INDOT
UTILITY ACCOMMODATION POLICY
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UTILITY ACCOMODATION POLICY

1.0 Introduction 4

1.0-(01) Precedence 4

1.0-(02) Purpose 4

1.0-(03) Application 5

1.0-(04) Scope 5

1.0-(05) Other Requirements 5

1.0-(06) Exceptions 6

2.0 Definitions 6

3.0 General 10

3.0-(01) Permits 10

3.0-(02) Driveway Conflicts 11

3.0-(03) Private Facilities 11

3.0-(04) Service Lines 12

3.0-(05) Access Control 12

3.0-(06) Location 13

3.0-(07) Design 15

3.0-(08) Construction 17

4.0 Structures 22

4.0-(01) Utility Structures 22

4.0-(02) Highway Structures 22

5.0 Pipelines 24

5.0-(01) General 24

5.0-(02) Liquid Petroleum Lines 25

5.0-(03) Gas Lines, High Pressure 26

5.0-(04) Gas Lines, Low Pressure & Medium Pressure 27

5.0-(05) Water Lines 28

5.0-(06) Sanitary Sewer Lines 29

6.0 Overhead Power Lines and Communication Lines 30

7.0 Underground Power Lines and Communication Lines 31

7.0-(01) General 31
7.0-(02) Underground Power Lines 32
7.0-(03) Underground Communication Lines 34
8.0 Irrigation and Drainage Pipes, Ditches and Canals 35
Appendix A Minimum Depth of Cover for Utility Lines 36

UTILITY ACCOMMODATION POLICY

1.0 Introduction

1.0-(01) Precedence

This policy supersedes and replaces all policies or portions of policies pertaining to the accommodation of utility facilities in the right of way of the State highway system. The term "accommodation" includes the location, design, installation, maintenance, removal, and relocation of utility facilities within the right of way.

Information regarding reimbursement of utility relocations can be found in IC 8-23-2-6(15), *Indiana Design Manual* Chapter 104 and the Federal Highway Administration Program Guide: Utility Relocation and Accommodation on Federal-Aid Highway Projects. A utility with facilities on public right of way must relocate those facilities at their cost if they are in conflict with the proposed improvement project. A utility that desires reimbursement for their eligible costs as allowed under state and federal law shall provide the necessary documents to support their claim. The utility shall make a good faith effort to provide the required documents in a timely manner to ensure the improvement project is not delayed. The utility may be held accountable for the cost of delays of an improvement project.

This statement of policy and procedure will not be interpreted or applied in a manner in violation of, or inconsistent with state law. INDOT's authority with respect to jurisdiction over state highway right-of-way emanates from state and federal law.

1.0-(02) Purpose

The purpose of this utility accommodation policy is to establish the policy for safely, reasonably and cost effectively managing the right of way of the State highway system. Also, this policy applies to all local public agency projects that use federal funds and are administered by INDOT.

Federal and State law mandates that INDOT manage the State highway system responsibly, reasonably and cost effectively. INDOT's goal in managing the right of way is to preserve the integrity, safe operation, and function of the State highway system. The manner in which utilities occupy the right of way can affect the appearance, operation, construction, and maintenance of the highway and the safety of the traveling public. Therefore, it is necessary that any utility's use and occupancy be authorized and reasonably regulated and managed. References are 23 CFR 645.209 and IC 8-23.

1.0-(03) Application

This policy applies to all privately, municipally, publicly or cooperatively owned utility facilities that are located, installed, maintained, repaired, removed or relocated within the right-of-way of the State highway system. The types of utility facilities are listed in IC 8-1-9-2 and 105 IAC 13-2-7 and include those that supply communication, cable television, power, light, heat, electricity, gas, water, pipeline, sewer, sewage disposal, drain, or like services. These facilities may involve underground, surface, and/or overhead installations. INDOT may at their own discretion elect to address other types of utility facilities in accordance with this policy or other policies.

1.0-(04) Scope

INDOT shall use this policy to responsibly, reasonably and cost effectively manage and/or regulate the location, design, installation, maintenance, repair, removal and relocation of utility facilities within the right of way. This policy is limited to matters which are the responsibility of INDOT for preserving the safe operation and integrity of the State highway system. Laws or orders of public authority, industry or governmental codes that prescribe a higher degree of protection or standards than those describe herein shall prevail over this policy. The INDOT Commissioner or his designated representatives have the authority and responsibility to implement and interpret this policy.

1.0-(05) Other Requirements

The utility shall comply with all other applicable requirements including but not limited to those specified in the following documents:

1. INDOT Standard Specifications.

2. INDOT Standard Drawings.

3. INDOT Permit General and Special Provisions.

4. INDOT *Manual on Uniform Traffic Control Devices*.

5. INDOT *Design Manual* including but not limited to, the following chapters.

a. Roadside Safety, Chapter 303.

b. Geometric Design of Existing Non-Freeways, Chapter 302.

c. Traffic Control Plans/Designs, Chapter 503.

d. Temporary Erosion and Sediment Control Chapter 205.

6. OSHA Standards.

7. All other relevant industry standards for the type of facilities being installed.

8. All other relevant laws and regulations.

1.0-(06) Exceptions

A utility may submit a letter requesting an exception to any provision of this policy. The request will be submitted to INDOT in writing on the utility's letterhead. The letter will be addressed to Statewide Director, Utilities & Railroads, INDOT IGCN Room N642, 100 North Senate Ave, Indianapolis, Indiana 46204. The INDOT Commissioner or his designated representatives have the authority to review and approve exceptions to this policy. Each exception will be considered thoroughly and individually. An approved exception will not be considered a precedent for the approval of any subsequent request for an exception. INDOT may grant an exception on its own initiative and such will be reasonably documented.

The utility will explain in their request any unusual conditions or hardships that support the need for an exception to this policy. The utility will explain how the proposed exception promotes, or is consistent with, the purpose of this policy. The utility will present in their request the impacts for the alternative when the policy is followed and for the requested exception to the policy. At a minimum, the request will cover the impacts on traffic safety, highway operations, the direct and indirect environmental and economic effects of any loss of productive agricultural land, and any interference or impairment of the use of the highway. The utility will present how the facilities will be maintained and the impact on highway maintenance including drainage, pavement preservations, and possible highway improvements.

2.0 Definitions

The following definitions apply to utility accommodation:

ANSI. American National Standards Institute.

Applicant. An applicant is a person or entity applying for a permit under this policy.

Backfill. Replacement of excavation with suitable material compacted as specified.

Bedding. Soil or other suitable material used to support an underground facility.

Boring. Boring is the process of making a hole below the ground by drilling.

Carrier. A carrier is a pipe directly enclosing a transmitted fluid; liquid, gas or slurry.

Casing. A casing is a pipe enclosing a carrier.

CFR. Code of Federal Regulations.

Clear Zone. The clear zone is the portion of the road side within the highway right-of-way that is free of non-traversable hazards and fixed objects. The INDOT *Design Manual* is the guide for establishing the clear zone for various types of highways and operating conditions.

Conduit. A conduit is a pipe that encloses a communication or electrical line.

Depth of Cover. Depth of cover is the distance between the top of an underground facility including casing to the surface of the ground or pavement.

