SECTION 3. UTILITY PLACEMENT AND CONSTRUCTION

3.1 Discovery of Unknown Hazardous Materials

If the utility provider or their contractor 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 County and the utility, the utility must immediately stop work in that area and notify the County. The County will then determine the appropriate means of mitigating the hazardous material.

3.2 New Services in Subdivisions

Where a new service for underground power, natural gas or telecommunication is requested for a subdivision and the proposed location will be within a public right-of-way, the utility provider is subject to the requirements in Section 2 of these standards.

3.3 Overhead Installations

Overhead utility installations are subject to the following conditions:

1. Overhead facilities should be installed at the outer edge of the right-of-way, behind the sidewalk, or a minimum of two (2) feet behind the back of the curb.
2. The minimum height for overhead facilities crossing a public right-of-way is twenty-one (21) feet as measured from the highest point of the roadway.
3. All above ground fixed objects, including down guys, should be installed outside of the clear recovery area, unless the following occurs:
   (a) They are installed behind guardrail or other protective devices, and the minimum installation distance behind guardrail is two (2) feet. A greater separation may be required for deflection; or
   (b) they are installed in a location where a vehicle cannot reach the facility, such as on a cut slope.
4. The County may grant exceptions to the clear recovery area for project-specific situations, such as for small segments of above ground installations which would cause misalignment of a pole line.

3.4 Trenchless Crossings

The County has authority to require a bored, pushed or other trenchless technology crossing within a public right-of-way and such crossings shall meet the following conditions:

1. All crossings shall be thirty (30) inches below the ditch flow line.
2. Boring pits shall be ten (10) feet from the shoulder where possible.
3. Crossings shall be at right angles to the roadway.
4. Heavier gauge/strength pipe shall be considered for uncased petroleum products pipelines and high-pressure natural gas lines at roadway crossings.

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

3.5 Fiber Optic Cable

Fiber optic cable shall be buried according to the following conditions:

1. Fiber Optic Cable shall be placed within five (5) feet of the right-of-way where possible, unless authorized by the County.
2. Fiber Optic Cable shall be placed forty-two (42) inches deep, unless the County waives the provision.
3. Fiber Optic Cable shall have a warning tape eighteen (18) inches above the cable.
4. Above ground markings shall be in at least five hundred (500) foot intervals and at all road crossings.

3.6 Natural Gas, Electrical and Communication Installations

Natural gas, electrical and communication installations shall be placed a minimum of thirty (30) inches below the drainage ditch flow line, or as required by the County.

3.7 Water and Sanitary Sewer Installations

Water and sanitary sewer installations shall meet the following conditions:

1. Water and sanitary sewer installations shall meet current standards of the local service provider, MPWSS and the Montana Department of Environmental Quality.
2. Water pipes shall be installed to a minimum depth of six (6) feet to avoid freezing problems under the roadway.
3. Hydrants shall be installed a minimum of two (2) feet behind the back of the curb, two (2) feet behind the back of a curbside sidewalk or three (3) feet from the edge of the shoulder (see Standard Drawing MCSD-304 in Appendix A).
4. Water valve boxes and sanitary sewer manhole covers shall be located outside of the wheel path when possible. Finish height of valve boxes and manhole covers shall be one-quarter (¼) inch to one-half (½) below finish grade (see Standard Drawings MCSD-209 and MCSD-300 in Appendix A).

3.8 Petroleum and High-Pressure Pipelines

Installation of petroleum and high-pressure pipelines shall meet the following conditions:

1. Pipelines shall be placed forty-two (42) inches deep, unless approved otherwise by the County.
2. Above ground markings shall be placed in at least five hundred (500) foot intervals and at all road crossings.
3. Vent pipes must be located at the right-of-way line.

3.9 Blasting

Blasting is prohibited unless approved by the County.

3.10 Attachment to County Bridges

Attachments to County-owned bridges may be allowed with an encroachment permit and must have the prior approval of the County. When such attachments are allowed, the following conditions shall be met:

1. Proposed utility attachments shall be submitted to the County for review with sufficient detailed drawings to indicate the method of attachment, inside diameter, outside diameter, pipe weight per foot, working pressure (if applicable), type of coating, substance carried, pipe material and any other information required by the County.
2. Attachments to existing structures in place prior to the effective date of these standards are considered to be in compliance with the standards, provided that the owner shall inspect the attachment annually and shall repair any deficiencies.
3. Missoula County is not responsible for the inspection, maintenance or replacement of utility facilities attached to County structures. If a deficiency in the utility facility is observed by County personnel during routine bridge maintenance or inspection, the County will notify the owner as a courtesy.
4. If a utility facility is required to be removed or relocated, either temporarily or permanently, for required structure maintenance or replacement, it is the utility company's responsibility to complete such work at the request of the County.
5. Where it is feasible and reasonable to locate utility facilities elsewhere, attachment to bridges 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 County-owned structure. When attachment to a County structure is allowed, the following conditions will apply:
   (a) All utility facilities attached to County structures shall be attached as provided in these standards unless written approval to do otherwise is granted by the County.
   (b) The owner shall inspect attachments to County structures at least once per year. The owner shall repair any deficiencies immediately.
   (c) The attachment method shall conform to engineering standards for preserving the structure, its safe operation, maintenance and appearance.
   (d) Attachment of a utility facility will not be permitted unless the structure can support the additional load, accommodate the utility facility without compromising road user safety and convenience, and the attachment does not impair bridge inspection or maintenance. When structural analysis for an additional load created by the utility facility is required, it is the applicant's responsibility to provide analysis.
   (e) Manholes will not be allowed in the driving lanes of a bridge deck. Where conditions exist, manhole access through the deck in the shoulder area may be allowed at the discretion of the County.

