RIGHT-OF-WAY OPERATIONS MANUAL

Chapter Forty-Three Utility Occupancy on Highway Right-Of-Way

May 2025

MONTANA MDT DEPARTMENT OF TRANSPORTATION

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The following guidelines are for use by the Department and Districts in regulating utility or utility-like facilities that are proposed to occupy highway right-of-way. Utility companies and non-utility companies can use this document as guidance when proposing to use the highway right-of-way. These guidelines are supplemental to the Utility Occupancy Regulations contained in the ***Administrative Rules of Montana*** 18.7.201 through 18.7.232. In case of conflict between the ***Administrative Rules of Montana*** and these guidelines, the ***Administrative Rules of Montana*** shall take precedence.

For these guidelines, Utility Occupancy Permits, Utility Encroachment Permits, Common Use Agreements and Notification Permits, and other permits will be referred to as "Utility Permits."

Guideline Use:

The guidelines are to be used for the permitting of Utilities in the existing highway right-of-way, and for utility relocations for highway construction projects.

DEFINITION OF A UTILITY

MCA Sections 69-3-101, 69-13-101, 35-18-101 through 35-18-503, define a utility. In addition, several legal opinions and Public Service Commission rulings have further expanded the number of public utilities. When there is a question whether a facility is a public utility, request a legal opinion through the Utilities Section.

43-1 UTILITY PERMIT APPLICATION PROCESS

The electronic application is located on the department's website at http://mdtupas.com/ An applicant must apply for a utility permit through the department's Utility Permitting Administration System (UPAS), for the installation or repair of any utility facility in the Right-of-Way under the jurisdiction of the department.

MDT may require and provide construction oversight for any non-interstate project installations. MDT may utilize internal staff and/or 3rd party consultants to provide construction oversight and inspections. MDT will determine the need for additional non-interstate construction oversight on a case-by-case basis based on project size, complexity, and risk. The Facility Owner will be responsible for reimbursing MDT for agreed upon construction inspections.

43-1.1 Occupancy Permit

Some of the most common conditions for which permits are required prior to occupancy of highway right-of-way are:

- New installations of utilities.
- Major modification to existing facilities.
- A change in transmitting or an increase in operating pressure above that was originally approved by the Department.

- Any change in type, function, or physical location of a facility; and

- Aerial service connections, accessory equipment or wire substitution or addition to existing poles or to supporting structures located within any portion of the Right of Way.

43-1.2 Utility Encroachment Permit

- non-utility facilities.

- utility facilities where the following applies:

  - ✓ A utility requests to occupy an area of the right-of-way other than the outer edge for theconvenience of the utility.

  - ✓ If a utility does not install a facility in accordance with the conditions of the permit issued.A utility encroachment permit can be issued instead of requiring the utility to relocate the facility. (e.g., a utility placed a facility 10 ft from the R/W line where the permitrequired placement 5 ft from the R/W line).

  - ✓ Occupancy of highway right-of-way by a non-utility.

  - ✓ Locked gates installed in an Interstate highway access control fence.

  - ✓ Proposed new railroad track across a roadway where the railroad company does notown the right-of-way.

43-1.3 Common Use Agreement

Common Use Agreement is when:

- A utility facility holds an easement or other instrument, and the Department purchases the right-of-way over the utility easement area.

- The utility is essentially relocated within the same utility easement area for a highway construction project.

- The utility is not relocated and will occupy the same utility easement area for a highwayconstruction project.

- The Common Use Agreement is completed by the applicant and submitted to the districtfor processing. The district must submit a Common Use Agreement to the Utilities Section for processing.

43-1.4 Notification Permits

- Normal maintenance operations to keep an existing facility in repair without adding to its physical makeup or changing its functional capacity. The owner must notify the district prior to performing normal maintenance. In case of an emergency, the district must be notified after the emergency repair is made.

- Substituting wires that do not increase capacity.

- Installing additional capacity in existing conduit systems does not change the nature or operational conditions of the original facility. An application for a permit must be submitted when installing cable TV facilities within an existing telephone conduit.

- Replacing a pole in the same location of a pole removed for maintenance purposes.

43-1.5 Utility Installations on Future Construction Projects

When a utility company requests to occupy existing highway right-of-way with its facilities where a future construction project is proposed, no consideration should be given for the future highway construction project unless construction limits and the right-of-way are designed. Where construction limits and right-of-way are not designed the utility should be issued the appropriate permit. Where the construction limits and right-of-way are defined, the utility should be issued an Occupancy Permit and advised to design and install the facility free from conflict.

43-1.6 Non-Use

The guidelines and permits are not to be used when the proposed occupancy is on Department-owned property, which is not highway right-of-way, such as excess property or a maintenance yard. In these cases of proposed occupancy, consult the Right-of-Way Real Estate Services Section.

43-1.7 Public Properties, Tribal Lands, and Railroad Easements

Where a utility proposes to locate its facility within highway right-of-way that is owned by the U.S. Forest Service, U.S. Bureau of Land Management or Tribal Landowners, the utility must submit a Utility permit application to the MDT District Office and contact the owner of property to make applications for right-of-way permits. State Lands granted the Montana Department of Transportation the right to issue permits where the Department's highway right-of-way is on State Lands by easement.

Where the Department occupies right-of-way by easement from a private property owner or a railroad, it is the applicant's responsibility to determine ownership type and obtain additional permits along the proposed route from the fee owner.

43-1.8 Structure Attachment Permit:

A Structure Attachment Permit (Form 974) is used for the attachment to a highway bridge. All structure attachment permits must be approved by the Bridge Bureau.

Note: Form 974 should only be issued for the structure attachment. A Utility permit is issued for utility installation at the approaches to the structure.