District. A district is one of the six administrative subdivisions of INDOT.

Distribution Point. A distribution point is a location on a main line where a connection is made to serve one or more customers.

Divided Highway. A divided highway is a highway with separated roadways for traffic in opposite directions.

Electronic Permitting System (EPS). The electronic online system used to record activity related to an INDOT permit including plan submittals, correspondence and payment activity.

Facility. Any privately, municipally, publicly or cooperatively owned systems for supplying: communication, power, light, heat, electricity, gas, water, pipeline, sewer, sewage disposal, drain or like

services directly or indirectly to the public. Facilities do not include plant type components such as solar arrays, wind turbines and oil wells that produce commodities.

FHWA. Federal Highway Administration

Highway. Highway, street, or road means a public way for purposes of vehicular traffic, including the entire area within the right of way.

Frontage Road. A frontage road is a local street or road auxiliary to and located along side of a highway used for access control, and to provide service to adjacent areas.

Gas Line, High Pressure. A pipeline that supplies natural gas with an internal pressure of 60 psi or greater.

Gas Line, Low Pressure. A pipeline that supplies natural gas with internal pressure of less than 60 psi.

Gas Line, Medium Pressure. A pipeline that supplies natural gas with internal pressure of less than 60 psi.

IMUTCD. Indiana Manual on Uniform Traffic Control Devices.

INDOT. Indiana Department of Transportation.

Limited Access Facility. A highway or street designed for through traffic, over, from, or to which owners or occupiers of abutting land or other persons have either no right or easement, or a limited right or easement of direct access, light, air or view because their property abuts upon the limited access facility or for any other reason. The highways or streets may be parkways from which trucks, buses, or other commercial vehicles are excluded, or freeways open to use by all customary forms of highway or street traffic.

Manhole. A manhole is an opening in an underground system where workmen may enter for the purpose of working on the facilities.

Median. A median is the portion of a divided highway separating the traveled way for traffic in opposite directions.

Notice to Proceed (NTP). Formal notification by INDOT to a utility to proceed with installation or relocation of their facilities on public right of way.

Occupancy. The presence of utility facilities within highway right of -way.

OSHA. Occupation Safety and

Pavement Structure. The combination of the sub-base, base course and surface course placed on a sub-grade to support the traffic load and distribute it to the road bed.

Permit. Written formal acceptance by INDOT of the utility's plan to construct, maintain repair or remove their facilities on public right-of-way.

Pipeline. A continuous carrier used primarily for the transportation of fluids (liquid, gas or slurry) from one point to another using either gravity or pressure flow.

Plowing. Direct burial of utility lines by means of a plow type mechanism which breaks the ground, places the utility line, and closes the break in the ground in a single operation.

Private Line. Privately owned facility devoted exclusively to serve the owner of those facilities.

Road. A public way for purposes of vehicular traffic, including the entire area within the right of way.

Roadway. The paved portion of the highway used by vehicular traffic and includes the shoulders.

Roadside. The area abutting the roadway within the right of way. Roadside includes areas between roadways of a divided highway.

Service Line. A facility that supplies a service to an individual customer from a main line.

Shoulder. The portion of the roadway adjacent to the traveled way for the accommodation of stopped vehicles, emergency use, and lateral support of the pavement structure.

State Highway System. Encompasses all highways under state jurisdiction including interstates, US routes, and state routes. This system includes local roads or state park roads when an improvement project is under state administration.

Sub-grade. The prepared earth surface upon which the pavement structure and shoulders are constructed.

Traffic Control Plan. Describes the traffic control devices and other measures that will be used to promote the safe and controlled movement of vehicular traffic around the worksite and the safety of the utility work force.

Traveled way. That portion of the roadway for the movement of vehicles excluding shoulders and auxiliary lanes.

Trenchless Technology. A group of construction methods for underground facility installation, replacement, renovation, inspection, location, and leak detection, with minimum excavation from the ground surface.

Utility. The owner of a facility.

Vent. A pipe to allow the dissipation of gases or vapors into the atmosphere from an underground casing.

3.0 General

3.0-(01) Permits

INDOT is required to responsibly, reasonably, and cost effectively manage the right of way of the State highway system in accordance with federal and state law. INDOT is authorized to make policy and procedures to control the use of that right of way. This control is exercised by requiring a permit for each area of use of the right of way by a utility. Any use of the public right-of-way shall not endanger the traveling public and shall be in accordance with this policy.

A utility that desires to occupy the State highway right-of-way will submit a permit request to INDOT. INDOT will review the permit request to ensure compliance with this policy and any other applicable requirements. INDOT may deny any permit request that does not conform to this policy or any other applicable requirements. Also, INDOT may deny a permit request if the utility has a history of non-compliance with regulations, rules, standards, policies or any other applicable requirements. If INDOT denies a permit request for any reason, a written explanation will be provided. If INDOT approves the request a permit will be issued.

INDOT divides processing requests for utility occupancy into two categories as follows:

1. Utility Initiated. A utility that desires to install or relocate any facility within the public right of way will present a permit application to the appropriate INDOT district office. The utility will submit their permit application using the Electronic Permitting System (EPS) at http://www.ai.org/indot/2727.htm or present their request in writing to the District Permit

Manager. A fee is charged when submitting an application for this permit and generally a permit bond is required.

2. INDOT Initiated. A utility required by INDOT to relocate any facility to accommodate a proposed highway improvement project shall be approved by INDOT before relocating. A fee is not charged for this permit and a permit bond is not required

The utility is responsible for obtaining any other applicable permits or authorizations required for the installation or relocation of their facilities. Agencies that may be contacted regarding other permits include, but are not limited to, the U.S. Army Corps of Engineers, the Indiana Department of Natural Resources, the Indiana Department of Environmental Management, and local public agencies.

A utility shall notify the INDOT office that issued their permit within one month of a facility ownership change. The new owner will have all the obligations and privileges granted to the former owner. A utility with a change in legal status remains bound by the permit and its provisions.

INDOT may revoke a permit. A cause to revoke a permit is the failure of the utility to comply with the terms of their permit and its provisions.

3.0-(02) Driveway Conflicts

Construction, reconstruction, modification or relocation of a driveway on highway right-of-way may require relocation of utility facilities. All work within state right of way is subject to INDOT approval.

INDOT is responsible for coordinating the relocation of utility facilities when the work on the drive is initiated by or incidental to a highway improvement project. The division of costs for this work will be resolved between INDOT and the utility in accordance with state law.

The property owner is responsible for coordinating the relocation of utility facilities when the work on the drive is initiated by the private owner. The division of costs for this work will be resolved between the owner of the drive and the utility.

3.0-(03) Private Facilities

INDOT does not allow private facilities to be located on public right of way unless they are private service lines which extend from the main line. The utility should request and coordinate the installation and relocation of any such utility service line.

3.0-(04) Service Lines

Generally, it is in the public interest for transverse installations of service lines owned by a public utility to be located on the State highway right-of-way because they connect the main line directly to the customer. INDOT may allow transverse installation of such service lines on state highway right-of-way in accordance with this policy. Also, INDOT may permit installation of longitudinal runs of service lines when a public interest is demonstrated and approved in accordance with section 1.0-(06). A utility that requires the property owner to install a service line will co-sign the permit. All work within state right of way is subject to INDOT approval.