(f) 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, unless approved in writing by county.
(g) 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.
(h) The installation of a utility through the abutment or wing wall of an existing structure shall not be permitted.
(i) 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.
(j) So long as utility facilities comply with the other conditions set forth in these standards, 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.
(k) Bolting through the deck or concrete beams shall not be permitted.
(l) Welding of attachments to steel members or bolting through such members shall not be permitted.
(m) The use of driven anchors using the explosive type drilling force shall not be permitted.
(n) Drilling in pre-stressed concrete beams shall not be permitted.
(o) Attachments of utility facilities to bridge handrail or guardrail or their anchorage systems shall not be permitted.
(p) Attachment of pipelines carrying deleterious or corrosive substances shall not be permitted.
(q) The design of a utility attachment to a structure shall include provisions acceptable to the County for lineal expansion and contraction due to temperature changes. Line bends or expansion couplings may be used for this purpose.
(r) Each proposed bridge attachment will be considered on a case-by-case basis by the County.
(s) 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.
(t) An application which involves the reduction of existing waterway area shall not be permitted.
(u) Utilities attached to bridges shall not be maintained from the bridge deck without the prior approval of the County.
(v) Utility facilities shall not be attached to bridges on or eligible for listing on the National Register of Historic Places without written consent of the State Historic Preservation Officer.
(w) By accepting the encroachment permit, the owner of the utility facility shall be fully liable to the County, or others, for any damage to the structure, or the surrounding environment, caused by the placement and use of the facility on a County owned structure. If the structure is damaged by the utility facility through negligence or otherwise, then the utility must pay all costs to repair the structure and associated costs.

6. Where the County plans to construct a new structure, the design of the structure will, upon request of a utility company, be reviewed by the County for accommodation of existing or proposed utility installations consistent with the requirements set forth herein. The applicant shall submit complete plans and specifications of the proposed installation, including the weight per linear foot and detail drawings to the County prior to the County's completion of plans and specifications for the proposed structure. The utility company may be required to reimburse the County 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 contractor.
7. Utility facilities may be installed through freestanding bridge abutments, but shall not be permitted through abutments or bents that are expected to move as the 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.
8. At the option of the utility company, pipelines must be attached to a County structure by one of the following methods:
   (a) 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.
   (b) 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

   (c) For either method employed, the following conditions shall apply:
      1. 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 to the County at the time of installation that the pipe meets the strength requirements in the design calculations.
      2. 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.
      3. 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 shall be demonstrated to the satisfaction of the County prior to approval of the attachment.
      4. Pipelines using bridge members to resist forces generated by fluids in motion shall not be permitted.
      5. Pipelines attached to County structures shall be electrically isolated from the structure.

6. 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.
7. Pipelines shall include the capability to allow for expansion and contraction of the structure and the pipeline.

9. Where electric power and communication conductors are attached to a County structure, the following conditions shall apply:
   (a) They shall be insulated from the structure and carried in protective conduit or pipe throughout the structure.
   (b) Exposed metallic conduit shall be grounded on each end.
   (c) Where metallic conduit is installed within seven (7) feet 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 such elements, all sections of the structure shall be bonded to the metallic conduits.
   (d) 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.
   (e) The conduit shall be located to minimize the possibility of damage from traffic and shall allow for the expansion and contraction of the structure.
   (f) Attachments shall comply with the National Electrical Safety Code and applicable regulations.
10. Aerial power or communications lines shall not cross over bridges where it is possible to avoid such installations. Where conditions exist that create undue hardship for the installation of the facility anywhere but on the structure, the facility shall be installed in compliance with Sections 3.2 and 3.9 of these standards.
11. The following requirements for materials attached to a County structure shall apply:
   (a) All attachments to structures shall be constructed from durable materials designed for long service life and be free from required routine servicing or maintenance.
   (b) All materials shall conform to current applicable industry specifications and codes.
   (c) All steel materials used in attaching a utility conduit to a structure shall be stainless or galvanized.
   (d) Materials used for attaching a utility facility to the structure shall be compatible with the structural material to eliminate the possibility of corrosion.