43-2 ENVIROMENTAL CHECKLIST REQUIREMENTS

A completed environmental checklist must accompany each Occupancy, Utility Encroachment or Common use permit issued. The environmental check list is notrequired for Notification permits or utility relocations for highway projects.

The applicant is responsible for completing the checklist, obtaining all applicable permits/occupancy agreements, and adhering to the conditions of the environmental checklist and applicable laws. When the applicant checks a "yes," the mitigationmeasures proposed must be attached to the checklist. In these cases, the applicant should be made aware that there would be a delay in processing the permit.

The utility agent is responsible for reviewing the checklist for completeness. When the utility agent is aware of a possible impact in connection with a proposed installation on highway right-of-way, the permit, environmental checklist, and an explanation of the possible impact must be submitted to Systems Impact. If the utility agent becomes aware of a potential environmental impact during the installation of a facility, the applicant should cease work and Environmental Services should be contacted.

MDT Planning Division must review and approve the environmental checklist which must accompany a Permit that may result in significant and permanent impacts to the transportation network in terms of substantial increases in traffic volumes, weight or delays on State roadways (e.g., major mines greater than 5 acres, railroad at-grade and above-grade crossings, strip mines, road relocations, major traffic generators such as a discount store or mall) or other impacts on other forms of transportation such as rail, transit or air movements.

If the applicant checks "yes" in any one box, the utility agent must:

- not approve the permit,
- not permit the utility to begin work, and
- Send the checklist and permit to Systems Impact for further action.

When Items 15 or 16 are checked on an environmental checklist for any permit, send a copy of the checklist and permit to the Planning Division for further action.

43-3 OCCURRENCES TO AVOID

Avoid the following:

1. Do not authorize draining a wetland either on to or off highway right-of-way.

2. Do not permit disturbance to an archaeological or historical site.

3. Do not permit the installation of overhead facilities through a scenic strip, overlooks, rest areas, recreational areas, or adjacent highway right-of-way to these areas.

4. Do not permit installation through a hazardous waste area.

5. Do not permit installation that may disturb a nesting area of an endangered species.

6. Do not permit an installation that is part of a much larger project including other State agencies.

7. Require a raptor proof design for overhead electrical installations.

43-4 DISCOVERY OF UNKNOWN HAZARDOUS MATERIALS

If the utility discovers hazardous material (e.g., asbestos, PCB's, petroleum, PCP's, hazardous waste, or radioactive material) the existence or location of which was previously unknown to the Department and the utility must immediately stop work in that area and immediately notify the District Administrator.

43-5 APPROVAL PROCESS

The applicant must submit the appropriate permit, environmental checklist, and a plan view (preferably on highway plans) of the proposed occupancy to the respective District Office.

The plan must show the following:

- the type of installation (e.g., 200 pair telephone).
- distances from the centerline and distances to the right-of-way line.
- stations and mileposts/reference markers; and
- Distance from existing utilities.

If the installation is not started within 1 year after the permit is issued, the applicant is required to submit another permit for approval.
The Department should act on the permit within 30 days of receiving it.

43-6 DENIAL OF A PERMIT/AGREEMENT

Denial of a permit should be based on sound engineering judgment and the guidance of the ***Administrative Rules of Montana*** or these guidelines. The applicant should have an opportunity to re-submit the application after making the required corrections.

43-7 INSTALLATION OF ABOVEGROUND FACILITIES

A public utility can install an aboveground facility within the highway right-of-way if the facility does not incommode or endanger the public in the use of the roadway andthe facility does not hinder maintenance of the roadway. These facilities can include cabinets, huts, poles, closures, etc.

As a rule, the Department's position is that a utility has a right to place aboveground facilities within highway right-of-way; however, the Department has the right to determine where the facilities can be placed.

The installation of aboveground facilities of a non-utility is at the discretion of the district but should be avoided.

43-8 ENCASEMENTS

The Department does not usually require encasements of utility facilities under the roadway. The following are installations where encasements should be considered:

- protection for carrier pipe from external loads or shock, either during or after construction of the highway.
- As a means of conveying leaking fluids away from the area directly beneath the traveled way to a point of venting. (The utility company shall immediately repair the leak and clean up the affected area.).
- less than the minimum required depth.
- near footings of bridges or another highway structures.
- across unstable or subsiding ground.
- pressurized carrier pipes (Encasement of waterlines is generally not required.); and

- Carriers of transmittants, which are flammable, corrosive, expansive, energized, or unstable, particularly if carried at high pressure.

- When entering right of way and crossing the roadway and then exiting the right of way, encasement should be considered from right of way to right of way.

43-9 OCCUPANCY OF NON-STATE MAINTAINED SECONDARY ROAD R/W

The permitting requirements for county-maintained secondary roads are the responsibility of the county. The counties should be urged to adopt and abide by the Department standards for utility and non-utility installations.

43-10 OCCUPANCY BY A NON-UTILITY

Longitudinal occupancy of any right-of-way by non-utility is by encroachment permit only.

Cable television facilities and unregulated underground telecommunications facilities, because they perform a public service, may be allowed to occupy highway right-of-way longitudinally under an encroachment permit. Above-ground unregulated telecommunications facilities can occupy highway right-of-way. When occupancy is permitted, these facilities must meet all the conditions required for utility occupancy, including placement and traffic control.

All other conditions of the guidelines are applicable to non-utility occupancy.

43-11 OCCUPANCY OF LIMITED ACCESS FACILITIES

Utilities and non-utilities can occupy limited access right-of-way in the same manner as a secondary or primary right-of-way.