3.0-(05) Access Control

INDOT has the authority to control and regulate access to all highways under its jurisdiction. Access control is used to limit the degree of interference with vehicular traffic from other vehicles or pedestrians which are entering, exiting or crossing the highway. The level of access control determines the type and extent of utility facility installations that are allowed on public right-of-way. Contact the appropriate INDOT District to obtain information on the type of access control in effect for a specific location. The access control line is normally but not always at the same location as the right-of-way line.

Access control generally includes three categories as follows:

1. Non-Limited Access. INDOT has the authority to regulate the location and details of access, but INDOT has not purchased access control rights from adjoining properties. This type is typical of most highways with frequent driveways and intersections.

2. Partial Limited Access. INDOT has declared or purchased access control rights from adjoining property owners. Access is controlled to give preference to vehicular traffic, but there may still be some intersecting streets at grade and some driveway connections. This type is typical of many divided highways with some intersections and driveways.

3. Full Limited Access. INDOT has declared or purchased access control rights from adjoining property owners. Access is controlled to give priority to mainline vehicular traffic by providing access to other vehicles and pedestrians only from selected public roads, by prohibiting crossings at grade and by prohibiting driveway connections. This level is typical of interstate highways and some divided highways.

A utility facility installed on an existing limited access highway or partial limited access highway will be accessed from outside the access control line. Access may be from such areas as private easements, frontage roads, public roads and private driveways.

3.0-(06) Location

Utilities will install and relocate facilities with due consideration for the safety, operation, maintenance and aesthetic characteristics of the highway and other users of the highway. Facilities shall be located to minimize relocation due to future highway improvements, to enable future installation of additional facilities on the highway, to enable facility maintenance, repair and upgrade with minimum hazards and minimum interference with highway traffic.

The following guidelines apply to the location of utility facilities.

1. The location of above ground facilities within the highway right of way will be in accordance with the INDOT *Design Manual* Chapter 303. New or relocated above ground facility installations will be located outside the clear zone.

2. Facilities will cross roadways at right angles or as nearly as practical to right angles. Reasonable latitude may be exercised for existing facilities which are otherwise qualified to remain in place. Where practical aerial lines should not cross the roadway within 100 ft. of a small structure, large culvert (over 48" diameter), or bridge structure to aid in future construction projects.

3. Facilities crossing limited access highways will have all supporting structures and above ground appurtenances located outside the access control line and preferably, outside the right-of-way line. Additionally, access for installation, maintenance and relocation of facilities will be from outside the access control line and preferably, outside the right-of-way line of the limited access roadway.

4. Longitudinal installations of facilities, individual service connections and facility maintenance points will be located on a uniform alignment as near as possible to the right-of-way line to provide the maximum space for possible future highway construction or facility installations. Variance may be allowed on the distance from the facility to the right-of-way line in order to maintain a uniform alignment. Such variance often occurs where irregularly shaped portions of the right of way extend beyond the normal right-of-way limits. On highways with a frontage road, the preferred location for longitudinal installation is between the frontage road and the exterior right-of-way line.

5. Longitudinal installations of facilities, individual service connections and facility maintenance points on highways with partial access control are discouraged. Installations may be allowed where no other reasonable alternative exists. Factors to consider in evaluating the installation include terrain, cost, prior existence, environmental characteristics, and distance between distribution points. Other factors include access for maintenance from outside the access control line or from drive ways and the effect on agricultural land if not allowed.

6. Longitudinal installations of facilities on highways with full access control are not permitted. Exceptions may be issued when the facilities do not include individual service connections and the facilities are installed or serviced by direct access from outside the limited access control line.

7. Longitudinal installations of underground power lines, high pressure gas lines and petroleum lines shall not be placed under travel lanes, shoulders or in the median. Longitudinal installations of all other types of facilities are discouraged from being placed under travel lanes, shoulders or in the median. On highways with frontage roads it is preferred that longitudinal installations are located at or near the exterior right-of-way line of the frontage road. On intersecting roadways, longitudinal installations under travel lanes, shoulders or in the median are discouraged where the road way crosses state right of way.

8. Utility facilities will not be installed on federally funded roadways within or adjacent to areas of scenic enhancement and natural beauty in accordance with 23 CFR, Part 645, Subpart B, Section 209(h).

9. An underground utility line which lacks a continuous and integral metallic component capable of detection by locating instruments will be accompanied in its location by a continuous detectable material such as a metallic tracer wire or metallic tape. This includes service lines.

10. A utility shall place a warning device directly above high risk facilities such as gas and petroleum lines. A utility may install a warning device above other facilities. These warning devices will be buried at least 12 inches below the ground surface. This warning device provides notice to excavators that they are in close proximity to a buried facility.

11. A utility may indicate their facilities within state right of way with markers or signs. The signs or markers will be placed in close proximity to the facilities. Signs or markers for transverse crossings will be placed at the right-of-way line. The signs or markers will indicate the facility type, the name of the facility operator and a telephone number to contact the utility. All markers must be break-away type and crashworthy. Markers may be subject to approval by INDOT.

12. An existing utility facility within the right of way of an existing or proposed highway improvement project may remain provided it is in compliance with the requirements of the INDOT *Design Manual* and this Utility Accommodation Policy. An existing utility facility that is in conflict with a proposed highway improvement project will be relocated in accordance with 105 IAC.

13. Facilities located on urban streets with closely abutting improvements are special cases which will be resolved consistent with the prevailing limitations and conditions.

14. Locations that have a high potential to interfere with proposed construction, highway maintenance, roadway operations, highway safety or future highway improvements need to be avoided. These include locations as follows:

    a. deep highway cut sections;
    b. near footings of bridges or other highway structures;
    c. diagonally across intersections;
    d. cross-drains where flow of water, drift or stream bed load may be obstructed;
    e. longitudinally in or under a ditch;
    f. within a basin drained by a pump if the pipeline carries a liquid or liquefied gas;
    g. within an underpass drained by a pump if the pipeline carries a liquid or liquefied gas;
    h. wet or rocky terrain where minimum depth of cover would be difficult to attain;
    i. soft soils subject to excess settlement; and
    j. median installations.

3.0-(07) Design

The following apply to the design of utilities.

1. Each utility is responsible for the design of their facilities including the preparation of drawings, specifications and cost estimate. To support efforts to minimize utility facility relocations the utility shall provide accurate, complete and understandable information on the location of their facilities inside the public right of way within 30 days of a request. The cost to provide this information is the responsibility of the utility.

2. Utility facility installations within the highway right of way will comply with current industry standards including but not limited to the following requirements.

a. Electric power facilities and communication facilities will be in accordance with the current National Electrical Safety Code.

b. Water facilities will be in accordance with the current specifications of the American Water Works Association and Ten State Standards.

c. Pressurized pipelines will be in accordance with the current ANSI Code for Pressure Piping (ASME Code B31) and 49 CFR Parts 192, 193 and 195.

d. Liquid petroleum pipelines will be in accordance with the current recommended practice of the American Petroleum Institute for pipeline crossings under railroads and highways.

e. Pipelines carrying hazardous materials will be in accordance with the rules and regulations of the U.S. Department of Transportation governing the transportation of these materials.

