal replacement shall be borne on a sliding scale basis dependent upon the age of the chip seal and the extent of the disruption of the surface.
12. Return work area to a clean, smooth grade in original condition or better. Fences, light fixtures, shrubbery, and other vertical landscaping materials that may pose a hazard to traffic or maintenance operations within the road right-of-way will not be replaced without prior written approval from the Engineer.
13. Roadway surface shall be restored to equal or better condition than that existing prior to the construction, without a dip or bump at the patched section.
14. Marker posts shall be installed as per utility specification. Utility marker posts shall be off-set when their required location is in or near the bottom of any drainage ditch. Such posts shall be marked with the off-set distance to actual pipe location. Marker post locations are subject to county approval.
15. Restoration of undeveloped, unmaintained, or primitive roads shall be in accordance with the specific requirements which shall be established at the time the permit is issued.
16. Shoulders and roadside ditches shall be restored with a road grader prior to final acceptance and permit closure. Ditch shaping with a backhoe or loader bucket is not sufficient for final restoration.
17. In certain cases, Navajo County may, at its sole option, restore ditches, driveway culverts, and/or shoulders with its own personnel and equipment when it is deemed in the best interest of the public. This does not relieve the *Permit Holder* from any requirements for trench restoration or from the responsibility for repairs if the permitted work fails.
18. Navajo County may, at its sole option, require the restoration of certain paved or high traffic roads on an accelerated schedule separate from other parts of the same project, may limit the time that a specific road may be obstructed or closed, and may require the work be terminated and surfaces restored prior to holidays or other high traffic periods.
19. Pavement replacement shall be to the same standards as new or overlay pavement construction on county roads, including, but not limited to, the requirements for submitting a mix design for approval, weather limitations on pavement placement, and construction methods, equipment, and tolerances. All pavement replacement shall be true to line and grade, and shall not deviate more than 0.01' from the approved profile, nor more than one-eighth inch from a ten-foot straight edge. The crown (cross-slope)





shall be 2% or shall match the adjacent pavement unless otherwise approved by the Engineer.

20. Testing is not generally required for small jobs, such as isolated service line crossings, but Navajo County reserves the right to require testing for specifications compliance on larger jobs and whenever conditions warrant. Testing of asphalt materials includes, but may not be limited to, gradation verification of the cold- or hot-feed aggregate, extractions to determine actual oil content, field density measurements, and coring of the finished work to verify thickness and material properties. See Appendix A.
21. The minimum pavement replacement width for transverse trenches or longitudinal trenches in the interior of a pavement section is 3 ft. Patches along the edge of a lane shall be at least 3 ft. wide. Patches shall not occur within 3 feet of a pavement edge or joint, in a visible wheel path, or at a marked "Stop-bar" at an intersection. In such cases, the additional pavement shall be removed and the entire area patched as one unit at the *Permit Holder's* expense.
22. All longitudinal patches and transverse patches eight feet or wider shall be placed with a paving machine unless otherwise approved in advance by the Engineer.
23. All gouges, scrapes, cuts, and/or cracks in the paved surface shall be repaired by the method approved in advance by the Engineer. Any such damage greater than ½" deep, or 1" wide shall be repaired by saw cutting around the area to a minimum dimension of 3', removing the damaged pavement, applying a tack material (ADOT 404) to the edges, and placing and compacting an HMA patch.