43-12 CLEAR RECOVERY AREA

Clear recovery area is defined as a minimum of 42 ft from centerline on unpavedroads, and 30 ft from the outer edge of the outside traveled lane on paved roads,or the clear zone, whichever is greater.

43-13 RAPTOR-PROOFING

All electrical overhead installations located within highway right-of-way shall be raptor-proofed. Environmental Services must approve exceptions for facilities located in urban areas. A raptor design must accompany the permit. The utility, not the Department, determines design for adequate raptor proofing.

43-14 OVERHEAD CROSSINGS OF A FULL-CONTROLLED ACCESS FACILITY (INTERSTATE)

Overhead crossings of Interstates should meet the following:

1. Crossings should be at right angles to the roadway.

2. Crossings should have a minimum clearance of 21 ft over the roadway.

3. No pole guys, etc., can be installed within the controlled access right-of-way unless the Utilities Section of the Right-of-Way Bureau secures approval from the FHWA.

4. Aerial power or communication lines will not be permitted to cross over bridges where it is possible to avoid such installations. Where an aerial facility is permitted near a structure, a minimum vertical clearance of 25 ft will be maintained from the top of the bridge rail. A horizontal clearance of 25 ft will be maintained from the neat lines of the structures.

43-15 OVERHEAD INSTALLATIONS-LONGITUDINAL (NON-INTERSTATE)

43-15.1 Rural

1. All overhead installations should be installed on the right-of-way line.

2. All aboveground fixed objects, including down guys, should be installed outside of the clear recovery area, unless the following occurs:

   - They are installed behind guardrail or other protective devices. Minimum installation distance behind guardrail refers to MDT detailed drawings . A greater separation may be required for deflection; and

   - They are installed in a location where a vehicle cannot reach the facility, such as on a cut slope.

The District Administrator can grant exceptions to the clear recovery area for small sections of line. Some examples are as follows:

- for small segments of aboveground installations which would cause misalignment of a pole line, and/or
- To avoid excessive tree cutting.

43-15.2 Urban

Overhead facilities should be installed at the outer edge of the right-of-way, behind the sidewalk, or a minimum of 2 ft behind the face of the curb.

43-16 OVERHEAD CROSSINGS (NON-INTERSTATE)

1. Crossing should have a minimum clearance of 21 ft.

2. Crossings should be at right angles to the roadway.

3. Aerial power or communication lines will not be permitted to cross over bridges where it is possible to avoid such installations. Where an aerial facility is permitted near a structure, a minimum vertical clearance of 25 ft will be maintained from the top of the bridge rail. A horizontal clearance of 25 ft will be maintained from the neat lines of the structures.

NOTE: Overhead crossings installed because of a construction project, whether power or communication should have a minimum clearance of 21 ft.

OPEN TRENCH ROADWAY CROSSINGS (FOR ROADWAYS OTHER THAN THE INTERSTATE SYSTEM)

Open cut of a roadway is permitted only when it is demonstrated to the district's satisfaction that pushing or boring is impracticable. The following are some of the requirements:

1. The open trench shall be filled, compacted and traversable by traffic before the end of the work shift unless approved by the District Administrator**.**

2. The district must approve a traffic control plan prior to work.

3. The district is notified 48 hours in advance of work and a 12-hour notificationis given if this date is changed.

4. Prior to removal, the asphalt shall be square cut at least 1 ft beyond theedge of the trench.

5. Square cutting of the asphalt may be necessary a second time if the asphalt is undercut or damaged by the installation.

6. Sidewalks are to be sawed from joint to joint.

7. The utility company shall store the excavated material so as not to interfere with traffic (clear zone), approaches, side streets or fire hydrants.

8. All backfills shall meet the following requirements except when other methods are specified for certain types of installations such as non-shrink backfill:

    a. Backfill material shall not contain sticks, sod, or deleterious material.

    b. Backfill material shall be placed in maximum 6-inch loose thicknesslayers and compacted. All backfill material will be compacted.

9. Each layer of material shall be compacted using the quantity of water required to reach a minimum of 95% density of the material being compacted.

10. The Department may take soil density tests or require the utility to provide testing (at the utility; expense) and furnish the district the results.

11. Non-shrink backfill may be required in place of conventional compacted backfill.

12. The replacement surfacing shall have the same thickness and strength as the surfacing removed, but not less than 4 inches of asphalt and 8 inches of 1½ inch diameter gravel. The gravel course can be waived when non-shrink backfill is used.

13. The gravel shall have optimum moisture and compacted to 95% proctor density or to the satisfaction of the Department.

14. The asphalt hot mix shall be placed and compacted to match the existing pavement grade to leave no noticeable dip or depression. Areas under trafficwill be paved the same day that they are excavated, except for special cases approved by the district.

15. The Department has the right to require seal coating to restore original surface conditions.

16. A tack coat should be applied to all edges of the existing asphalt prior to patching and between lifts of asphalt.

17. The asphalt shall be replaced as soon as possible. When weather conditions do not permit, cold mix can be used and replaced with hot asphalt when available.

18. The permittee will be responsible for maintenance of the patch for 1 year from the installation date. If the permittee does not perform the repair within 30 days of notification, the Department may make the repair and charge the permittee.

43-17 NON-SHRINK BACKFILL

Non-shrink backfill may be required in place of conventional backfill methods. The placement of the material should:

- be poured to the surface,
- allowed to set a minimum of 3 hours curing time prior to allowing traffic,
- have 4 inches removed prior to patching,
- be of a consistency to fill the voids without excess water, and
- Requires no tamping or vibrating.

Figure A presents the non-shrink patching formula.