3. Facility installations and facility relocations within the highway right of way will be designed for a long service life, be made of durable materials and be relatively free from routine service.

4. Facility installations and relocations will be designed to accommodate planned expansion of the facilities. Facilities will be designed to enable facility maintenance, repair and upgrade with minimum interference and hazard to highway traffic.

5. If an exception is granted and utility lines are attached to an appurtenance, bridge, small structure, culvert or other drainage structure, shut off valves will be installed at both ends of the attachment. The shut off valves will be automatic where practical.

6. Utility facilities crossing state highways underground will be installed without disturbing the existing pavement structure or paved shoulders. Open cut of pavement will not be considered unless it is demonstrated there is no reasonable alternate method available. Casing, pipe, or conduit crossing state highway underground will be installed using trenchless technology in accordance with INDOT Standard Specification 716. Water jetting is not allowed.

7. Boring or jacking under state highways with access control will be from pits located at least 30 feet from the edge of pavement. Boring or jacking under state highways with no access control will be accomplished from pits located at least the total distance of 10 feet plus the depth of the pit without shoring. Wet boring or water jetting is not allowed. Boring and jacking under interstate highways will be from pits located outside the access control fence. Boring and jacking pits may be located closer than the required distance when they are protected in accordance with the INDOT *Design Manual* Chapter 303.

8. All trenchless underground installations of casings, pipes or conduits will be in accordance with the current INDOT Standard Specification 716. The diameter of the auger shall not exceed the outside diameter of the pulled pipe by more than one inch. Installations with a diameter of six inches or less may be accomplished by either jacking, guided whip auger or auger with the pulled pipe method. Open pits will be clearly marked, protected by barriers and secured from intrusion by pedestrians. Pits used for trenchless underground installations will be located in an area and constructed in such a manner that will not affect highway structural footings or the highway. Shoring may be used to protect the highway.

9. The utility shall request an addendum to their permit from INDOT to modify a permitted design for the installation or relocation of facilities. The utility shall provide a revised drawing with their request. The request for an addendum to their permit for a new installation shall be submitted to the District Permit Manager. The request for an addendum to their permit for facility relocation will be presented to the designated utility coordinator.

10. Utility tunnels shall be designed so that most repairs or replacement of sections of pipe line can be made without pulling the entire pipe line. The utility tunnel design shall include one or more entrance shafts of a size suitable for removal of one pipe section from the gallery. Utility tunnels shall extend across the full width of the right-of-way.

11. INDOT encourages the installation of multiple utility facilities in the same duct or same trench to minimize the impact on the highway right of way and reduce installation costs. One utility may be selected as the lead for the project to complete the design and construction.

12. Light poles shall be of single pole construction and located in accordance with the INDOT *Design Manual* Chapter 502. Light poles will not be permitted in the ditch line of any state highway. Light poles in the clear zone shall be breakaway design unless there are sidewalks and the potential for breakaway poles falling on pedestrians.

13. INDOT permits only utility poles, light poles and appurtenances to underground facilities on highway right of way as above ground installations. Appurtenances to underground facilities include pedestals, hydrants, markers, casing vents, regulator vault gage boxes, and pressure regulators.

3.0-(08) Construction

1. Preservation, Restoration, Cleanup, Drainage, and Environmental Permits.

a. Preservation. The utility shall make every effort to minimize the areas disturbed by their work. The utility shall make reasonable efforts to minimize damage to crops and agricultural land. The utility is responsible for any cost of damage to crops or agricultural land.

b. Restoration. The utility shall restore in a timely manner areas disturbed by their own forces or their contractor to a condition equal to or better than the condition prior to work. Restoration of disturbed areas shall be in accordance with the requirements of the work plan, INDOT Standard Specifications and all provisions of the permit including; General Provisions, Special Provisions and any Additional Special Provisions.

c. Cleanup. Spraying, Cutting and Trimming of Trees, Shrubs and/or Vegetation. A permit is required for the trimming, cutting, spraying or removal of trees, shrubs or other vegetation located with the highway right of way. A utility shall not spray, cut or trim trees, shrubs and/or other vegetation without the specific written permission of INDOT. INDOT may permit light trimming of a tree or the removal of a tree when requested by the utility. Tree removal includes removing the stump and backfilling the hole in accordance with INDOT specifications. All debris, refuse and waste will be removed from the right of way. Work will be in accordance with INDOT Standard Specifications 200 Earthwork.

d. Drainage. The utility shall maintain existing drainage patterns during the installation, maintenance or removal of their facilities. Trenches and bore pits for underground facility installations shall be backfilled in accordance with INDOT standard specifications. Outlets or under drains shall be installed as needed to avoid entrapped water. Test holes shall be back filled in accordance with INDOT specifications.

e. Environmental Permits. The utility shall obtain all required environmental permits to support the installation or relocation of their facilities. The utility shall implement erosion control, sediment control, and storm water management measures in accordance with 40 CFR Parts 9, 122, 123, & 124, 327 IAC 15-5 and the Indiana Storm Water Manual. The utility shall implement such measures to protect all areas disturbed by work performed by their own forces or work performed by their contractor. The utility shall implement such measures during work operations and after work operations until replacement vegetation is established or until the area is disturbed by another party.

2. Safety and Convenience.

a. Control of Traffic. Traffic control for utility construction and maintenance operations will conform to the Indiana Manual on Uniform Traffic Control Devices or the INDOT Work

Zone Safety Handbook. All construction and maintenance operations will be planned with due consideration to the safety of the public and maintaining traffic mobility. Any such work must be planned to minimize closure of intersecting streets, road approaches, traffic lanes, or other access points. On high volume highways, construction operations interfering with traffic should not be allowed during periods of peak traffic flow. In accordance with INDOT *Design Manual*, Chapter 503, a traffic control plan must be prepared and submitted with the permit application. INDOT may inspect traffic control operations for compliance with established standards. INDOT may inspect traffic control operations for compliance with the IMUTCD and the INDOT Work Zone Safety Handbook.

b. Work Site Safety.

1) The utility shall assure that their work site is secure against any hazard to the public at all times until all of their work is completed. The utility shall comply with the requirements of the IMUTCD and OSHHA. All pipe, conduit, wire, poles, cross arms or other materials located within the public right of way prior to installation shall be placed outside of any ditches and at least 30 feet beyond the edge of the traveled way or behind existing guard rails.

2) INDOT may require utility construction or maintenance operations on state highway right of way to be discontinued during periods of inclement weather or when soil conditions are such that the utility work would result in extensive damage to the highway right of way or create an unsafe traveling condition.

c. Maintenance and Repairs. The utility shall maintain all facilities in good repair both structurally and aesthetically. Maintenance of facilities crossing limited access highways shall be from city streets, county roads, service roads, and approved openings provided in limited access right-of-way fences unless such alternatives are not practical. Maintenance and repair does not include the installation or relocation of facilities.

3. Records. The utility shall maintain accurate, complete and understandable records for all of their facilities on public right of way and shall record such records when applicable. These records will cover active facilities and inactive facilities. The records will include the facility type, function, size, configuration, material, location, elevation and any special features such as encasement, manholes and valves. These records will include all service lines which enter or cross the highway right of way. The utility shall provide copies of these records at no cost within 30 days of a request.

4. Trenches, Bedding and Backfill. The essential features for trench construction are (a) restoration of the structural integrity of roadbed after trenching; (b) security of the pipe against deformation likely to cause leakage; and (c) assurance against the trench becoming a drainage channel. The integrity of the pavement structure, shoulders and embankment are of primary concern.

   Trenches, bedding and backfill will be in accordance with the INDOT standard specifications and as follows:

   a. Trenches will be cut with vertical faces where soil and depth conditions allow. The width of a trench will be the minimum necessary to accomplish the installation. Shoring will be used when necessary, in accordance with OSHA requirements.

   b. Bedding will be provided to a depth of 6 inches or half the nominal diameter of the pipe, duct, or duct bank, whichever is less. Bedding will consist of pit run sand and gravel mixture or other suitable materials approved by the permit inspector in accordance with section 904 of the INDOT Standard Specifications. Bedding will not be required for pipes, ducts or duct banks encased in concrete or flowable fill. The bottom of the trench will be prepared to provide the pipe, duct or duct bank with uniform bedding support throughout the length of the installation.

   c. Backfill will be provided in accordance with the INDOT standard specifications, section 715.09: Backfilling.

5. Underground Plant Protection.

   Indiana 811 is the agency that coordinates the protection of underground utility facilities in accordance with IC 8-1-26. Contact will be made with Indiana 811 two days prior to any excavation or survey so that underground facilities may be located and marked.

   The location of each underground utility will be marked by the utility with paint, flags or other temporary surface markings color coded for each utility type. The uniform color code system is as follows:

   a. Red: Electric power lines or conduits.
   b. Yellow: Gas, petroleum, steam or other hazardous materials.
   c. Orange: All types of communication lines.
   d. Blue: Water systems and slurry pipelines.
   e. Green: Storm and sanitary sewers.
   f. Purple. Reclaimed water.

g. Pink. Temporary survey markings
h. White. Proposed construction.

6. Pavement Cuts. Open cutting of pavement on interstate highways is not allowed. Open cutting of pavement on all other highways is highly discouraged because it adversely affects the integrity of the pavement and may disrupt the flow of traffic. A utility that desires to install their facility by open cut shall obtain a "cut road permit" from the appropriate INDOT District prior to starting their work. The permit request will explain the reasons why the utility desires to install their facilities by open cut. At the conclusion of the work, all cuts in the pavement will be repaired with like materials, to a similar or greater depth and to a condition equal to or better than the condition of the pavement prior to the work in accordance with INDOT Standard Specifications. INDOT will inspect all pavement cuts in the roadway to determine the extent of pavement repairs. The utility shall submit their pavement design for the repair of the pavement when the permit is requested. The design for pavement repairs will be approved prior to a permit being issued.

7. Road Closures. A utility that requires a road closure to install, service or relocate their facility shall obtain a permit prior to starting their work. The utility shall coordinate with the District Permit Engineer to determine an acceptable plan to address impacts to school busses and emergency vehicles including but not limited to ambulances, fire and law enforcement. The utility shall provide notice of the location and schedule for the proposed road closure to all impacted state and local agencies including but not limited to schools, hospitals, fire departments and law enforcement offices at least three months prior to the date of the planned road closure.

8. Emergency Repairs. Emergency repairs may be performed within the right of way when physical conditions or time constraints prevent applying for and obtaining a permit. The utility shall notify the District Permit Manager or INDOT Traffic Management Center as soon as possible about its plan of action for the emergency repairs prior to beginning any work within the right of way. The utility shall make arrangements for the control and protection of traffic or pedestrians affected by the proposed operations. The utility shall submit a permit application within seven working days of the work to cover the emergency repairs.

9. Inactive Facilities.

a. Inactive facilities fall into two categories. Facilities that are no longer in use and will be restored to service are called out of service facilities. Facilities that are no longer in use and will not be restored to service are called retired in place facilities. Retired in place facilities remain the responsibility of the utility until such are removed from the State highway right of way. INDOT does not allow a utility to absolve themselves of accountability and

responsibility for their facilities by abandoning those facilities on public property. The utility shall maintain accurate, complete and understandable records of all inactive facilities.

b. The utility will remove all above ground inactive facilities within sixty calendar days of the facility becoming inactive.

c. INDOT prefers that underground facilities that are out of service be removed from the right of way when reasonable. The utility will remove underground out of service facilities that may impair the safety or integrity of the highway or adversely impact the environment. The utility may remove underground out of service facilities provided that such removal does not impair the safety or integrity of the highway or adversely impact the environment.

d. A utility may leave retired in place pipes of any material that are 12 inch or less in diameter provided the ends are sealed. A utility may leave retired in place pipes of greater than 12 inches in diameter provided they are filled with flowable fill and the ends are sealed. The flowable fill material shall be in accordance with INDOT Standard Specifications.

10. INDOT may inspect all utility installations within highway right of way. If any violations or deficiencies are observed, INDOT shall provide notice of such violations or deficiencies to the utility. The utility shall establish with INDOT a reasonable timeframe for corrective action if such is necessary. The cost of subsequent inspections may be charged to the utility.

4.0 Structures

4.0-(01) Utility Structures

INDOT may allow the construction of a bridge or tunnel to facilitate the placement of one or more utility facilities. The utility is responsible for and will pay the cost for design, construction, maintenance and repair of these structures. INDOT will participate in these costs to the extent that the utility is reimbursable for such work as the result of a highway project or to the extent that the structure is also used for highway purposes.

4.0-(02) Highway Structures

INDOT does not allow facilities that supply hazardous, explosive, high voltage, high pressure or heated commodities to occupy or attach to highway structures. These types of commodities include but are not limited to natural gas, petroleum, and electricity. INDOT highly discourages the attachment of all other types of facilities to highway structures. A utility that desires to attach facilities to a highway structure

shall submit a letter requesting permissions to attach to a specified structure. The letter shall detail the facilities to be attached and explain why other locations for the facility are not reasonable. The letter will be addressed to Statewide Director, Utilities & Railroads, INDOT IGCN Room N642, 100 North Senate Ave, Indianapolis, Indiana 46204. Highway structures include bridges, small structures, culverts or other drainage pipes.

Facilities that are allowed to attach to highway structures will comply with the following.

1. In no case will lines be installed where they can be impacted by traffic on or under the bridge or where a leak could flood a roadway on or under the bridge.

2. Lines will not be attached to highway structures where they interfere with traffic, routine maintenance operations, the flow of water or degrade the appearance of the structure.

3. Facilities will be carried in conduits or casings of sufficient strength to protect the line.

4. INDOT may include conduits in the design of a bridge provided that;

    a. The utility provides a written request providing the details of their requirements prior to the completion of the design of the highway improvement project.

    b. The utility agrees to pay all additional costs associated with the design and construction to accommodate their requirements.