43-17.1 Non-Shrink Patching Formula

Figure A

Ingredients	US Customary lbs./yd^3
Cement – 0.45 sack	42
Water – 148 L (39 gallons) *	325
Air (entrapped)	
1.5% Coarse Aggregate 25 mm (1 in) max. – size 57	1700
Sand (ASTM C-33)	1845
TOTAL	3912

*Note: Start with 30 gallons of water or less and add more if necessary.

43-18 BORED, PUSHED OR TRENCHLESS TECHNOLOGY CROSSINGS

Crossings should meet the following:

1. All crossings should be 42 inches below the ditch line.
2. Boring pits should be a minimum of 10 ft from the shoulder.
3. Crossings should be at right angles to the roadway.

Heavier gauge/strength pipe should be considered for uncased petroleum products pipelines and high-pressure natural gas lines at highway crossings.

Consideration should be given to providing encasement for carriers of transmittants that are flammable, corrosive, expansive, energized, or unstable substances.

43-19 LONGITUDINAL INSTALLATION OF UNDERGROUND FACILITIES

43-19.1 Rural

No facility shall be placed under the asphalt without the approval of the District Administrator. Consider the following:

1. All facilities should be placed near the right-of-way line.

2. The first facility should be placed within 5 ft of the right-of-way line.

3. Additional facilities should have no more than a 4 ft separation.

4. All above-ground facilities (e.g., vent pipes, closures) should be placed on the right-of-way.

Any facility that cannot be detected from above ground should have a tracing wire on or near the facility.

If there are extraordinary circumstances (e.g., such as a cliff, river, or heavily wooded area) a facility may be placed between the right-of-way and the roadway shoulder for short distances.

The district may require the following:

- extra depth,
- the installation be placed in conduit,
- aboveground marking where the facility angles toward and leaves the shoulder, and/or
- A concrete cap.

Where it is possible to place the facility near the right-of-way and the utility requests to place the facility closer to the shoulder, a Utility Encroachment Permit should be issued.

Where it is impossible or impracticable to place a facility near the right-of-way and the utility must be located nearer the roadway shoulder, and Utility Occupancy Permit should be issued.

43-19.2 Urban

The facility should be placed on the backside of the sidewalk or curb where possible.

Where the facility is installed in the street or roadway, it should:

- Be placed in conduit.
- Be a minimum of 36 inches deep.
- Manholes and valve boxes should be located outside of the wheel path.
- Manholes should be placed where entrance to the manhole for maintenance will not obstruct traffic.

43-20 FIBER OPTIC CABLE

Fiber optic cable should be buried according to the following:

1. It should be placed within 5 ft of the right-of-way, regardless of the other undergroundfacilities in place, unless authorized by the District Administrator.
2. It should be placed 42 inches deep unless the district waives the provision.
3. Must have a warning tape 18 inches above the cable.
4. Aboveground markings should be at least 500 ft intervals and at all crossings.

43-21 NATURAL GAS, ELECTRICAL AND COMMUNICATION INSTALLATIONS

Natural gas, electrical and communication installations should be placed at a minimum of 36 inches deep. For location, see urban and rural installations.

43-22 WATER AND SANITARY SEWER INSTALLATIONS

Water and sanitary sewer installations should meet the following:

1. They should meet the current ***Montana Public Works Standard Specifications*** for water and sanitary sewer installation.
2. Water pipes should be installed deep enough to avoid freezing problems under the roadway.
3. Hydrants should be installed at a minimum of 2 ft behind the face of the curb. See ***Montana Public Works Standard Specifications*** Standard Drawing No. 02718-3 if sidewalks are present.
4. Valve boxes should be located outside of the wheel path. For location, see urban and rural installations.

43-23 PETROLEUM PRODUCTS AND HIGH-PRESSURE PIPELINES

The installation of petroleum and high-pressure pipelines should meet the following:

1. They should be placed 36 inches deep unless the district waives the provision.
2. Aboveground markings should be placed at least 500 ft intervals and at all crossings.
3. Vent pipes must be located at the right-of-way line.

43-24 WIRELESS (SMALL CELL)

The installation of wireless communication facilities must meet the following:

43-24.1 Infrastructure Design and Height Requirements

- A site plan must be submitted showing Latitude and Longitude (6 decimal degrees) for each wireless facility's proposed collation or new installations. Aerial maps are required showing the location of the proposed wireless facility.
- New poles or structures for wireless facilities may be approved if the applicant establishes the proposed wireless facility cannot be located on an existing utility pole, structure, or light pole in the area.
- Any replacement pole or new pole must substantially conform to the design of the pole it is replacing or the neighboring pole design standards utilized within the contiguous right-of-way.
- The wireless facility color must match the existing pole color to blend with the color of the pole to the extent possible.
- Wireless facility poles must be a minimum of 300 feet apart.
- Utility vaults and equipment associated with a wireless facility must be underground to the maximum extent possible.
- A wireless facility which includes an antenna must not be more than three 3 cubic feet in volume.
- A new or modified utility pole with a collocated wireless facility may not exceed 50 feet total above ground level.
- An antenna of a small wireless facility may not extend more than 10% of the existing height of the support structure.

- A proposed projecting attachment to a pole must provide a minimum vertical clearance of ten feet from the ground level. If an attachment projects along or over curb or edge of road towards the roadside, the attachment must provide a minimum vertical clearance of 16 feet and maintain adherence to the current PROWAG guidelines.

43-24.2 Attachment to Existing Poles or Structures

- Written permission must be obtained from the pole or structure owner unless the owner and the Utility Permit applicant are the same person or entity.

- Evaluation is required by a licensed professional engineer (PE) certifying the existing infrastructure pole or structure for structural stability; and the capacity to carry the proposed wireless facility.