5. Structural Analysis. All requests to attach pipelines to an existing bridge must be accompanied by sufficient information including design details and calculations certified by a professional engineer to determine the effect of the added load on the structure. If the bridge does not have sufficient strength to carry the loads with an adequate margin of safety, the request will be denied. Where the request is to attach lines within or to a new structure, the utility will be responsible for any increase in the cost of the structure to support the extra loads of the pipeline, including any increase in the size or thickness of members necessary to contain lines or conduits installed within the structure.

6. Attachment Details. All requests for attachments must be accompanied by sufficient details of the manner and type of attachment to allow for adequate review and approval by INDOT.

7. Asbestos Materials. Materials containing asbestos shall not be used on any facilities attached to a highway structure.

8. Any time that an attachment must be relocated to accommodate highway work or safety, the utility must apply for a new attachment. Prior existence will not be a basis for reattachment.

5.0 Pipelines

5.0-(01) General

1. General. All pipelines will provide sufficient strength to withstand internal design pressures. All pipelines will provide sufficient strength to withstand external design pressures including superimposed loads of soil, roadway, traffic, construction equipment, etc. All pipelines will be of satisfactory durability to withstand the conditions to which they may be subjected. All pipelines must meet any other applicable codes or industry standards.

2. Encasement. Pipelines with encasements will consist of a pipe or other separate structure around and outside of the carrier line. Encasements may be metallic or nonmetallic. The encasement will be of sufficient strength to withstand external design pressures including superimposed loads of soil, roadway, traffic, construction equipment, etc. Casing strength will meet or exceed the structural requirements for drainage culverts. Casing materials must be of satisfactory durability to withstand the conditions to which they may be subjected. When used, encasement will extend under the median, from top of back slope to top of back slope for cut sections, 5 ft beyond the toe of slope under fill sections, 5 ft beyond the back of the curb, and 5 ft beyond any structure which the lines passes under or through. Encasement may be omitted under medians that are substantially wider than normal standards for such roadway, such as when the roadways are on independent alignments.

3. Manholes, Vaults, Pits and Hand Holes. Generally, manholes, vaults and pits are discouraged from being placed in the pavement, shoulders or curbs of any roadway. However, if they are permitted in the roadway, they should be installed outside the normal wheel path and away from intersections. In general these types of access points are limited to those necessary to install and service the lines. They will be placed directly in line with the facilities and of the minimum width to accomplish their intended function. They will be installed so the top of the facility is flush with the roadway or ground surface. They will provide sufficient strength to withstand external design pressures including superimposed loads of soil, roadway, traffic, construction equipment, etc.

4. Clearances. Vertical and horizontal clearances between a pipeline and a highway structure, other highway appurtenances or utility facilities should be sufficient to allow maintenance of the pipeline and the other items.

5. Depths. The table attached at Appendix A summarizes the minimum depths of cover for underground lines as described herein.

5.0-(02) Liquid Petroleum Lines

1. Depth of Cover for New Lines. All lines that are not under or within 5.0 feet of the roadway will have a minimum depth of cover of 3.0 feet for encased lines and non-encased lines. All lines which are under or within 5.0 feet of the roadway will have a minimum depth of cover under pavement of 4.0 feet for encased and non-encased lines. Further, all lines will be a minimum of 2.0 feet or one half the diameter of the pipe or casing below the pavement structure and sub-grade whichever is lower. All lines must have a minimum depth of cover of 4.0 feet under ditches.

2. Depth of Cover for Existing Lines. Existing lines may be allowed to remain in place with a reduction of 0.5 feet in the depths of cover specified above. Also, existing lines may remain in place with a lesser depth of cover if the pipeline is protected by a reinforced concrete slab which complies with the requirements listed below.

   a. Width. The width shall be three times the pipe diameter or encasement diameter whichever is greater but not less than 4.0 feet.

   b. Thickness. The thickness shall be a minimum of 6 inches.

   c. Reinforcing. The minimum reinforcement shall be No. 4 epoxy coated bars on 12 inch center, or the equivalent.

   d. Cover. The cover shall be at least six inches between the slab and top of pipe.

3. Crossings. These may be encased or non-encased. However, only welded steel lines with adequate corrosion protection may be used for non-encased highway crossings.

4. Vents. One or more vents will be provided for each casing or series of casings. For casings longer than 150.0 feet, a vent will be provided at both ends of the casing. On casings of 150.0 feet or less, a vent will be provided at both ends of the casing or a vent will be located at the high end with a marker placed at the low end. Vents will be placed at the right-of-way line immediately above the pipeline and situated so they do not interfere with highway maintenance and are not concealed by vegetation. The name of the utility will be shown on the vents.

5. Markers. The utility will place a readily identifiable and suitable marker immediately above any liquid petroleum line where it crosses the right-of-way line, except where there is a vent.

5.0-(03) Gas Lines, High Pressure

1. Depth of Cover for New Lines. All lines that are not under or within 5.0 feet of the roadway will have a minimum depth of cover of 3.0 feet for encased lines and non-encased lines. All lines which are under or within 5.0 feet of the roadway will have a minimum depth of cover under the pavement of 4.0 feet for encased and non-encased lines. Further, all lines will be a minimum of 2.0 feet or one half the diameter of the pipe or casing below the pavement structure and sub-grade whichever is lower. All lines must have a minimum depth of cover of 4.0 feet under ditches.

2. Depth of Cover for Existing Lines. Existing lines may be allowed to remain in place with a reduction of 0.5 feet in the depths of cover specified above. Also, existing lines may remain in place with a lesser depth of cover if the pipeline is protected by a reinforced concrete slab which complies with the requirements listed below.

   a. Width. The width shall be three times the pipe diameter or encasement diameter whichever is greater but not less than 4.0 feet.

   b. Thickness. The thickness shall be a minimum of 6 inches.

   c. Reinforcing. The minimum reinforcement shall be No. 4 epoxy coated bars on 12 inch center, or the equivalent.

   d. Cover. The cover shall be at least six inches between the slab and top of pipe.

3. Crossings. These may be encased or non-encased. However, only welded steel lines with adequate corrosion protection may be used for non-encased highway crossings.

4. Vents. One or more vents will be provided for each casing or series of casings. For casings longer than 150.0 ft, a vent will be provided at both ends of the casing. On casings of 150.0 ft or less, a vent will be provided at both ends of the casing or a vent will be located at the high end with a marker placed at the low end. Vents will be placed at the right-of-way line immediately above the pipeline and situated so they do not interfere with highway maintenance and are not concealed by vegetation. The name of the utility will be shown on the vents.

5. Markers. The utility will place a readily identifiable and suitable marker immediately above any high pressure gas line where it crosses the right-of-way line, except where there is a vent.

5.0-(04) Gas Lines, Low Pressure & Medium Pressure

1. Depth of Cover for New Lines. All lines that are not under or within 5.0 feet of the roadway will have a minimum depth of cover of 3.0 feet for encased lines and non-encased lines. All lines which are under or within 5.0 feet of the roadway must have a minimum depth of cover under the pavement of 4.0 feet for encased and non-cased lines. Further, all lines will be a minimum of 2.0 feet or one half the diameter of the pipe or casing below the pavement structure and sub-grade whichever is lower. All lines must have a minimum depth of cover of 4.0 feet under ditches.

2. Depth of Cover for Existing Lines. Existing lines may be allowed to remain in place with a reduction of 0.5 feet in the depths of cover specified above.

3. Crossings. These may be encased or non-encased. Non-encased crossings must be welded steel construction with adequate corrosion protection or plastic lines with no joints under or within 5.0 feet of the roadway.

4. Vents. One or more vents will be provided for each casing or series of casings. For casings longer than 150.0 feet, a vent will be provided at both ends of the casing. On casings of 150.0 feet or less, a vent will be provided at both ends of the casing or a vent will be located at the high end with a marker placed at the low end. Vents will be placed at the right-of-way line immediately above the pipeline and situated so they do not interfere with highway maintenance and are not concealed by vegetation. The name of the utility will be shown on the vents.

5. Markers. The utility will place a readily identifiable and suitable marker immediately above any medium pressure gas line and low-pressure gas line where it crosses the right-of-way line, except where there is a vent.

6. Location. In urban areas existing longitudinal lines may remain in place provided they comply with the following:

   a. the lines can be maintained without violating access control;

   b. the lines will not interfere with the proposed highway improvement project;

c. the lines are of sufficient strength and durability to withstand the changed conditions and have adequate remaining service life to prevent maintenance, repair or replacement;

d. service access points are adjusted to be flush with the surface to accommodate any changes in grade;

e. service access points are positioned to be out of the normal wheel path to accommodate any changes in traffic patterns and away from intersections; and

f. the lines comply with all other requirements of this policy.

5.0-(05) Water Lines

1. Depth of Cover for New Lines. All lines that are not under or within 5.0 ft of the roadway will have a minimum depth of cover of 3.0 feet. All lines which are under or within 5.0 ft of the roadway will have a minimum depth of cover under the pavement surface of 4.0 feet. Further, all lines will be a minimum of 2.0 feet or one half the diameter of the pipe or casing below the pavement structure and sub-grade whichever is lower. All lines must have a minimum depth of cover of 4.0 feet under ditches.

2. Depth of Cover for Existing Lines. Existing lines may be allowed to remain in place with a reduction of 0.5 feet in the depths of cover specified above.

3. Crossings. All crossings under the roadway and within 5.0 ft of the roadway must be encased, except service lines of 2 inches diameter or less.

4. Appurtenances. Customer meter pits, sprinkler pits, and similar type features should not be placed within the State highway right of way. Appurtenances will not be located within the pavement. Existing appurtenances may remain if they do not interfere with proposed highway construction, maintenance, operation or safety.

5. Casings. All casings will be sealed at both ends.

6. Markers. The utility will place a readily identifiable and suitable marker immediately above any water line where it crosses the right-of-way line.

7. Location. In urban areas existing longitudinal lines may remain in place provided they comply with the following:

   a. the lines can be maintained without violating access control;

   b. the lines will not interfere with the proposed highway improvement project;

   c. the lines are of sufficient strength and durability to withstand the changed conditions and have adequate remaining service life to prevent maintenance, repair or replacement;

   d. service access points are adjusted to be flush with the surface to accommodate any changes in grade;

   e. service access points are positioned to be out of the normal wheel path to accommodate any changes in traffic patterns and away from intersections; and

   f. the lines comply with all other requirements of this policy.

5.0-(06) Sanitary Sewer Lines

1. Depth of Cover for New Lines. All lines that are not under or within 5.0 feet of the roadway must have a minimum depth of cover of 3.0 feet. All lines which are under or within 5.0 feet of the roadway will have a minimum depth of cover under the pavement surface of 4.0 feet. Further, all lines will be a minimum of 2.0 feet or one half the diameter of the pipe or casing below the pavement structure and sub-grade whichever is lower. All lines will have a minimum depth of cover of 4.0 feet under ditches.

2. Depth of Cover for Existing Lines. Existing lines may be allowed to remain in place with a reduction of 0.5 feet in the depths of cover specified above.

3. Crossings. All crossings under the roadway and within 5.0 ft of the roadway must be encased, except non-pressurized lines.

4. Markers. The utility will place a readily identifiable and suitable marker immediately above any sanitary line where it crosses the right-of-way line.

5. Location. In urban areas existing longitudinal lines may remain in place provided they comply with the following:

a. the lines can be maintained without violating access control;

b. the lines will not interfere with the proposed highway improvement project;

c. the lines are of sufficient strength and durability to withstand the changed conditions and have adequate remaining service life to prevent maintenance, repair or replacement;

d. service access points are adjusted to be flush with the surface to accommodate any changes in grade;

e. service access points are positioned to be out of the normal wheel path to accommodate any changes in traffic patterns and away from intersections; and

f. the lines comply with all other requirements of this policy.

6.0 Overhead Power Lines and Communication Lines

1. Type of Construction. Longitudinal lines will be limited to single pole construction. Transverse lines will be limited to single pole construction or that type of construction used on the portion of the line adjacent to the highway right of way. INDOT discourages the placement of towers on highway right of way.

2. Vertical Clearances. The vertical clearance for overhead power and communication lines above the highway shall be a minimum of 18.0 feet. The vertical clearance of overhead power lines and communication lines relative to a highway bridge or other highway structure shall provide reasonable space for construction and maintenance activities in accordance with OSHA standards.

3. Location. The following applies:

   a. All new utility pole installations and other above ground appurtenances will be located outside of the appropriate clear zone. New installations will not be permitted where the clear zone extends to the right-of-way line. Similarly, existing installations will be relocated outside of the clear zone when they are found within the project limits of any highway improvement project;

b. In rural areas and at uncurbed sections in urban areas, poles supporting longitudinal lines shall be located on a uniform alignment as close to the right-of-way line as possible;

c. At curbed sections, in urban areas, poles shall be located as far as practical behind the curb and preferably adjacent to the right-of-way line;

d. The number of guy wires placed within the right of way will be held to a minimum. Preferably, guy wires and guy poles placed inside the right of way will be in line with the pole line. Preferably, guy wires and guy poles that are not in line with the pole line will be placed outside of the right of way. Guy wires and guy poles may be placed in other locations but in no case shall they be located within the specified clear zone;

e. Poles for longitudinal installations shall not be allowed in the center median. Poles for transverse crossing may be allowed where the cost of spanning an extreme width is excessive and where poles can be located in accordance with the other provisions of this policy;

f. The horizontal location of overhead power and communication lines relative to a highway bridge or other highway structure shall provide reasonable adequate clearance for construction and maintenance activities in accordance with OSHA standards; and

g. Ground mounted appurtenances will be located at or near the right-of-way line. Ground mounted appurtenances will be installed with a vegetation free area extending one foot beyond the appurtenance in all directions. The vegetation free area may be provided by an extension of the mounting pad, heavy duty plastic or similar material. The housing for ground mounted appurtenances shall be an inconspicuous color. Appurtenances will not be located within the pavement, shoulders or curbs of any roadway. Existing appurtenances may remain if they do not interfere with proposed highway construction, maintenance, operation or safety.