- If the existing pole or structure is insufficient and replacement is necessary, the utility owner must provide engineering design and specification drawings for the existing pole or structure replacement for MDT review and approval. Pole or structure replacement is at utility owner's sole cost. If the pole or structure is to be replaced is the property of the State, then any replacement becomes the propertyof the State.

- Scaled drawings must show dimensions of the proposed attachment of the wireless facility to the existing poles or structures. Drawings must include the spacing from existing curb, driveways, sidewalk, and other existing poles or structures.

- Scaled construction plans must indicate the current right-of-way line and show the dimensions of the proposed underground vault, conduit, and equipment. Solar energy equipment must show the placement, tilt, and orientation. All construction plans must be reviewed and approved by the Department. The wireless facility must be placed within five feet of the right-of-way line. The attachment method must conform to engineering standards for preserving the highway, its safe operation, maintenance, and appearance.

- Antennas and the associated equipment enclosures (including disconnect switches and other appurtenant devices) must be fully concealed within the pole. If concealment is technically infeasible, or incompatible with pole design, the antennas and associated equipment enclosures must be camouflaged to appear as an integral part of the pole and flush-mounted to the pole.

- Any facilities located off-pole must be installed in an enclosed structure underground, except for the electric meter pedestal. Facilities may not block or alter any drainage flows. Skirts or shrouds must be used on the sides and bottoms of antennas to conceal mounting hardware, create a cleaner appearance, and minimize the visual impact of the antennas. Exposed cabling/wiring are prohibited.

- All equipment must be located to meet the Public Rights-of-Way Accessibility Guidelines (PROWAG) requirements and must not obstruct, impede, or hinder usual pedestrian or vehicular travel or interfere with the operation and maintenance of signal lights, signage, streetlights, street furniture, fire hydrants, or business district maintenance.

- Wireless facilities must not: interfere with the safe operation of traffic control equipment; interfere with a sight line or a clear zone for transportation or pedestrians; fail to comply with Federal, FCC RF regulations, State or local laws or legal obligations; create a public health or safety hazard; or obstruct or hinder the usual travel or public safety of the right-of-way.

- Attachment to traffic signal poles is prohibited.

- Attachment to bridges and other highway structures is prohibited unless a non-structure location creates undue hardship for the installation of the facility, as determined by MDT. If an exception is allowed, a Structure Attachment Permit (Form 974) must be used, which must be approved by MDT's Bridge Bureau.

43.24.3 Local Government Regulation:

- Facility owner must also adhere to all local government regulations for wirelessfacilities located within the local government's jurisdictional area if those regulations are more stringent than those outlined in this section.

- Facility owner must obtain advance written approval from the local authority before collocating wireless facility or installing wireless facility support poles in a lighting district or historic district.

43.24.4 Fiber Connection

- The facility owner is responsible for obtaining access and connection to fiber opticlines or other backhaul solutions that may be required for its wireless facility support poles or wireless facility.

- Fiber must be placed 42 inches deep unless MDT waives the provision.

- Fiber must have a warning tape 18 inches above the cable.

43-24.5 Generator and Power Service

- The facility owner must not install generators or back-up generators in the right-of-way.

- The facility owner is responsible for obtaining any required electrical power service tothe wireless facility.

- Electrical installations must be placed at a minimum of 42 inches deep. For location, see Longitudinal Installation of Underground facilities, Rural and Urban, in this Manual.

43-24.6 Signage

- The facility owner must post its name, location identifying information, and emergencytelephone number in an area on the cabinet of the wireless facility that is visible to the public on a sign which must not exceed 4" x 6," unless otherwise required by law.

- Facility owner must not post any other signage or advertising on the wirelessfacility, pole, or structure to which it is attached.

43-25 AS-BUILTS

- The applicant will submit an as-built survey to MDT through the UPAS system in accordance with the MDT survey manual and the ARM Rule 18.7.207 Electronic Utility Permit Application Process within 90 days after the completion of the utility installation. All borings are required to have the entry and exit points surveyed along with 10' regular intervals noting the actual depth of the installed utility for the entire length of the bore. For non-bored straight alignments, survey points spacing shall be at 50' intervals and 25' intervals for curved segments.

- As-built records shall be produced that describe the facility, usage, size, configuration, material, and coordinates X, Y, and Z (elevation of facility) at time of installationand any special features such as encasement.

43-25.1 Urban

- ASCE As-built requirements of positional accuracy level 3 are required for X, Y(Easting, Northing) and a positional accuracy level 4 applies for Z in all Urbanboundary designated areas. https://www.mdt.mt.gov/travinfo/maps/urban_maps.shtml for Functional Classification Maps)

43-25.2 Rural

- The minimum requirements for Rural designated areas are ASCE positional accuracyof Level 5 for X, Y and Z.

- MDT reserves the right at their discretion to change the positional accuracy level.

Positional Accuracy Level	Positional Accuracy[1] (English Units)
1	0.1 feet
2	0.2 feet
3	0.3 feet
4	1 foot
5	3 feet
0	Indeterminate

43-26 TRAFFIC CONTROL AND SAFETY

The ***Manual on Uniform Traffic Control Devices*** contains the national standards for work zone traffic control.

For unusual operations, such as an open-cut crossing, the district should approve a traffic control plan.

All material stored on highway right-of-way should be located outside of the clear recovery area, or a minimum of 30 ft from the outside edge of the outer driving lane, or theclear zone, whichever is greater.

All equipment not in use should be located the same distance from the roadway.
Open trenches within the clear zone must be either covered or protected at the end of the work shift. Open trenches in populated areas must be protected with a temporary fence or other barriers.

Trench spoils should be placed far enough from the driving lane, leveled, or protected so that it is not a hazard.

Equipment working near the roadway should have visible amber flashing lights.

All workers within the right-of-way of a Federal-aid highway who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment shall wear high-visibility class 2 or 3 safety apparel. For nighttime activity, the flagger shall wear class 3 safety apparel.

The Permittee should provide flaggers who are currently certified by the Montana flagger trainingprogram; the ATSSA flagger program; or the Idaho, Oregon, or Washington State flaggertraining programs.

43-27 CLEANUP AND RESTORATION

The cleanup of the installation shall be in original-like condition.

43-28 DRAINAGE / STOCKPASS STRUCTURES

The following will apply:

1. No facility may be installed in a drainage culvert.

2. Stock pass/grade separation structures can be used for roadway crossings by utility facilities.

43-29 BLASTING

The following will apply:

1. Blasting is prohibited unless approved by the District Administrator.

2. Blasting is prohibited around highway structure footings.

43-30 HERBICIDES

The use of chemicals to control foliage is prohibited without the approval of the district.

The utility must submit to the county weed board a written two year weed management plan specifying the methods to be used to accomplish revegetation at least 15 days prior to the activity. The plan must describe the time and method of seeding, fertilization practices, recommended plant species, use of weed-free seed, and the weed management procedures to be used.

The plan is subject to approval by the board, which may require revisions to bring the revegetation plan into compliance with the district weed management plan. The activity for which the notice is given may not occur until the plan is approved by the board and signedby the presiding officer of the board and by the person or a representative of the agency responsible for the action. The signed plan constitutes a binding agreement between theboard and the person or agency. The plan must be approved, with revisions, if necessary,within 10 days of receipt by the board.

Reference: MCA 7-22-2152. Revegetation of rights-of-way and areas that have potential for noxious weed infestation.

43-31 ATTACHMENT TO HIGHWAY STRUCTURES

The law does not prohibit the attachments of utilities to MDT structures, but the policy of MDT is to discourage these attachments to protect the appearance, integrity, and functional purpose of the structures. MDT discourages these attachments because the relocation of the attachments has been historically problematic when it comes to carrying out highway projects. MDT also has concerns with attachments damaging the integrity of the bridge or impacting MDT's ability to inspect and maintain the structure.

Where it is feasible and reasonable to locate utility facilities elsewhere, attachment to highway structures will not be allowed. Where other/alternative locations create undue hardship for the installation of the facility, consideration will be given to attaching the utility facility to a highway structure. It is the responsibility of the permit applicant to demonstrate undue hardship. The following noncomprehensive list of items is considered demonstrative of undue hardship. The existence of undue hardship will be evaluated on a case-by-case basis.

Boring

- Written statements from a minimum of two (2) Boring Companies that boring the site is not feasible or is of unusually substantial risk. Reasons for the infeasibility and/or risk must be included.

Aerial

- Documented inability or exceptional limitations on the ability to install aerial facility.
- Aerial installation is prohibited by other policies or regulations.

Weighted cable

- Documented inability or exceptional limitations on the ability to install weighted line (submarine) conduit.

Alternative Route

- Written statement(s) from entities denying permission to utilize their corridor (i.e. County, Railroad, Power Company, etc.), along with reasons for denial.

Any alternative solutions

- Documented statements from landowners that they are rejecting any and all proposals for easements and/or property access for alternative installations (i.e. aerial, boring, etc.). If landowners refuse to provide such statements, the permit applicant may supply documentation of efforts to coordinate with landowner(s) and their refusal to coordinate.
- Documentation or written statement from permit Agency (i.e. USCOE, DNRC, etc.) denying permit.
- Documented justification that uses of alternative solution(s) causes significant project delay (more than 12 months).
- Documented justification that uses of alternative solution(s) causes significant project cost increase (the lesser of 50% of the total project cost or $1,000,000).
- If MDT provides a suggestion for a potentially reasonable and feasible alternative, a written response to said suggestion is required.

If MDT approves the demonstration of undue hardship, the permit application is not considered approved. Rather, it advances to the next stage, structural review. The following structural review will apply to any structure attachment upon a finding of undue hardship:

- MDT will consider the load of the proposed utility to ensure it does not materially affect the load bearing capacity for roadway purposes.
- MDT requires engineering specifications from the facility owner of proposed equipment and facilities as part of the permit application to allow MDT staff to evaluate structural loads for attachments to state facilities; new standalone structures; impacts to pedestrian facilities and the State Right-of-Way.
- Electric power and communication facilities shall conform to MDT minimum installation standards, including vertical clearance and other considerations.
- If not load-prohibitive, then ensure that the mode of attachment does not compromise or otherwise damage the integrity of the bridge.
- Finally, ensure the proposed attachment does not obscure the bridge or the utility facility from being effectively inspected/maintained.

Upon approval of structural review, a permit will be granted, subject to any and all reasonable terms and conditions, including mitigation measures for removal of facility within required timelines in the case of structure repair or replacement.

<u>Temporary Attachment Option</u>

A temporary attachment to structures may be considered while the permit applicant fully develops the permanent non-structures-attachment location. Base conditions:

- Maximum two (2) years w/signed agreement.
- Documented alternative permanent relocation plan (may include partnership w/existing communications company).
- Develop approved and permitted mitigation plan for future bridge construction (may include partnership w/existing communications company).
- Subject to the same structural review as for permanent attachments (described above).

Attachments to highway structures are by encroachment permit. (The approach to the structure for a proposed utility attachment to a structure is either Utility Occupancy Agreement or a Utility Encroachment Permit).

Structure attachments shall be submitted on a Structure Attachment Permit (Form 974). Include sufficient detailed drawings to indicate the method of attachment, inside diameter, outside diameter, pipe weight per foot, working pressure, type of coating, substance carried, pipe material and any other information required in the structure attachment guidelines.