7.0 Underground Power Lines and Communication Lines

7.0-(01) General

1. Conduits. Facilities with conduits will consist of a pipe or other separate structure around and outside the power line or communication line. Conduits may be metallic or nonmetallic. The conduit will be of sufficient strength to withstand external design pressures including superimposed loads of soil, roadway, traffic, construction equipment, etc. Conduit strength will meet or exceed the structural requirements for drainage culverts. Conduit materials must be of

satisfactory durability to withstand the conditions to which they may be subjected. Where used, conduits will extend under the median, from top of back slope to top of back slope for cut sections, 5 ft beyond the toe of slope under fill sections, 5 ft beyond the back of the curb, and 5 ft beyond any structure which the lines passes under or through. Conduit may be omitted under medians that are substantially wider than normal standards for such roadway, such as when the roadways are on independent alignments. All conduits must meet any other applicable codes or industry standards.

2. Manholes, Vaults, Pits and Hand Holes. Generally, manholes, vaults and pits are discouraged from being placed in the pavement, shoulders or curbs of any roadway. However, if they are permitted in the roadway, they should be installed outside the normal wheel path and away from intersections. In general these types of access points are limited to those necessary to install and service the lines. They will be placed directly in line with the facilities and of the minimum width to accomplish their intended function. They will be installed so the top of the facility is flush with the roadway or ground surface. They will provide sufficient strength to withstand external design pressures including superimposed loads of soil, roadway, traffic, construction equipment, etc.

3. Appurtenances. Pedestals, switch box and other similar type above ground features should be located near the edge of the State highway right of way. Appurtenances shall be constructed with a vegetation free area extending one foot beyond the appurtenance in all directions. The vegetation free area may be provided by an extension of the mounting pad, heavy duty plastic or other material. The housing for all appurtenances shall be an inconspicuous color. Appurtenances will not be located within the pavement, shoulders or curbs of any roadway. Existing appurtenances may remain if they do not interfere with proposed highway construction, maintenance, operation or safety.

7.0-(02) Underground Power Lines

1. Depth of Cover for New Lines. All lines that are not under or within 5.0 feet of the roadway must have a minimum depth of cover of 3.0 feet. All lines which are under or within 5.0 feet of the roadway must have a minimum depth of cover under the pavement surface of 4.0 feet. Further, all lines will be a minimum of 2.0 feet or one half the diameter of the line or conduit below the pavement structure and sub-grade whichever is lower. All lines will have a minimum depth of cover of 4.0 feet under ditches.

2. Depth of Cover for Existing Lines. Existing lines may be allowed to remain in place with a reduction of 0.5 feet in the depths of cover specified above. Also, existing lines may remain in

place with a lesser depth of cover if the pipeline is protected by a reinforced concrete slab which complies with the requirements listed below.

a. Width. The width shall be three times the pipe diameter or encasement diameter whichever is greater but not less than 4.0 feet.

b. Thickness. The thickness shall be a minimum of 6 inches.

c. Reinforcing. The minimum reinforcement shall be No. 4 epoxy coated bars on 12 inch center, or the equivalent.

d. Cover. The cover shall be at least six inches between the slab and top of pipe.

3. Crossings. Underground power lines shall be in a conduit. The use of a conduit or other suitable protection will be considered for power lines located near footings of bridges, highway structures or other locations that may be exposed to workers or the public. The use of a conduit or other suitable protection will be considered for communication lines located near footings of bridges, highway structures or other locations where the integrity of the line may be at risk.

4. Markers. The utility will place a readily identifiable and suitable marker immediately above any underground power line where it crosses the right-of-way line.

5. Location. In urban areas existing longitudinal lines may remain in place provided they comply with the following:

a. the lines can be maintained without violating access control;

b. the lines will not interfere with the proposed highway improvement project;

c. the lines are of sufficient strength and durability to withstand the changed conditions and have adequate remaining service life to prevent maintenance, repair or replacement;

d. service access points are adjusted to be flush with the surface to accommodate any changes in grade;

e. service access points are positioned to be out of the normal wheel path to accommodate any changes in traffic patterns and away from intersections; and

f. the lines comply with all other requirements of this policy.

7.0-(03) Underground Communication Lines

1. Depth of Cover. All lines that are not under or within 5.0 feet of the roadway must have a minimum depth of cover of 3.0 feet. All lines which are under or within 5.0 feet of the roadway must have a minimum depth of cover under the pavement surface of 4.0 feet. Further, all lines must be a minimum of 2.0 feet or one half the diameter of the line or conduit below the pavement structure and sub-grade, whichever is greater. All lines must have a minimum depth of cover of 4.0 feet under ditches.

2. Existing lines may be allowed to remain in place with a reduction of 0.5 feet in the depths of cover specified above.

3. Crossings. Lines crossing highways do not require conduit. The use of a conduit or other suitable protection will be considered for communication lines located near footings of bridges, highway structures or other locations where the integrity of the line may be at risk.

4. Markers. The utility will place a readily identifiable and suitable marker immediately above any underground communication lines where it crosses the right of way line.

5. Location. In urban areas existing longitudinal lines may remain in place provided they comply with the following:

    a. the lines can be maintained without violating access control;

    b. the lines will not interfere with the proposed highway improvement project;

    c. the lines are of sufficient strength and durability to withstand the changed conditions and have adequate remaining service life to prevent maintenance, repair or replacement;

    d. service access points are adjusted to be flush with the surface to accommodate any changes in grade;

    e. service access points are positioned to be out of the normal wheel path to accommodate any changes in traffic patterns and away from intersections; and

    f. the lines comply with all other requirements of this policy.

8.0 Irrigation and Drainage Pipes, Ditches and Canals

1. Irrigation and drainage pipes crossing state right of way may be permitted. Irrigation and drainage pipes installed across any highway right of way must be designed, constructed and maintained in accordance with INDOT standards for culverts and bridges.

2. Ditches and canals may be permitted on state right of way if they comply with the clear zone requirements of the INDOT *Design Manual*, Chapter 303.

Appendix A Minimum Depth of Cover for Utility Lines

Minimum Depth of Cover for Utility Lines (Feet)			
	Under or within 5 ft of pavement or structure(1)	Not under or within 5 ft of pavement or structure	Under ditches(2)
Liquid Petroleum Lines Encased	2.5	2.5	4.0
Liquid Petroleum Lines Not Encased	4.0	3.0	4.0
High Pressure Gas Lines Encased	2.5	2.5	4.0
High Pressure Gas Lines Not Encased	4.0	3.0	4.0
Medium & Low Pressure Gas Lines Encased	2.5	2.5	4.0
Medium & Low Pressure Gas Lines Not Encased	4.0	3.0	4.0
Water Lines(3)	4.0	3.0	4.0
Sanitary Lines	4.0(4)	3.0	4.0
Underground Power Lines Encased	2.5	2.5	4.0
Underground Power Lines Not Encased	4.0(5)	3.0	4.0
Underground Communication Lines Encased	2.5	2.5	3.0
Underground Communication Lines Not Encased	4.0	2.5	3.0
Notes			
1. Minimum 1.5 ft below structure or improvement			
2. May be reduced if existing or capped.			
3. Dependant on IDEM & Ten State standards			
4. Minimum 2.5 ft below structure or improvement			
5. Must be encased for crossings if over 600 volts			