Pre-existing structure attachments are considered in compliance with these requirements. MDT will consider requests from facility owners who are seeking to replace an “in-kind” facilities provided the owner can demonstrate that they have completed the required annual inspections and have repaired any deficiencies in a timely manner. The owner shall maintain a record of the inspections for 3 years. Requests for betterments or additional facility installation require the facility owner to follow the standard process for requesting a new structure attachment.

If a Structure Attachment Permit does not currently permit the attachment, the owner shall submit an application for a permit and drawings to the appropriate District Office for approval under these rules within 6 months of the effective date of these rules.

43-31.1 Proposed Attachments to Existing Structures

Where it is feasible and reasonable to locate utility facilities elsewhere, attachment to highway structures will not be allowed. Where other locations create undue hardship for the installation of the facility, consideration will be given to attaching the utility facility to a highway structure. The following conditions will apply:

1. All utility facilities attached to structures shall be attached as provided in the rules unless written approval to do otherwise is granted by the Department’s Bridge Engineer.

2. The owner shall inspect attachments to structures at least once per year; the owner shall repair any deficiencies immediately. The owner shall maintain records of the inspections for a minimum of 3 years.

3. Attachment to longitudinal structures on a full control access facility system generally will not be permitted except to exclusively serve a highway facility. Attachments to existing structures crossing the full control access facility will be considered on a case-by-case basis.

4. The attachment method shall conform to engineering standards for preserving the highway, its safe operation, maintenance, and appearance.

5. Attachment of a utility facility will not be permitted unless the structure can support the additional load, accommodate the utility facility without compromising highway user safety and convenience, and the attachment does not impair bridge inspection or maintenance.

6. Manholes will not be allowed in the driving lanes of a bridge deck. Where the structure has a minimum shoulder width of 10 ft, manhole access through the deck in the shoulder area may be allowed within the discretion of the Department.

7. The utility attachment will be installed on the bridge in a manner that will not reduce the vertical clearances above the river, stream, pavement or top of a rail.

8. Utility attachments to the outside of a structure that is located within 440 yards ofa residential structure, park, fishing access site or other recreational facility will notbe permitted. A residential structure is any building intended for human occupancy, including businesses. The District Administrator may waive this provision if the utility can demonstrate the provision will place an economic hardship on the utility and that the design and attachment of the facility will not detract from the aesthetics of the structure. In other areas where, in the opinion ofthe District Administrator, bridge aesthetics are not a particular concern, a utility may be attached to the outside of the structure. Utilities attached to the outside ofthe structure will be on the downstream side.

9. Utility facilities shall be firmly attached to the structure and where necessary padded to eliminate noise and abrasion due to vibrations caused by wind or traffic.

10. The installation of a utility through the abutment or wing wall of an existing structure shall not be permitted.

11. In locations where a utility attached to a structure is carried beyond the back of the abutment, the utility shall curve or angle out to its proper alignment outside the roadbed area within the shortest possible distance from the abutment.

12. So long as utility facilities comply with the other conditions set forth in these rules, such a facility may be attached to structures by hangers or roller assemblies suspended from inserts in the underside of the deck or from hanger rods clamped to a flange of a superstructure member.

13. Bolting through the deck or concrete beams shall not be permitted.

14. Welding of attachments to steel members or bolting through such members shall not be permitted.

15. The use of driven anchors using the explosive type drilling force shall not be permitted.

16. Drilling in pre-stressed concrete beams shall not be permitted.

17. Attachments of utilities facilities to bridge handrail or guardrail or their anchorage systems shall not be permitted.

18. Attachment of pipelines carrying deleterious or corrosive substances shall not be permitted.

19. The design of a utility attachment to a highway structure shall include provisions acceptable to the Department for lineal expansion and contraction due to temperature changes. Line bends or expansion couplings may be used for this purpose.

20. Each proposed bridge attachment will be considered on a case-by-case basis by the Department.

21. Trenching in the vicinity of piers, bents or abutments shall be a sufficient distance from footings to prevent undercutting or material from sloughing from under the footing.

22. An application which involves the reduction of existing waterway area shall not be permitted.

23. Utilities attached to bridges shall not be maintained from the bridge deck without the prior approval of the Department's District Administrator.

24. Utility facilities shall not be attached to bridges or eligible for listing on the National Register of Historic Places without written consent of the State Historic Preservation Officer.

25. By accepting the structure permit, the owner of the utility facility shall be fully liable to the Department, or others, for any damage to the structure, or the surrounding environment, caused by the placement and use of the facility on a highway structure. If the structure is damaged by the utility facility, through negligence or otherwise, so that the traveling public cannot use the structure, then the utility must pay all costs to repair the structure and associated costs.

26. The Department shall not allow any new attachments to a highway structure by petroleum, natural gas, or other products pipelines in seismically active areas (those areas where the anticipated acceleration coefficients due to an earthquake exceed 10% of gravity) unless the structure has been retrofitted or built-in conformity to the Department's seismic requirements since January 1, 1992. The Department may waive this requirement if the Department determines that the structure is adequate for the seismic area within which it is located.

43-31.2 Proposed Attachments to New Bridge Structures

Where the Department plans to construct a new structure, the design of the structure will, at the request of a utility company, be reviewed by the Department's Bridge Bureau for accommodation of existing or proposed utility installations consistent with the requirements set forth herein.

The utility company may be required to reimburse the State for additional design and construction costs associated with accommodating the utility facility on the new structure.

Installation of a utility facility on a new structure shall be coordinated with the bridge construction so as not to interfere with the operations of the highway contractor.

The applicant shall submit complete plans and specifications of the proposed installation, including the weight per linear foot and detail drawings to the Department prior to the Department's completion of plans and specifications for the proposed structure.

Utility facilities may be installed through freestanding bridge abutments but shall not be permitted through abutments or bents that are expected to move as thermal expansion and contraction affects the bridge. The hole created in the bridge abutment must be of the minimum size necessary to accommodate the utility and it shall be sleeved to permit relative movement between the abutment and utility.

43-32 PIPELINES

At the option of the utility company, pipelines must be attached to a highway structure by one of the following methods:

1. Method 1: The carrier line shall be encased throughout the length of the structure and the casing shall be carried beyond, but not through, the bridge abutments and shall be effectively opened or vented at each end. The casing shall be designed to withstand the same internal pressure as the carrier pipe.

2. Method 2: The carrier line may be attached to the structure not encased using the following design factors:

Class Location 1	0.50
Class Location 2	0.40
Class Location 3	0.33
Class Location 4	0.27

The design factor specified shall be obtained in accordance with the equations set forth in 49 **CFR** 192 by any combination of wall thickness and/or pipe yield strength that will provide the required design factors. If the design factor is obtained by increasing steel strength, the utility shall provide certification at the time of installation to the Department that the pipe, in fact, meets the strength requirements in the design calculations.

The carrier pipe shall be pressure tested before start-up in accordance with the latest edition of applicable industry codes, as well as the applicable statutes and regulations.

The attachment shall be designed to prevent any discharge from damaging the structure or reaching the waterway in the event of a rupture. That capability should be demonstrated to the satisfaction of the Department's Bridge Bureau prior to approval of the attachment.

Pipelines using bridge members to resist forces generated by fluids in motion shall not be permitted.

The following information shall be included in the application:

- outside diameter,
- inside diameter,
- pipe material,
- actual working pressure,
- substance carried,
- type of coating, and
- Any other information requested by the Department.

Pipelines attached to highway structures shall be electrically isolated from the structure.

Pipelines shall be attached to provide sufficient clearance for convenience and safety during maintenance and repair of the structure or other utility attachments on the structure. The pipeline shall be located to minimize the possibility of damage from traffic.

Pipelines shall include the capability to allow for expansion and contraction of the structure and the pipeline.

43-33 POWER AND COMMUNICATIONS LINES

Electric power and communication conductors attached to a highway structure shall be insulated from the structure and carried in protective conduit or pipe throughout the structure. Exposed metallic conduit shall be grounded on each end. Where metallic conduit is installed within 7 ft of any metal parts of the structure which are readily accessible, including, but not limited to, railings, platforms or stairs, the metallic conduit shall be bonded to the metal parts of the structure. When bonding, all sections of the structure shall be bonded to the metallic conduits.
Electrical power and communication lines shall be attached to provide sufficient clearance for convenience and safety during maintenance and repair of the structure or other utility attachments on the structure. The conduit should be located to minimize the possibility of damage from traffic. Conduits shall allow for the expansion and contraction of the structure.

Attachments shall comply with the ***National Electrical Safety Code*** and applicable regulations.

Metallic conduit attached to structures that are cathodically protected shall meet all the above requirements and shall not adversely affect the cathodic protection of the structure (i.e., insulate the conduit from the soil and use anodes at each end for grounding). The method to be used shall be approved by the Department's Bridge Bureau on a case-by-case basis.

43-34 MATERIALS

All attachments to structures shall be constructed from durable materials designed for long service life and be free from routine servicing or maintenance. All materials shall conform to current applicable industry specifications and codes.

All steel materials used in attaching a utility conduit to a structure shall be stainless or galvanized.

Materials used for attaching a utility facility to the structure shall be compatible with the structural material to eliminate the possibility of corrosion.

43-35 BRIDGE CLEARANCES

Aerial power or communications lines will not cross over bridges where it is possible to avoid such installations. This is necessary to allow the Department sufficient room to operate equipment to maintain bridges. Lateral clearance from a bridge will be sufficient to allow construction and maintenance of the bridge structure. A minimum vertical clearance of 25 ft from the top of the bridge rail will be maintained. A horizontal clearance of 25 ft will be maintained from the neat lines of the structures.

43-36 DISTRICT UTILITY ENGINEER SPECIALIST (UTILITY AGENT)

FOR INTERPRETATION OF THESE GUIDELINES CONSULT THE DISTRICT UTILITY ENGINEER SPECIALIST OR THE UTILITIES SECTION OF THE RIGHT-OF-WAY BUREAU AT ONE OF THE FOLLOWING LOCATIONS:

District 1
Montana Department of Transportation
2100 West Broadway
P.O. Box 7039
Missoula, MT 59807-7039 Telephone: (406) 523-5800
Kalispell Office Telephone: (406) 751-2000

District 2
Montana Department of Transportation
Wynne & Lowell
P.O. Box 3068
Butte, MT 59702-3068 Telephone: (406) 494-9600
Bozeman Office Telephone: (406) 586-9562

District 3
Montana Department of Transportation
104 - 18th Avenue N.E.
P.O. Box 1359
Great Falls, MT 59403-1359 Telephone: (406) 454-5880

District 4
Montana Department of Transportation
503 North River Avenue
P.O. Box 890
Glendive, MT 59330-0890 Telephone: (406) 377-5296

District 5
Montana Department of Transportation
424 Morey
P.O. Box 20437
Billings, MT 59104-0437 Telephone: (406) 252-4138

Helena Headquarters
Montana Department of Transportation
R/W Bureau-Utilities Section
2701 Prospect Avenue
Helena, MT 59620-1001 Telephone: (406) 444-6080

43-37 APPENDIX - LINKS

Structure Encroachment Permit Form

Certification & Inspection Form

http://mdtupas.com/